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SYMPOSIUM: SOVEREIGNTY AND THE GLOBALIZATION OF INTELLECTUAL PROPERTY: Intellectual Property, Human Rights & Sovereignty: New Dilemmas in International Law Posed by the Recognition of Indigenous Knowledge and the Conservation of Biodiversity

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SUMMARY:

... The recognition of IPRs as human rights entails a renewed concern for social justice issues in an era of so-called global harmonization of intellectual property protections that further challenges our considerations of sovereignty. ... One cannot counterpose absolutely global scientific knowledge with local indigenous knowledge--people everywhere have access to both and use them in conjunction. ... The issue of intellectual property has, for many indigenous peoples, been an effective rhetorical vehicle to keep issues of autonomy and self-determination on the global bargaining table. ... The CBD is an example of the recognition that environmental issues are global in scope and implication. ... It would be a gross misrepresentation of global cultural politics to suggest that all indigenous interest in intellectual property assumes a collective cultural form. ... This knowledge network is seen as complementary to intellectual property incentives as a means of alleviating the poverty that currently degrades the people whose activities are the most important in protecting the global biological heritage. ... An acknowledgement of their status as human rights instruments seems timely, if not urgent, given the contemporary hegemony of financial and trade considerations in global discussions of intellectual property. ...

TEXT:

[*59] INTRODUCTION

What would it mean to recognize intellectual property rights as international human rights? This is a speculative question because although there is a case to be made that intellectual property rights (IPRs) *are already* human rights, they are rarely approached in this fashion, either by governments or by the holders of such rights. By situating intellectual property in the human rights framework, we may consider some of the challenges that full recognition of intellectual property as a human right would pose. Conflicts over the meaning and location of culture create fundamental ambiguities with respect to the scope of intellectual property protections. An examination of recent controversies over the use of IPRs to protect indigenous knowledge and as a means to implement provisions of the Convention on Biological Diversity

will illustrate the point and demonstrate the limitations of traditional understandings of sovereignty. The recognition of IPRs as human rights entails a renewed concern for social justice issues in an era of so-called global harmonization of intellectual property protections that further challenges our considerations of sovereignty.

The international human rights framework is unfamiliar for many intellectual property scholars, so I will summarily present the necessary legal scaffolding for building the argument. The Universal Declaration of Human Rights (UDHR) is the most general embodiment of today's international human [*60] rights norms. Its provisions have been incorporated into national constitutions, regional conventions, and international covenants--the most important of which are the International Covenant on Civil and Political Rights n1 (CCPR) and the International Covenant on Economic, Social and Cultural Rights n2 (CESCR). Intellectual property occupies an ambiguous status in terms of these rights categories, insofar as the right to property is protected under the CCPR, whereas "the [author's] right to benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production," n3 is one of the cultural rights enshrined in the CESCR. Moreover, intellectual properties of cultural significance to minority groups may be seen as aspects of the right to cultural identity under the CCPR, which further complicates their status. Nonetheless, such categorical ambiguities should not be great cause for concern; the United Nations has repeatedly stated that the two sets of rights are interdependent and indivisible, and most contemporary commentators agree that the distinctions between the categories have been overstated. n4 Although economic, social, and cultural rights have been juridically marginalized in comparison to civil and political rights, both in terms of the institutional frameworks developed for their implementation and in terms of their judicial interpretation, n5 failure to monitor the violation of economic, social, and cultural rights has less to do with the legal obligations established by the CESCR than with political problems of resolve. n6

[*61] The idea that there are two categories of rights originated in the 1966 United Nations General Assembly adoption of the two discrete Covenants: one dealing with civil and political rights and another dealing with economic, social, and cultural rights. This twofold division originated in a controversial 1951 decision of the United Nations General Assembly. The States of the Soviet Bloc are widely believed to have championed economic, social, and cultural rights, while Western nations put emphasis on the civil and political rights that guaranteed civil liberties. However, even this dichotomy is misleading. "International second-generation rights" in fact have Western origins in: President Roosevelt's "Four Freedoms Address" in 1941, his proposal for an "Economic Bill of Rights" in 1944, and the American Law Institute's draft international bill of rights that same year. n7

According to Philip Alston, the Cold War "changed what was a rational and balanced debate between 1944 and 1947 (culminating in the adoption of the Universal Declaration) into a struggle that encouraged the taking of extreme positions and prevented objective consideration of the key issues raised by the concept of economic and social rights." n8 Ideological conflict created the perception of two discrete kinds of rights. The Cold War also had implications for policymaking at national levels, chilling the introduction of economic, social, and cultural rights in much domestic legislation. n9

The decision to divide the two sets of rights into separate covenants was predicated on a number of assumptions, many of which are now considered questionable. Civil and political rights were believed to be "absolute" and "immediate," whereas economic, social, and cultural rights were considered more "programmatic,"--they could be and would have to be realized gradually; hence, they were not viewed as rights in the same sense. n10 Similarly, civil and political rights were deemed "justiciable" in that they could be more easily applied by courts and other tribunals, whereas economic, social, and cultural rights were more political in nature. In retrospect, it appears that these assumptions were overstated,

misleading, or mistaken and that there are substantial similarities pertaining to State obligations with respect to both [*62] groups of rights. n11 In fact, of the almost 120 States that have ratified the CCPR, only two--the United States and Haiti--have failed to also ratify the CESCRC, and overall, more States have ratified the latter.

While resistance to particular rights may be found in many societies, the tendency in both Western and non-Western societies has been toward a greater integration of the rights that are internationally recognized. For example, in later human rights instruments, such as the Convention on the Rights of the Child and the International Convention on the Elimination of All Forms of Discrimination Against Women, social, economic, cultural, civil, and political rights are not separated, but combined. n12 Furthermore, in 1993, "representatives of 171 governments assembled in Vienna at the World Conference of Human Rights and reiterated that all human rights are universal, indivisible, interdependent and interrelated." n13

The "revitalization" of the CESCRC since the mid-1980s may, according to Mathew Craven, "be indirectly attributed to the end of the ideological confrontation between East and West." n14 In the last decade, we have seen renewed interest in these rights at international, national, regional, and local levels. This renewed interest may also be motivated by increased recognition that structural adjustment policies, global capital restructuring, and the opening of markets are creating new pressures and new needs for economic, social, and cultural rights protections. The incorporation of IPRs under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) n15 and the purview of the World Trade Organization (WTO) may provide further reasons for States to consider their obligations with respect to intellectual property rights as cultural rights recognized within a human rights framework. To the extent that we have seen rights to intellectual property entrenched and expanded internationally, it is even more important to ensure that those rights are exercised in a fashion congruent with international human rights norms.

In a recent overview, Scott Leckie argues that the permeable nature of many [*63] human rights "should have long ago laid to rest sentiments divorcing, rather than merging, civil, cultural, economic, political, and social human rights." n16 Given that civil and political rights have socioeconomic dimensions, and that social, economic, and cultural rights have significant civil and political implications, and that violations of one form of right may often be formulated as violations of the other, "the continued categorization of rights is a flawed approach to understanding or interpreting human rights law and related violations thereof." n17 Paul Hunt argues that these are compelling arguments supported by international and national jurisprudence and that such an integrated approach to human rights protection should be internationally embraced. n18 How, then, might intellectual property rights be approached if we were to give institutional weight to this proposition?

I. IPRS AND THE HUMAN RIGHTS REPORTING PROCESS

IPRs are most clearly referred to in Article 15 of the CESCRC as one of the four cultural rights that are to be respected with regard to three proscribed undertakings. It provides as follows:

1. The States Parties to the present Covenant recognize 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 [*64] production of which he is the author.
2. The steps to be taken by the States Parties to the present Covenant to achieve 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 co-operation in the scientific and cultural fields. n19

These cultural rights have not received a great deal of either judicial or academic attention and as a consequence their scope remains unclear. As Asbj[empty set]rn Eide suggests, cultural rights appear at the end of the rights enumerated in both the UDHR and the CESCR and "appear almost as a remnant category," n20 --a marginalization that is reflected both in human rights practice and its theory.

Most States party to the CESCR (State parties) report developments in intellectual property protections pursuant to their reporting obligations under the CESCR (rather than under the CCPR), which would indicate that there is an international practice and potentially a customary norm of recognizing IPRs as cultural rights in international human rights law. n21 However, State parties [*65] do not seem to report intellectual property developments in a fashion that adequately relates the State's progress in securing IPRs with its other obligations under the CESCR. n22 Under Article 15(2) of the CESCR, the steps taken by the State party to respect IPRs "shall include those necessary for the conservation, the development, and the diffusion of science and culture." n23 Thus, the conservation of culture is an end to be achieved through intellectual property, and so is its diffusion. This is consistent with an understanding of works of culture as being both individually created and socially shared. Indeed, most IPR regimes are predicated upon a social obligation to make works publicly available, although increasingly at prices set by the market or by negotiated tariffs.

When reporting to the Committee on its realization of rights under Article 15, the State is asked to describe measures adopted to realize "the right of everyone to take part in the cultural life which he or she considers pertinent, and to manifest his or her own culture." n24 More specifically, the State is asked to provide information about measures taken to further the enjoyment of the cultural heritage of indigenous peoples, the preservation of "mankind's cultural heritage," and other measures taken for "the conservation and development of culture." n25 The State must detail measures taken to ensure the application of scientific progress "for the benefit of everyone, including measures aimed at the preservation of mankind's natural heritage and at promoting a healthy and pure environment and information on the institutional infrastructures established for that purpose." n26 Any particular difficulties faced by indigenous groups must be reported.

Finally, State parties must report measures to prevent the use of scientific and technical progress for purposes that are contrary to the enjoyment of human rights. n27 The State party is asked to describe measures taken to realize the right of everyone to benefit from the protection of the moral and material interests [*66] resulting from any scientific, literary, or artistic work, including the protection of intellectual property resulting from such activities. n28 State parties must describe the systems in place to ensure respect for and protection of freedom indispensable for scientific research and creative activity, along with "measures taken to guarantee the freedom of exchange of scientific, technical, and cultural information, views and experience between scientists, writers, creative workers, artists and other creative individuals and their respective institutions." n29

A closer examination of State obligations with respect to cultural rights reveals a set of obligations that go far beyond merely reporting legislative developments. n30 States' obligations under the CESCR are

found primarily in Article 2.1 and the various General Comments issued by the Committee each year. n31 States obligate themselves under the CESCR to take steps with a view to progressively achieving the rights, including the adoption of legal measures:

The adoption of such legislation constitutes a process of positivization of economic, social and cultural rights at the national level. The transformation of economic, social and cultural rights into positive law, whether in constitutions or in statutory law, is, however, not enough. The rights must be realized in fact, which may require comprehensive administrative measures and social action. n32

The Committee on Economic, Social, and Cultural Rights (Committee) has been [*67] instrumental in promoting greater attention to the CESCR within the United Nations. Social, cultural, and economic rights issues have also been addressed with increasing frequency by the Sub-Commission on Prevention of Discrimination and Protection of Minorities. Four other United Nations agencies are important in the CESCR's implementation: the International Labour Organization (ILO), the World Health Organization (WHO), the United Nations Educational, Scientific, and Cultural Organization (UNESCO), and the Food and Agriculture Organization (FAO). n33

Pursuant to Article 16, State parties "undertake to submit in conformity with this part of the Covenant reports on the measures which they have adopted and the progress made in achieving the observance of the rights recognized herein." n34 General Comments are issued regularly to clarify articles of the Covenant and State obligations. n35

In its 1989 General Comment, the Committee asserted that the reason for filing country reports is to ensure that the State party monitors each right to determine if these rights are being enjoyed by all individuals. n36 Monitoring provides a basis for policy formation once shortcomings in individual enjoyment of rights are identified. This is the obligation to take steps by all appropriate means--to develop and adopt a plan of action. Ideally, the Committee welcomes public scrutiny of government policies and public involvement in the reporting process so that shortcomings in rights protection are brought to government attention for inclusion in the State report. Thus, interested nongovernmental organizations (NGOs) are allowed to make submissions to the Committee whenever they have evidence, for example, that IPRs are being exercised in a fashion that is incongruent with other human rights norms.

Rights and duties are integrally related, as Asbj[empty set]rn Eide suggests. Under international law, States have obligations for human rights, and State duties are clarified incrementally by way of additional, more specific instruments, and [*68] through the practice of monitoring bodies. n37 When States give effect to these obligations in national law, they must impose duties on persons subject to their jurisdiction. The States' obligations to protect involve duties to prevent abuse of rights by third parties, including non-State actors, whereas obligations to fulfill involve active duties to take appropriate measures that create a framework for determining accountability. When considering potential victims of violations, "the Committee has recognized that both individuals and groups can be subjected to violations of economic, social, and cultural rights." n38 State obligations include:

The protection of the freedom of action and the use of resources against other, more assertive or aggressive subjects and more powerful economic interests, protection against fraud, against unethical behaviour in trade and contractual relations, against the marketing and dumping of hazardous or dangerous products. This protective function of the State is also the most important aspect of State obligations with regard to economic, social, and cultural rights, and it is similar to the role of the State as protector of civil and political rights. n39

Questions as to when and whether a State is in violation of economic, social, and cultural rights are addressed by the Limburg Principles on the Implementation of the International Covenant on Economic, Social and Cultural Rights. n40

In addition to active denials of economic, social and cultural rights by states, omissions such as persistent deficiencies of due diligence, failures to act in accordance with prescribed legal obligations, failures to fulfill obligations of an immediate nature, and the prevailing absence of obligatory legal measures or remedial mechanisms also represent very common types of [*69] violations of economic, social and cultural rights. States may commit further violations by failing to monitor the degree to which the rights established under the [CESCR] are enjoyed or neglecting to adopt clearly defined programs toward their implementation. Additional violations through acts of omission include failure to prevent discrimination, failure to intervene in social or other situations manifestly inconsistent with legal obligations, failure to undertake all necessary and reasonable measures to protect individuals against potential or real harm by other individuals, and general state failures to implement positive obligations. n41

A 1993 resolution of the United Nations Commission on Human Rights urged member States "to consider identifying specific national benchmarks designed to give effect to the minimum core obligation to ensure the satisfaction of minimum essential levels of each of the [economic, social, and cultural] rights." n42

The State is not the only potential violator of economic, social, and cultural rights. Other entities are capable of injuring the enjoyment of such rights. Third parties may possess fewer obligations than States, but they are accountable to States who have jurisdiction over them and are not immune from duties afforded to both individuals and groups under international human rights law. States are obliged "to ensure compliance with international obligations by private persons and [have] an obligation to prevent violations by them." n43 For example, an Inter-American Court of Human Rights case held that States are obliged not only to prevent, investigate, and punish any human rights violation carried out by acts of public authority, but they must also show the same diligence with respect to acts of private persons, n44 which would include legal persons. This was recently reaffirmed with respect to the violation of economic, social, and cultural rights by the United Nations Special Rapporteur on Impunity for Human Rights Violations, who stressed in 1996 that private individuals can perpetrate violations of such rights. n45 Leckie suggests that this [*70] imposes obligations on States even with respect to transnational corporations and bodies like the World Bank, the IMF, the WTO, and perhaps even the United Nations Security Council (with respect to economic sanctions against Iraq, for example). n46 He acknowledges, however, that States' inclinations to address such abuses are weak, given the power of such entities in the international economy. n47

It is important to remember that foreign holders of IPRs that are recognized under domestic law are subject to a State party's jurisdiction. Thus, all 130 States that are party to the CESCR have international human rights obligations to ensure that the IPRs recognized in their jurisdictions are established, granted, exercised, enforced, licensed, and otherwise used in a fashion that does not infringe upon the human rights recognized in the two international Covenants. Moreover, States may have human rights obligations not simply with respect to acts of violation in their own territory of jurisdiction, but also in countries other than their own under international law principles. n48 So a State party like Canada might consider the behavior and activities of a Canadian pharmaceutical firm gathering crop genetic resources in biologically rich, but economically impoverished regions populated by indigenous peoples when determining whether to grant a patent in a biotechnical innovation derived therefrom. n49 As the next part of this Article will explain, this example is not a far-fetched hypothetical, but touches upon an emerging arena of conflicting rights in international law.

II. INTELLECTUAL PROPERTY AND CONFLICTED CULTURES

Fully meeting human rights reporting requirements may well be onerous. Even so, many State parties arguably have been less than vigilant in fulfilling these obligations. To take one simple but telling example, it would appear that States have failed even to address in their reports progress on the vexing issue of indigenous peoples' intellectual property and the difficulties faced by indigenous peoples in having their creative efforts, traditional knowledge, or [*71] expertise recognized and compensated for under existing intellectual property laws, and the dangers to indigenous peoples' cultural heritage posed by its appropriation and commodification in the intellectual properties asserted by others. Such negligence has occurred, moreover, in a context of growing international awareness of these issues. The United Nations Working Group on Indigenous Populations, for instance, has issued both a Draft Declaration making reference to indigenous intellectual property n50 as well as a separate report on the issue. n51

Declarations with respect to intellectual property were made and publicized at several international meetings of indigenous peoples. n52 One hundred thirty [*72] countries have also ratified the Convention on Biological Diversity n53 which mandates recognition of indigenous knowledge and the use of intellectual property protections in a manner congruent with that end. Finally, a large body of literature has been published that points to the inadequacies of intellectual property regimes for the protection of indigenous peoples. n54 Despite this wealth of activity and information, IPRs have yet to be fully addressed, incorporated, and integrated within the range of social, economic, and cultural rights recognized by CESCR State parties.

There may well be fundamental conflicts among the goals espoused under the rubric of cultural rights, when viewed through the prism of intellectual property protections. People's assertions of rights to protection of their cultural heritage and to a healthy environment may well conflict with others' assertions of rights to engage in and benefit from progress in science and technology. n55 We are reminded of:

The necessity for States to have a science policy which encourages development of science in ways which are beneficial, not counter-productive, to the general welfare. . . . The Committee on Economic, Social and Cultural Rights therefore call[s], in its guidelines, on States to not only report on measures to promote the diffusion of information on scientific progress, but to also report on measures adopted to prevent the use of scientific and technical progress for purposes which are contrary to the enjoyment of all human rights, including the rights to life, health, personal freedom, privacy and the like. n56

There is a central ambiguity in the use of the term "culture" in the international human rights arena, and this ambiguity is at the heart of many [*73] debates about the scope and propriety of IPRs. There appear to be three dominant views of culture operating internationally, all suggesting very different State obligations with respect to IPRs. One common view identifies culture with the *accumulated material heritage of humankind* as a whole, or of particular human groups, including monuments and artifacts. "According to this position, the right to culture would mean the equal rights of individuals to have access to this accumulated cultural capital. An extension of this view is the right to cultural development." n57

A second understanding of culture sees it as a process of artistic and scientific creation; this is congruent with the first view in that the creative activities of individuals are processes which produce the accumulated cultural capital of a society.

Within this perspective, the right to culture, of course, means the right of individuals to freely create their

cultural "*oeuvres*", with no restrictions, and the right of all persons to enjoy free access to these creations (for example, museums, concerts, and libraries). Cultural policies are therefore directed to further the position of the individual cultural creator in society (the artist, the writer, the performer), and the right to the free cultural expression of these creators has become one of the most cherished human rights in contemporary times. n58

A third view, which is more anthropological, sees culture as the material and spiritual activities, products, meanings, and values of a given social group that distinguish it from other groups. n59 This understanding forms what is now [*74] known as the right of cultural identity n60 and arguably underlies rights of cultural property. n61 This is not primarily a right of individual enjoyment (although it is conferred upon individual members of minority groups), but rather is a right to collectivity. It "can only be enjoyed in community with others and that community must have the possibility to preserve, protect and develop what it has in common." n62 As J. H. Burgers suggests, such rights pertain to those who belong to specific cultures, engage in collective action, share common values, and perpetuate these values as members of the group. n63

These meanings of culture are clearly in a tenuous relationship. If culture is viewed as the sum total of a society's cultural capital, then "cultural development" may mean "more culture" in the sense of encouraging more creative activity, more cultural products, and thus more intellectual properties (literary, artistic, musical, and cinematographic works as well as technological innovations). However, if the right to culture is understood as the right to "one's own culture" then cultural development may have a different meaning. n64 Under the third understanding of culture, the right of a group to maintain its cultural integrity might take precedence over the rights of cultural creators in the wider society, and the group might choose to restrict access to and use of elements of its cultural heritage in the expressive and scientific works of others if doing so was deemed necessary to preserve the group's identity. Certain exercises of these cultural rights and rights to cultural identity, however, might also be seen to restrict improperly freedom of expression and the free flow of information in the larger society and thus to violate significant political and civil rights.

Global institutional divisions of labor reiterate and mirror these conflicting [*75] understandings of culture and their lack of reconciliation. Institutionally, what we might deem "the field of culture" is divided between UNESCO, whose approach to culture stresses its collective attributes, and the World Intellectual Property Organization (WIPO), which has historically put emphasis on individual creation and public diffusion. For example, one of UNESCO's primary concerns is international cooperation in the preservation of the cultural heritage of mankind. UNESCO asserted the right to develop a culture and proclaimed a "right to cultural identity" at the World Conference on Cultural Policies in 1982. n65 The protection and promotion of the cultural rights of persons belonging to minorities is also within UNESCO's field of authority. n66 With respect to science, technology, arts, and knowledge, UNESCO emphasizes sharing and cooperation:

The UNESCO Recommendation on the Status of Scientific Researchers, adopted in 1974, underlines that each member State should strive to use scientific and technological knowledge for the enhancement of the cultural and natural well-being of its citizens and to further the ideals and objectives of the United Nations. Member States should actively promote the interplay of ideas and information among scientific researchers throughout the world, which is vital to the healthy development of science and technology. . . .

This has several implications. One of them is the freedom to be enjoyed by everyone to maintain cultural contacts across borders, to import and to advocate cultural products, ideas and visions from other

cultures; another is to cooperate in cultural activities with persons living in other cultural setting[s]; a third is to achieve international cooperation in protecting the moral [*76] and material benefits from any scientific, literary or artistic production of which the beneficiary is the author; yet another is international cooperation in protecting the cultural heritage of mankind. n67

Cooperation in the protection of moral and material benefits for the author across borders is primarily the responsibility of the Geneva-based WIPO. WIPO promotes protection of intellectual property and supervises the administrative cooperation between the Paris, Berne, and other international unions concerning trademarks, patents, and the protection of artistic and literary work. WIPO, however, has not historically been sympathetic to the concerns of minorities and indigenous peoples. Indeed, less than a decade ago, the Director General of WIPO informed the United Nations Human Rights Centre that it did not recognize the standing of indigenous peoples in intellectual property matters; a 1991 letter insisted that "intellectual property is distinguished by the type of intellectual creation and not by the groups responsible for its creation. This position reflects WIPO's insistence on individual authorship as a prerequisite for protection." n68

Although potentially impossible to ascertain and verify, it may be hypothesized that this traditional international division of labor between UNESCO and WIPO historically accounts for the failure to consider measures necessary to balance rights to individual intellectual properties, rights to public diffusion, and rights to the preservation of cultural identity. For example, to the extent that patent rights may encourage secrecy rather than sharing of technology (in the early stages of technological development so as to avoid patent preemption), and collectively-held knowledge that may be constitutive of cultural identity is freely appropriable, to the detriment of collective cultural heritage, in individual authorship of works of intellectual property, the discrete mandates of the two bodies may have foreclosed necessary reevaluations of the scope of cultural and intellectual property rights.

[*77] III. INDIGENOUS KNOWLEDGE: THE PROPERTIES OF CULTURE

Recent debates about the extension of intellectual property protections to include forms of indigenous knowledge as a means of preserving biological and cultural diversity suggest that different perspectives on the nature of culture tend to lead to the adoption of diverging positions on the viability of further extending intellectual property protections for these purposes. Even the initial premise that there are bounded domains that can be identified as discrete fields of indigenous knowledge presupposes an understanding of culture as systemic, territorially bounded, and distinctive. As Stephen Brush suggests, a broad definition of indigenous knowledge would encompass all folk or popular knowledge (as distinguished from formal, documented, or specialized knowledge) that is preserved in oral traditions and local practices. n69 A narrower and more acceptable definition, he suggests, does not include all informal knowledge, but only the knowledge systems of indigenous peoples and minority cultures. n70 A narrower, but still imprecise definition is provided by Canadian legal consultant, Howard Mann:

Indigenous knowledge [IK] as a concept concerns information, understanding, and knowledge that reflects symbiotic relationships between individuals, communities, generations, the physical environment, and other living creatures, and the spiritual relationships of a people. IK evolves as ecosystems and other factors change, but remains grounded in the more enduring aspects of identity, culture, generations and spirituality. n71

There is no doubt that oppositions between dominant and indigenous cultures are often over-simplified,

blurring the actual fluidity and permeability of knowledge and cultural boundaries. Just as dominant cultures appropriate knowledge from indigenous ones, indigenous knowledge itself contains knowledge shared between cultures, as well as information brought by colonists, [*78] settlers, and traders. One cannot counterpose absolutely global scientific knowledge with local indigenous knowledge--people everywhere have access to both and use them in conjunction. n72 Although contemporary social science acknowledges the reality of the exchange of information between cultures and the cultural hybridity of most innovation, the law and legal activists have a tendency to "reify knowledge systems and set artificial boundaries around culture where none exist in everyday life." n73

In social contexts of inequality, the idea of cultural boundaries makes it easier to locate, identify, and decry especially egregious forms of expropriation. Nonetheless, to the extent that cultural boundaries may become rigid and impermeable by virtue of their legal recognition, the movement of ideas may be thus imperiled, eventually threatening prospects for cultural evolution. Indeed, some commentators on the movement toward protecting indigenous people's cultures through claims of intellectual property have warned that such developments threaten more fundamental human rights such as freedom of speech, freedom to share information, and the need for access to a vital public domain, all of which are necessary freedoms in democratic societies. n74 Indeed, many North American intellectual property scholars have decried the reckless expansion of IPRs in Western societies to the detriment of the public interest and democratic values. n75 Critics of proposals to extend IPRs to indigenous peoples argue that this augers further in the same undesirable direction. n76 Such [*79] concerns may exaggerate and overestimate the claims that indigenous peoples are themselves making.

As many of the leading experts in the field have noted, when indigenous peoples engage the issue of intellectual property, they "tend to employ the political discourse of human rights: rights to land, territory, and resources; rights to full disclosure and prior informed consent; rights to cultural integrity and customary practices; and rights to equitable benefit-sharing and control over access to traditional resources." n77 The issue of intellectual property has, for many indigenous peoples, been an effective rhetorical vehicle to keep issues of autonomy and self-determination on the global bargaining table. Increasingly, however, IPRs appear to many indigenous peoples to be an obstacle rather than an aid to the integrity of their cultures and political aspirations. For example, in the United Nations Development Programme Consultations on the Protection and Conservation of Indigenous Knowledge in Sabah in 1995, some "Basic points of agreement on the issues faced by the indigenous peoples of Asia" were drafted. n78 Asian indigenous peoples' deliberations put primary emphasis on self-determination and asserted:

The indigenous peoples' struggle for self-determination is a very strong counter-force to the intellectual property rights system vis-a-vis indigenous knowledge, wisdom, and culture. Therefore, the struggle for self-determination cannot be separated from the campaign against intellectual property rights systems, particularly their applications on life forms and indigenous knowledge. n79

In this document of agreement, IPRs are represented as "Western," threatening, and exploitative. They are described as "a new form of colonization" and "a tactic by the industrialized countries of the North to confuse and to divert the struggle of indigenous peoples from their rights to land and resources on, above, and under it." n80

It has been suggested that in communities not fully integrated into market economies, intellectual property is a concept that divides the intellectual from [*80] the material, texts from their contexts, and knowledge from social relationships--all of which are inappropriate separations in such areas:

The expression "intellectual property rights" makes it appear as if the property and the rights are products of individual minds. This is part of a Western epistemology that separates mind from body, subject from object, observer from observed and that accords priority, control, and power to the first half of the duality. The term "intellectual" connotes as well the knowledge side and suggests that context of use is unimportant. The knowledge for which intellectual property rights can be obtained is generalizable. Thus, while particular medicines and foodstuffs may have been developed for specific uses in one society, the category intellectual property rights suggests that they have more fundamental features which can be abstracted, written in technical form, and put to use anywhere. n81

Drawing examples from across Latin America, anthropologist Stephen Gudeman suggests that in a community economy (one that is only partially integrated into a market economy and governed by communal orientations toward sharing, reciprocity, and the maintenance of social solidarity) innovations are cultural in nature. They are products of the group that emerge from practices of trial and error to meet practical shared needs. n82 Holding a "commons" of land, material resources, knowledge, ancestors, animate and inanimate beings, and practices with respect thereto is what a community shares and is the source of its maintenance *as a community* (or a "culture"). This commons is built up of prior innovations and provides the means for developing new ones. IPRs, Gudeman asserts, are merely another dimension of the market forces that threaten further to erode and appropriate an already endangered commons. n83

The consideration of indigenous knowledge in an intellectual property context may be inappropriate to the extent that:

[*81] The expression "*intellectual property rights*," with its emphasis on mind, connotes abstraction, decontextualization, formalization, and the use of written information. Through the concept of intellectual property rights we deploy widely accepted Western assumptions. We assume that innovations as products or processes have a technical essence that can be identified; once distinguished, this core can be abstracted from the context of its use, converted to a written form, transported home and tested in a laboratory. The implication is that local knowledge, if it is valid local knowledge, can be restated within a scientific and general language that we possess. If local knowledge cannot be fitted to this discourse, it must be faulty. . . . The scientists draw a distinction between *res cogitans* (thinking being without spatial extension) and *res extensa* (material things as extended substance)--between the mental and the material, intellect and emotion, knowledge and context. n84

It is precisely the lack of such distinctions that defines most indigenous knowledge. To the extent that such knowledge is cultural, it is also contextual. This is not, however, to assume that all such knowledge has this quality, but to suggest that IPRs, to the extent that they are premised upon such conceptual distinctions, may not be the best means of protecting knowledge that has radically different principles of generation and practice. Knowledge that is dynamic and constantly changing is not protected by freezing it in written form. Moreover, innovation in such knowledge may depend upon sharing and the free flow of innovations within the community and between communities. In such instances, drawing the lines between common knowledge or public domain and private expression or innovation that are anticipated, enabled, and ensured by IPRs, will have a tendency to slow larger communal developments by affecting what the surrounding community can do with the new knowledge.

Community held rights might be an appropriate solution here, but as Gudeman recognizes:

Shifting innovation rights from individual to group does not fully solve the equity issue, for this presumes that communities [*82] are integral units, and in today's global world, bounded communities and cultures can hardly be found! Transmission of cultural information across social borders is not new--it has been a species practice since earliest times--but the rate and scale of diffusion have quickened; the borders of old communities have begun to dissolve, while new types of communities are developing. n85

People travel between communities, taking knowledge with them and incorporating it into local knowledges (or cultural frames of reference) which are then transplanted to new contexts. This fluidity of knowledges across porous borders of complexly layered communities makes IPRs difficult to delineate and to control. However, such objections may be overstated; fair use exemptions for noncommercial uses or those which do not involve mass reproduction of articles for commerce could be incorporated into any new or revised legal regime to ensure that ordinary forms of knowledge transmission are not seen as forms of infringement. Any new regime of rights will have to be accompanied by a related set of exemptions that are relevant to the different forms of knowledge to be protected and their likely uses, if it is to be congruent with human rights principles.

IV. THE CULTURAL VALUE OF PLANTS

If cultural transplants are common, it is nonetheless the case that some potentially transportable plants are more firmly rooted in local realms of meaning and value. The protection to be accorded to plants of asserted cultural significance is another area in which cultural rights, IPRs, and civil and political rights are likely to come into tension. Some indigenous activists have suggested that folk varieties n86 be considered part of the cultural heritage of local communities and thus considered neither common heritage resources nor national patrimony. This would make them akin to a kind of folklore. [*83] Unfortunately, few countries have to date passed folklore legislation. Many indigenous peoples, moreover, do not want such folklore to be managed by the State, as is currently anticipated in international legal frameworks for the protection of folklore. The proposed Model Provisions for National Laws on the Protection of Expressions of Folklore recognizes the legal rights of communities in forms of folklore, which are defined as "traditional manifestations of the culture which are the expression of their national identity." n87 It has been proposed that some folk varieties could be protected under this law, and it is suggested that indigenous crop varieties be nominated "folk varieties" rather than land races or traditional varieties for this reason. n88 In 1989, UNESCO adopted a recommendation that the model law become an internationally binding convention, but it has yet to receive worldwide attention. WIPO promises to attend to folklore in the near future, and the protection of crop varieties is then likely to be addressed. Certainly many indigenous declarations suggest that traditional plants and plant knowledge are viewed as subject to the cultural rights asserted by indigenous peoples. The inclusion of plant varieties in protected domains of folklore will only have legitimacy, however, if indigenous peoples themselves are centrally involved in defining those crop genetic resources that are central to cultural identity. The United Nations Draft Declaration on the Rights of Indigenous Peoples n89 also includes rights to seeds, genetic resources, and knowledge of the properties of fauna and flora, although the likelihood of this Draft Declaration being internationally adopted looks ever more remote.

Although none of the above efforts to have plant varieties or crop genetic resources recognized as forms of indigenous intellectual or cultural property are guaranteed to be successful, from a human rights perspective, provisions should be made in both patent and plant breeders' rights regimes to anticipate such outcomes. For example, as particular crop varieties become asserted or identified as central to indigenous cultural identity, it might be possible to put a moratorium on patent and plant breeders' rights

applications that use or draw upon such resources until the cultural status of such resources is determined.

One difficult question arises when such resources are derived from public collections rather than from local communities. Will indigenous peoples have [*84] any rights over germplasm stored in seedbanks or other *ex situ* databanks? As many experts have cautioned, many samples from medicinal plants identified through traditional knowledge are now in the public domain:

Even in instances in which stocks of the natural source material are required for commercial production, the source is more likely to be an *ex situ* plantation than the original habitat. Thus, indigenous genetic resources are nonrival goods; one person's possession of a breeding stock or a chemical "blueprint" does not necessarily preclude another's. n90

Absent a legal right to prohibit reproduction, of course, this is true of all products of intellectual effort; this is precisely why IPRs are commonly understood to be necessary incentives to invest in the creation and dissemination of such works. The fact that many works of genetic resource development have been taken out of their locations of original authorship or invention should no more disentitle their authors from exercising IPRs than does the international circulation of protected art, literature, and technological innovation.

More difficult questions are posed by the numerous varieties of traditional and hybrid crops that are drawn upon in contemporary crop breeding. Two issues will require consideration. The first arises from the likelihood that in the development of a commercially viable hybridization, the contribution from any single folk variety will be difficult to discern. n91 This seems, however, to pose primarily evidentiary challenges relevant to valuation and accounting which are hardly unique to this situation; it would not seem to be a significant objection to the validity of recognizing the right in the first instance. A second issue poses more fundamental challenges. To the extent that any singular traditional crop variety may be located in several localities, across a number of different societies, arguments based upon the cultural significance of a variety may seem less persuasive. No doubt, as the controversy over *ayahuasca* in the Amazonian region indicates, one folk variety may have cultural significance that is regionally shared among a number of indigenous groups. This poses fewer problems than the potential situation in which a folk variety found in a number [*85] of different locations has cultural significance in some, but not all of the areas in which it is known and cultivated. To the extent that the organism and its properties are available to commercial developers in both sites, will the group for whom the plant has cultural significance have any claim to control its use if the genetic resources are extracted from specimens gathered outside of its own habitat? If a number of groups have engaged in similar efforts to nurture and develop similar genetic properties in a particular variety, should the group for whom the variety has cultural or religious significance be enabled, as a human right, to preclude or control the commercialization of such genetic resources by others for whom the plant and its qualities have no such values? In such circumstances, it is clearly evident that rights of religion and cultural identity may come into conflict with the rights of others to subsistence, livelihood, and to benefit from progress in the arts and sciences.

In the contemporary context of widespread claims of "biopiracy," it is important to keep in mind that few, if any, grants of patents in biotechnological innovations drawing upon landraces, preclude indigenous peoples from continuing to use folk varieties or otherwise interfere with such usages. Even the most expansive patents, like the Agrcetus cotton patent, which asserted exclusive rights over all genetically engineered cotton regardless of the method used, do not deny farmers the rights to use traditional

varieties. Such patents are widely condemned because they threaten to stifle innovation and block exchange of information, but:

The typical claim of indigenous "intellectual property" relating to folk varieties seeks even more expansive monopoly control. A plant breeder's right gives the breeder limited rights to control the use of a distinct variety for a limited period of time; at the end of that time, all others are completely free to use the variety. At no time does the community or the country in which the variety was developed have any proprietary rights. Similarly, a patent gives the inventor an exclusive right to use a specific invention for a limited time. . . . This innovation continues to enrich the lives of billions of people and serves as a basis for continuing incremental innovations. . . . In contrast, a number of advocates of "farmers' rights" hold that communities in which useful folk varieties or indigenous knowledge have originated should maintain the exclusive right to control their use in perpetuity, whether they [*86] were developed 10 years ago or 1,000. They do not explain why such a community should be entitled to a special right not available to others whose inventive predecessors gave the world comparable benefits. Because it is difficult to establish a moral basis for such a distinction, the human rights-based rationales for indigenous intellectual property rights are unlikely to succeed. n92

Recall that human rights are indivisible. Even if rights to genetic resources and indigenous knowledge may in some instances be considered integral to cultural identity, and thus as cultural rights recognized in international human rights law, these cultural rights must still be reconciled with others, such as the rights of all to share in progress in the arts and sciences, and the rights to have information shared as well as to have compensation for the fruits of one's labor. What if it could be demonstrated empirically that the introduction of biotechnologically engineered and patented seeds into a particular region created a threat to biodiversity such that traditional subsistence livelihoods and cultural identities were endangered? n93 Should the recognition of IPRs give way to rights to subsistence and rights of cultural integrity? What precisely would this entail? No assertion of a human right that fails to consider the range of human rights into which such a right must be accommodated is tenable. Nonetheless, we cannot merely ignore the challenge of formulating norms, standards, and mechanisms to govern the interaction between our intellectual property regimes, folklore regimes, and human rights commitments.

One dilemma that would seem to require coordination at the international level between those charged with administering the collective and individual manifestations of culture involves the granting of recognition to indigenous plant breeders. One of the biggest drawbacks of both patents and plant variety protection, in terms of protecting indigenous knowledge, is the inability of these legal regimes to accommodate evolving lines. The intellectual property protections, used to reward people with relation to plant resources, define "innovations as tangible changes in plant genetics or management which were [*87] developed by an individual or corporation over a known period of time." n94 Such rights preclude consideration of collectively managed, long-evolving genotypic shifts in plant resources or incremental advances in management information about them. More seriously for indigenous cultivators, such rights restrict and inhibit the sharing of information, which is the very essence of ethnobotanical knowledge. The problem arises when considering:

Enhancements that have occurred largely as a result of cooperative exchanges and the elaboration of plant-specific information over generations. While cases of forced or clandestine transfer of plant germplasm . . . have been widely reported, it is less remembered that tribes such as the Havasupai and Hopi regularly and freely exchanged seeds when one or more of their communities had their fields devastated by floods. To intervene today to protect a "snapshot" of existing knowledge and evolving seed

heritages as one tribe's cultural legacy alone belies this incremental and serendipitous evolutionary process. n95

The ironies here are apparent. By granting monopoly rights to an arbitrary author, the informally shared heritage of such information is not acknowledged and the common benefits from its exploitation are lost. Yet, if this collective heritage were to be acknowledged, such ethnobotanical knowledge might be legally considered as part of the public domain and thus open to the genetic manipulations and intellectual property assertions of corporate others without compensation to the communities of its origin. n96

If human rights were to be recognized as truly interdependent and indivisible, then IPRs would also have to be compatible with the rights enshrined in the CCPR. Civil and political rights may, in many circumstances, come into conflict with the exercise of IPRs. The "right[s] to freedom of thought, conscience and religion" are among the civil rights recognized in both Article 18 of the UDHR and Article 18 of the CCPR. For indigenous peoples, religious freedom may have a more expansive meaning than those more familiar [*88] with monotheistic religions may realize. As anthropologist Darrell Posey recalls:

At a seminar on IPR at the United Nations Human Rights Convention in Vienna, June 1993, Ray Apoaka of the North American Indian Congress suggested that IPR are a matter of religious freedom for indigenous peoples. "Much of what they want to commercialize is sacred to us. We see intellectual property as part of our culture. It cannot be separated into categories as [Western] lawyers would want." Pauline Tangiora, a Maori leader, agrees: "Indigenous Peoples do not limit their religion to buildings, but rather see the sacred in all life." n97

One recent controversy over the registration in the United States of a patent for the processing and commercialization of *Ayahuasca*, a plant with sacred significance for many indigenous peoples in the Amazon, illustrates the problem. The Coordinating Secretariat of Organizations of Indigenous Peoples from the Amazon (COICA) resolved in its Fifth Congress in Georgetown in 1997 to condemn the issuance of a patent to Loren Miller, owner of the International Plant Medicine Corporation, a pharmaceutical laboratory with headquarters in the United States. The resolution was adopted by eighty delegates representing 400 groups of indigenous peoples from nine Amazonian countries and was greeted by protests from the Inter-American Foundation, who demanded its retraction. In March 1998, COICA responded to this request in no uncertain terms:

The Amazonian indigenous peoples condemn the actions of Mr. Miller. We have assumed a sovereign decision as peoples, as would any other society of the world, that had suffered the lack of respect for their culture, their customs, their sacred symbols. . . . As indigenous peoples we do not oppose the development nor the research to discover new alternatives for the survival of humanity, but we do want this respect. n98

[*89] Pointing to a large bibliography of literature that affirms the sacred character of the plant to Amazonian peoples to substantiate their assertion of the plant's spiritual significance, COICA emphasized the magnitude of the offense to indigenous peoples for a single person to purport to appropriate, assert proprietary rights in, and derive monetary benefit from such a sacred symbol. The "new variety" that Miller purports to have "discovered" is, according to COICA, "a variety of banisteriopsis domesticated by our peoples hundreds of years ago." n99 There is no evidence that Miller received permission from the Equadorian government, nor that the sample was removed with the prior informed consent of the indigenous peoples from whose smallholdings it was taken. Do rights to practice one's religion include

rights to prevent the commodification by others of things which adherents to that religion hold sacred? As a human rights issue, this remains to be resolved, but it is an area of likely future tension as the "cultural rights" of some intellectual property holders come up against the civil and political rights to religion and cultural identity asserted by others. Such a dilemma also points to the multiple places in which sovereignty is located and claimed in disputes over culture and intellectual property.

V. THE LIMITS OF SOVEREIGNTY

Consideration of the use of IPRs to advance the objectives of the Convention on Biological Diversity (CBD) graphically illustrates the problematic centrality of State sovereignty in the international human rights arena. The Convention on Biological Diversity was completed in 1992 and entered into force in 1993. n100 The CBD is an example of the recognition that environmental issues are global in scope and implication. It represents the latest in a continual pattern of erosion of the domain of domestic jurisdiction in matters pertaining to the environment. The CBD addresses the conservation and sustainable use of nature based on the concept of biological diversity--often described as "the total variety of genetic strains, species, and ecosystems." n101 In the Convention it is defined as "the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other [*90] aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and ecosystems." n102 This broad definition includes diversity in both natural and human habitats and encompasses variety within domesticated species as well as wild ones.

The CBD provides an opportunity to break the obvious nexus between biodiversity and poverty. Recognizing that we cannot expect to conserve biodiversity by keeping people poor, it is also clear that "historically biodiversity survived only under such conditions." n103 Only by providing livelihood prospects with respect to the conservation of biodiversity can we expect the stewardship of the environment to survive. To the extent that the CBD attends to subsistence rights and rights to benefit from innovation as well as rights to maintain and develop cultural heritage, it is congruent with a variety of established human rights norms. The CBD evolves naturally out of prior developments, consolidating and affirming existing principles of human rights protection pertaining to the environment, cultural integrity, and resource rights. Indeed, the CBD's provisions "help to affirm indigenous peoples' moral and political claims to lands, natural resources, and knowledge." n104

An international human rights perspective on the protection of indigenous knowledge through IPRs would presuppose that State governments not only have obligations to indigenous peoples subject to their own jurisdictions, but also that these obligations involve respect for and protection of the indigenous knowledge of indigenous peoples (including forest dwellers and marginalized tribal groups) globally. Hence, any use of IPRs as mechanisms to address the protection of indigenous knowledge and biodiversity must be attentive to the consequences of such protection for peoples in other regions of the world. State parties to the CBD must attend to the protection and conservation of biodiversity outside of the State's jurisdiction to the extent that this may be integrally related to the cultural integrity, environmental protection, and property rights of indigenous peoples across the globe.

Given that most States' intellectual property laws protect the rights of foreign holders of IPRs pursuant to international conventions and prevailing [*91] trade agreements, these rights-holders are subject to these State parties' jurisdiction. International human rights law obliges State governments to ensure that such rights are exercised in a manner that does not entail violations of human rights. Full recognition of the human rights implications of the use of IPRs to protect and compensate indigenous knowledge to the end of protecting biological diversity must therefore involve more than the addition of new protections under existing domestic intellectual property regimes. It may compel a more thorough reevaluation of the

protections granted to conventional rights-holders, an examination of the research and development conditions that gave rise to the works for which IPRs are claimed, and denials of or restrictions upon such rights when research and development conditions appear to conflict with human rights obligations and where the enforcement of such IPRs violates or threatens to violate human rights. Although it is beyond the scope of this Article, such a reevaluation must also be congruent with a State's obligations pursuant to the TRIPS Agreement. The difficulties of reconciling obligations under the CBD and under TRIPS do not appear to be insignificant. In the first instance, it has been suggested that:

With respect to traditional knowledge and informal innovation practices of indigenous peoples and local communities, the Committee on Trade and Environment (CTE) states that new forms of protection adapted to the particular circumstances of local and indigenous communities do not fall within the purview of TRIPS since they were not discussed during the negotiations. n105

This assessment, however, only affects new and additional forms of IPRs. It does not address the more fundamental conflicts likely to arise between existing IPRs and indigenous peoples' claims. Many scholars nonetheless believe that TRIPS has so completely limited the capacities of member States to adjust IPRs to meet social policy objectives that any attempt to use IPRs to meet the goals espoused by the CBD is effectively foreclosed. Regardless of the CBD text, they argue, its provisions that deal with IPRs are subject to TRIPS stipulations that are so restrictive that indigenous peoples' rights cannot actually [*92] be addressed. n106

The CBD embraces the idea that traditional indigenous techniques and knowledge are essential to the preservation of biodiversity and sustainable development. The Convention directs the signatories to find means to "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles." n107 The recognition of indigenous peoples' knowledge and its role in the conservation and sustainable use of biological resources corresponds to the complementary recognition that the preservation of biodiversity and the preservation of cultural diversity are integrally related. n108 As Anuradha puts it, "the juxtaposition of biological diversity and cultural diversity among local communities is not a coincidence: the latter has arisen as a human adaptation to the former and has in turn nurtured it." n109

The area of indigenous knowledge relevant to the CBD is the indigenous knowledge "relating to the quality and condition of the environment and the use or conservation of biodiversity." n110 IPRs were early and enthusiastically embraced, at least by Western scholars and activists, as a solution to the problem of biodiversity preservation, indigenous cultural integrity, and global needs for genetic resources necessary for biotechnology. n111 The proposal that indigenous knowledge be treated as a form of intellectual property was seen to provide an incentive to indigenous peoples to maintain environmental stewardship and to increase their economic return from so doing. This had the evident merits of promoting both cultural survival and biological conservation. The theory was that both stewards and users tend to underinvest in conservation activities when biological resources are public goods and that turning public goods such as indigenous knowledge and biological resources into private [*93] properties would enable tribal herbalists, shamans, peasant farmers, and governments to profit from indigenous knowledge and conservation activities. Because intellectual property rights were conventionally accepted means to encourage the creation and sharing of intellectual goods, they seemed like an ideal vehicle to link biological resources with cultural knowledge for larger public purposes. However, as Stephen Brush explains:

Conserving culture and language is fundamentally different and more problematic than conserving

biological resources. While indigenous peoples, their advocates, and social scientists are acutely aware of the loss of cultural and linguistic diversity, there is no political consensus on how to address this problem or how to conserve cultural knowledge. The dynamics of political and social systems make it far more difficult to design programs of cultural conservation than to lay out biological preserves or to create botanical gardens, zoos, or seed banks. Nevertheless, the value of cultural diversity and its relevance to conserving biological resources warrant an effort to address the loss of cultural knowledge. Cultural knowledge cannot adequately be conserved by setting it aside in a museum, or by recording it on paper or electronically. Like biological diversity, cultural knowledge can only be conserved by keeping it alive and in use. Intellectual property possibly opens a way to harness market forces to this objective. n112

Here, again, the incentive arguments seems strong. If traditional knowledge disappears as people leave ancestral ways of life, and as more and more rural and indigenous peoples are drawn into modern capitalist economies:

Cultural motivations for maintaining traditional knowledge disappear. Furthermore, preservation of traditional knowledge often involves substantial costs, such as the time necessary to study methods and techniques and to teach them to subsequent generations. . . . Knowledge holders will have little incentive to maintain traditional knowledge if they cannot internalize the [*94] resulting benefits, even though the overall societal benefits may exceed the cost of maintaining the knowledge. Few young people in areas of rich genetic diversity study biological information under shamans and healers, which suggests that development of a property rights regime is essential to the preservation of traditional biocultural knowledge. n113

In many parts of the world, incentives will be necessary, not only to conserve disappearing knowledge, "but also the institutions of its reproduction and intergenerational transfer." n114

More recent academic commentaries, statements by NGOs, and declarations of groups representative of indigenous peoples have, as we have seen, been far less sanguine about the prospects for an intellectual property-based solution to biodiversity preservation and compensation due for indigenous resources and knowledge. Formidable political obstacles and legal barriers face indigenous peoples who might attempt to use IPRs to have indigenous knowledge recognized, compensated, and protected. Fundamental aspects of the global political economy would appear to preclude the viability of using IPRs as a means of redressing biodiversity loss or assisting conservation efforts:

Economic poverty, exploitation, and biological degradation coexist in areas with the greatest stores of domestica ted and wild biological diversity. Indeed, these human and biological conditions are intimately related to one another. Conservation of biological resources in centers of crop origins and in tropical forests is in the public interest of people everywhere. . . . Effective conservation cannot be planned or accomplished without addressing the issues of poverty, domination, and exploitation. . . . The allure of simple explanations for poverty and degradation, such as economic exploitation, and simple solutions for conservation, such as privatizing resources, is understandable in this climate of urgency. . . .

Unfortunately, the complex problems of poverty and environmental [*95] degradation won't disappear with the creation of a new system of property that brings peasants and tribal peoples into greater contact with and dependence on industrial nation States. On the other hand, wealthy societies which depend on the ultimate source of biological diversity--in farmer's fields, prairies, and tropical forests--must accept the burden of making conservation an acceptable alternative. Turning public goods into private property is now heavily promoted for conservation purposes. Unfortunately, this is also a high-risk method for societies and cultures that have long been subordinated. Privatization of biological resources could result in greater poverty and exploitation without achieving conservation or equity. n115

As Michael Dove notes, the premises behind extending IPRs to indigenous communities overlook significant local political realities. For example, the assumption that transnational corporations or more developed countries are unfairly exploiting local communities is exaggerated in comparison to the exploitation by the political-economic elites of less developed countries who are far more likely to be engaged in commercial extraction resulting in the resource degradation that impoverishes local communities. n116 For instance, logging concessions will have an enormous impact on biodiversity conservation as indigenous peoples are engaged in protracted struggles to assert land claims to traditional subsistence and farming areas against corporate interests who are encroaching on these lands. National governments justify the concessions on the basis of benefits to the national economy, but such benefits do not make their way to local communities. Indeed, in many such contexts, local tribesmen themselves must begin to fell the primary forest and cultivate it in order to strengthen their future legal claims against the concessionaires. n117 In situations where basic property rights in lands are still in dispute, the offer of intellectual property rights appears rather premature, if not beside the point. To the extent that *real* property rights are often premised upon precisely the kind of activities that destroy biodiversity (intensive rather than swidden agriculture, cash [*96] cropping rather than subsistence farming), and peoples in these areas are subject to government and elite pressure to provide immediate foreign exchange in the struggle against national debt, the long-term benefits of IPRs seem incredibly remote. Such regions are seen as "commons" in many countries, not as homes to tribal peoples and ecosystems. By focusing primarily upon inequities in North-South transfers of genetic biological resources, proponents of IPRs have failed to recognize inequities at the national level and exploitation of resources across less developed countries by transnationally connected Southern elites. Proposals for *in situ* conservation which do not look for solutions beyond local communities and recognize the political context in which these peoples struggle will inevitably fail. By continuing to locate sovereignty exclusively at either the nation-state or the possessive individual level, we reinforce and perpetuate these political economic tensions.

[Anthropologist] Posey calculated that "less than 0.001 percent of the profits from drugs that originated from traditional medicines have ever gone to the indigenous peoples who led researchers to them." What we also need to know, and are not told by Posey, is what percentage of these profits have gone--or might go under proposed uses of intellectual property rights--not to these indigenous people but to the political-economic elites of their countries. We can get some idea of this percentage by looking at the case of timber. The percentage of profits from tropical forest logging that goes to the indigenous inhabitants of these forests is likely similar to Posey's figure in order of magnitude (and yet the extraction of timber entails far greater costs for these inhabitants, by degrading their ecosystem and thus the basis for their subsistence, than does the extraction of biogenetic resources). n118

As many commentators have noted, the link between biodiversity and poverty in many areas of the world creates political conditions that make it difficult to ensure that benefits will flow to local communities or to those whose knowledge and activities are most responsible for those benefits. These are areas that often have very poor public infrastructure, weak private market forces, where local [*97] people are nationally recognized as "unskilled labor" whose flight to urban areas is nationally encouraged. The prices of goods these people produce, particularly crops, are especially susceptible to market fluctuations, and as a result huge variations in income exist. Households often run deficits and therefore depend upon others, including the informal sector and money lenders and traders. n119 This dependence is often related to political exploitation. It is common to resort to resource-degrading strategies of commercial extraction or abandoning farming for wage labor under such pressures simply to meet livelihood requirements, repay debt, and to secure even minimal access to the limited forms of available social

security. All of these responses to economic marginalization tend to further erode both biodiversity and the knowledge that sustains it.

As Michael Dove explains, the need for conservation is greatest in areas of the world which have the least developed and least accountable political infrastructures; these are the regions in which pharmaceutical and agrochemical companies are also least likely to invest. n120 Costa Rica's success in promoting the capitalization of its genetic resources, he suggests, has as much to do with its stable political institutions as it does to the value of the resources themselves. n121 Its comparative advantage, in short, may well be its political structures. Even in Costa Rica, however, little of the compensation has been invested in conservation, and none of it appears to have benefitted indigenous communities.

Structural impediments limit the flow of resources to many indigenous communities in less developed countries. The resource flow into these communities is not nearly as efficient as the resource flow out of them. n122 Compensation made to national governments is unlikely to reach indigenous communities. Many centralized States and their elites, particularly in Southeast Asia, are dependent upon keeping peripheral communities marginalized as sites for the expropriation of resources. Local and indigenous communities are nationally seen as outcast ethnic minorities and stigmatized for their [*98] backwardness. n123 In many areas of high biodiversity and attendant local knowledge, national elites have a poor record of making the machinery of government available to communities, which makes it inadvisable to route compensation of national or international funds through the State machinery. Too often, when a resource at the periphery acquires value, elites at the center of society assume control over it, and in the process, indigenous peoples are further marginalized, putting more pressure on them to abandon the sites of biodiversity and practices of knowledge-generation.

Dove cautions that political-economic elites of less-developed countries may support IPRs because they represent a unique opportunity for North-South wealth transfer:

It represents an opportunity not to conserve resources but to appropriate as much as possible of any value realized from these resources by foreigners. (Failure to distinguish between these highly disparate goals is a key misunderstanding of the debate over intellectual property rights.) This does not alone explain the elite interest in intellectual property rights, however. Some interest stems from the role that intellectual property rights may play in broader North-South dialogues: they potentially provide elites in the less-developed countries with a way to rebut criticism by the more-developed countries of their countries' records on environmental degradation and human rights violations. By accusing the industrialized nations of extracting without compensation valuable resources from indigenous people in the less-developed countries, and by blaming this injustice for all subsequent resource degradation, the critique is effectively turned back on the critics. n124

Centers of greatest biodiversity are usually those least integrated into market economies, but this is not to say that indigenous peoples cannot themselves intensify market linkages if they have the political organization and autonomy to manage these ties for their own benefit. In other circumstances, [*99] it may be necessary to enlist NGOs to distribute compensation if it is to serve the desired ends. Indeed, the lack of identity of purpose between national agencies and indigenous peoples has been recognized in international development circles by those who see a greater overlap of interests between international environmental activists and international movements for local rights, both of which insist upon international oversight. This is a perspective that posits a basic division of interest between nation-states and international corporations on one side, and local communities, international environmentalists, and human rights activists on the other. n125 Only by improving the political position of indigenous peoples

will any extension of intellectual property (or *sui generis* regimes) have positive effects. Neither the sovereignty of the State, nor the sovereignty of the individual rights-holder will serve in these contexts to protect the interests of indigenous peoples. Indeed, recognition and respect for State sovereignty seems in many cases inimical to this goal.

From the perspective of international environmental obligations, the sharing of benefits realized from the use of resources and biocultural knowledge is the sole responsibility of the State in whose territory the community lives, and it is up to the State to ensure that benefits are secured when traditional knowledge is obtained. It has been noted that "implementing the environmental rights to public participation and information and establishing an informed-consent requirement could greatly assist in this effort." n126 The CBD has been criticized for not containing any explicit requirement for the consent or participation of indigenous peoples in access to resources or in the use of indigenous knowledge and technologies by others. n127

The CBD clearly recognizes the sovereign right of States to exploit their own resources pursuant to national policies. However, this unitary control over resources must be situated within the Convention as a whole (as well as other UNCED documents) which seek to narrow the prerogatives of sovereign States and the sovereignty of property owners "to ensure that biological resources sustainably serve the ecological and cultural interests of others who depend on [*100] them." n128

Although prior informed consent appears to be mandated with respect to the use of indigenous knowledge, it is less clear with respect to resources. Access to the resources themselves is subject to the "*prior informed consent of the State providing such resources, unless the State itself determines otherwise.*" n129 The provision therefore permits (although it does not require) the State to insist upon the prior informed consent of indigenous peoples when either indigenous knowledge or biological resources are used or accessed by others. An insistence upon prior informed consent is congruent with human rights to cultural integrity, privacy, property, and emerging rights to environmental protection. Prior informed consent is a concept that exists in international law. It is found, for example, in the 1989 Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal as well as in the CBD. The International Union for the Conservation of Nature's guide to the CBD describes prior informed consent as consent given by the genetic resource provider, based on information provided by the potential user, prior to such consent being granted. n130 Such a requirement gives the party the right not only to grant access, but also to demand information about the implications of access and how the genetic resources will be used.

Prior informed consent requirements have been included in collaborative research agreements, in developing codes of ethics, and in indigenous peoples' declarations. Indeed, in the United Nations Development Programme Regional Consultation on Indigenous Knowledge and Intellectual Property Rights held in Suva in 1995, the participants proposed, as part of their plan of action, to urge governments to "incorporate the concerns of indigenous peoples to protect their knowledge and resources by legislation by including 'Prior Informed Consent or No Informed Consent' (PICNIC) procedures." n131 The COICA/United Nations Development Programme Regional Meeting on Intellectual Property Rights and Biodiversity in Santa Cruz de la Sierra, Bolivia, in 1994, asserted that "there must be appropriate mechanisms for maintaining and ensuring rights of indigenous peoples to deny indiscriminate access to the resources of our communities or peoples and making it possible [*101] to contest patents or other exclusive rights to what is essentially indigenous." n132

There appear to be no obstacles preventing State parties to the CBD from implementing PICNIC requirements as a condition for any and all intellectual property protections (copyright, trademark, plant

breeders' rights, patents, and industrial designs, for example). n133 The possibilities of permitting indigenous peoples to contest the validity of patent rights *already* recognized in the jurisdictions of State parties to the CBD pose a more difficult problem. As a human rights matter, this might violate the civil and political right to property itself. In jurisdictions where property rights have been recognized as human rights, however, the right to property has been interpreted to give a wide birth to governments to determine whether measures that modify or regulate private property rights are in the general interest. These are generally permissible providing that there is evidence of government efforts to find a fair balance between public and private interests. n134 Challenges to existing patents held by foreign nationals, however, might nonetheless also be deemed as deprivations of property for which compensation is due. n135

It is important to note that although the CBD affirms each State's right to control access to its genetic resources, it also requires each party to take steps to facilitate access for other parties to its genetic resources, but only for "environmentally sound uses." n136 This may provide means to prevent access to resources for biotechnological developments that pose environmental risks. n137 To the extent that the risks posed by the creation of radically new organisms are unknown, indigenous communities with moral, spiritual, or other objections to lifeform patenting might be able to use the environmental risk provisions to preclude access to resources in local communities that are to be used for such purposes.

Article 15 of the CBD governing access to genetic resources must be read in the context of the CBD's mandate in relation to local and indigenous communities. Although all obligations and responsibilities revolve around the [*102] State, any regime that attempts to implement Article 15 must take local and indigenous peoples into account, for the simple reason that:

The knowledge of these local communities is intrinsically linked to the resource itself. Hence there can be no access regime based solely on a State's control over the resources or a State's benefit from use of the resources. The fact that implementation of Article 15 is closely linked to . . . Article 8(j) has also been recognized in the decision on access to genetic resources concluded at the third Meeting of the Conference of the Parties to the CBD. n138

Resources, in other words, cannot be appropriated without the concomitant appropriation of knowledge. Thus, access to resources should not be addressed except with regard to the indigenous knowledge concerns addressed in Article 8(j). n139 Clearly, the two principles of promoting access to resources and promoting the wider application of indigenous knowledge, innovations, and practices are closely interrelated. Although approval, consent, consultation, and compensation are to be observed in both cases, the CBD emphasis is clearly on the creation of fields of communication and sharing on a level playing field. Indigenous peoples' desires to preclude access and to maintain secrecy and close corporate control over resources and knowledge may be justified under other human rights norms, but they do not appear to be contemplated by the CBD.

In the body of the CBD, Article 8 on *in situ* conservation requires each State to preserve indigenous and local communities' practices and to promote wider application of traditional knowledge "with the approval and involvement of the holders of such knowledge, innovations, and practices." n140 It is suggested that:

Approval connotes the elements of consent, permission and authorization by these communities before the wider application of their knowledge, innovations, and practices. Approval will not make any sense unless it incorporates the [*103] value of the right of these communities to say "no" . . . and further, the right to determine the conditions for the use of the same and thereby have an element of control and

a voice in the actual application of their knowledge, innovations, and practices. *Involvement* connotes an element of active participation of these communities in the planning process for the wider application of their knowledge, innovations, and practices. It goes beyond merely being informed, and implies the need for active responsible engagement by these peoples... n141

Article 8's provisions give legal effect to the intentions expressed in the Preamble with respect to indigenous peoples. "Implementation of Article 8(j) would seem to require each State to identify and document the knowledge, innovations, and practices of indigenous and local communities, and to conduct research to determine what constitutes conservation and sustainable use of biological diversity." n142 This accords with provisions in Agenda 21 n143 which state that research and education programs should be aimed at achieving better understandings of indigenous peoples' knowledge and management experience related to the environment, and to increasing the efficiency of indigenous peoples' resource management systems, for example, by promoting the adaptation and dissemination of suitable technological innovations. The provisions of Article 8 are also in accordance with Principle 22 of the Rio Declaration n144 that mandates State recognition and support of indigenous and local communities' identity, culture, and interests, and enable their effective participation and partnership in the achievement of sustainable development. n145 The third Convention of the Parties to the CBD also puts emphasis precisely upon the development of capacity-building initiatives with indigenous peoples to address conservation concerns. n146

[*104] Evidence of prior informed consent might be made a condition for the granting of IPRs in developed countries. Such an initiative appears to be necessary to meet CBD objectives. Until a global standard is recognized, however, evidence of compliance with local governing access regimes appears to be a minimal, if somewhat insufficient standard. Worldwide, there has been a significant amount of planning and legislative activity at the regional, national, and subnational levels dealing with access to genetic resources since the CBD entered into force. n147 However, much of this legislative activity is merely enabling and most laws do not clearly establish the principles that access to genetic resources shall be on mutually agreed terms and subject to prior informed consent. A much smaller group of countries has passed framework biodiversity laws that incorporate these principles (Costa Rica, Eritrea, Fiji, Mexico, and Peru). The only stand-alone national law on access to genetic resources that has been finalized is in the Phillipines, but the Andean Pact has created a common regime on access to genetic resources that became law in all five member States in 1996. n148

From a human rights standpoint, requiring compliance with the national legislation of source countries is a minimal, and arguably *de minimus* threshold. Many countries rich in biodiversity will never pass nor enforce such legislation. Some legislative regimes only deal with wild flora and fauna, which would not apply to many plant resources of significance to indigenous peoples. The requirements within relevant national legislation may not respect the rights of indigenous peoples or local communities to participate in such decisions or to share in the benefits of resource extraction. Most States, furthermore, are far from establishing access provisions that address benefit sharing for useful biochemicals found in the materials for which access is sought. Derivatives, such as "unimproved or unmodified chemical compounds, other than DNA or RNA, merely associated with targeted biological material, but formed by the organism's metabolic processes [may] . . . exist in a sample of biological material when it is obtained from an *in situ* or *ex situ* source. n149

Active compounds found within plant materials that have been collected but which are yet to be extracted, modified and used in a technological application, have not yet been considered subject to access provisions; but there seem to be [*105] no particular reasons why they might not ultimately be

so governed. Access legislation may be extended to such derivatives, and perhaps ultimately will be in many areas. This would regulate access to the materials containing the chemical compounds just as such legislation regulates access to the genetic material itself, enabling "appropriate benefit-sharing arrangements to be negotiated for any subsequent use of the materials taken and used." n150 The valuation and accounting dimensions of this process should not, however, be discounted. n151

Such accounting and monitoring burdens should only be imposed on those with the resources and capacities to bear them. Arguably, commercial developers of genetic resources have access to this information and should be able to make it available. The developed countries' intellectual property regimes are one obvious place to put pressure on companies to do so. The larger policy question is whether or not developed States, party to the CBD, should also assist indigenous peoples in developing countries that have not put such legislation into place by precluding patent or plant breeders' rights protection for innovations based upon such materials if no such access arrangements for derivatives have been made. From a human rights and CBD perspective, such a decision would seem to be warranted. Pursuant to the CESC, States have obligations to ensure that intellectual property rights are granted and exercised in a fashion that does not disadvantage indigenous peoples, minorities, and those who are economically disadvantaged. The CBD also exhorts parties to use IPRs to meet Convention objectives. n152

More difficult questions are posed by the possibility of securing the extension of access legislation to derivatives such as:

DNA or RNA, or a chemical compound, modified or created or synthesized from materials originally obtained from an *in situ* or *ex situ* source. The resulting end-product, for example, [*106] might be a breeder's hybrid seed, a traditional healer's medicine, or a pharmaceutical company's synthesized version of an extracted biochemical. These, then, are end-products derived from genetic or biochemical resources through human intervention. n153

As legal expert Lyle Glowka acknowledges, it would be very difficult for developing countries to extend access legislation to such derivatives because they would be attempting to regulate the use of technologies outside of State borders, which would be virtually impossible for the source State to control. n154 Here again, developed countries who are party to the CBD might play a contributing role through their intellectual property systems, by making such protections contingent upon benefit-sharing of profits made upon derivatives. This would greatly assist the market position or bargaining power of developing countries and local communities in negotiating benefit-sharing arrangements at the time of access. n155

Finally, the access legislation proposed in most developing countries is still less than optimal from the point of view of access to indigenous knowledge. Even in areas where indigenous peoples are acknowledged and their knowledge valued, prior informed consent by indigenous peoples providing such knowledge has not been legislatively mandated. For example, the Andean Pact countries "recognize and value the rights and the power of decision of indigenous Afro-American and local communities over their traditional knowledge, innovations, and practices associated with genetic resources and derivative processes thereof," n156 but there are no explicit provisions referring to the providers' prior informed consent. In most cases, to the extent that indigenous peoples are to be safeguarded at all in such processes (so far only in the Andes, the Phillipines, Fiji, and Eritrea), the State will be responsible for providing consent. As we have seen, this protection is wholly inadequate for indigenous peoples in many parts of the world. NGOs may have a role to play here, but it would be arguably even more politically difficult to make the grant of IPRs in developed States conditional on compliance with the "soft law" international declarations [*107] of indigenous peoples' NGOs.

Disclosure requirements may also be formulated to recognize human rights concerns. Identification of sources for genetic materials, warrants of sustainable harvesting, and acknowledgment of the involvement of any indigenous peoples in either locating and obtaining the resource or providing knowledge about its properties could be required by States granting IPRs, and penalties could be imposed for misrepresentations in intellectual property disclosures. Third World activists and NGOs have suggested "every patent office in a Western country should insist that [the] patent applicant declare that the knowledge and resources used in a patent have been obtained lawfully and rightfully." n157 Disclosures for plant-based products or other innovations from indigenous peoples should provide that the source material and knowledge has been rightfully and lawfully acquired. Lawful acquisition will imply that prior informed consent and approval and involvement of local communities and creative individuals have been ensured, assuming that the donor country has laws requiring such consent and approval. "If a country does not have any such laws, . . . then acquiring . . . material (and knowledge) will be lawful, . . . but may not be rightful." n158 Rightful acquisition involves ethical inquiries into the corporation's compensation practices.

This proposal acknowledges the sad reality that many Third World countries are unlikely to enact prior informed consent legislation that extends protections to local and tribal peoples. Nonetheless, the argument implies that the extension of one set of rights (property and cultural rights) to Northern persons should not be premised upon the denial of the rights to Southern persons. Since Western governments party to the major human rights Covenants have obligations to ensure that private parties subject to their jurisdiction do not violate the human rights of others, such a premise is congruent with commitments to rights of subsistence, to enjoy the fruits of one's labor, privacy, environmental sustainability, and cultural integrity (although not all of these rights are necessarily implicated in every such taking).

The lawful and rightful disclosure requirement may be awkward, if not politically impossible, to enforce, especially if it were to be imposed as an absolute barrier to patent protection. In the shorter term, however, the requirement to disclose both the lawfulness and the rightfulness of the appropriation of material and knowledge need not include any minimum criteria. [*108] For instance, a corporate applicant might simply disclose that the source country imposed no legal consent requirements, and that it has made no arrangements for compensation. To the extent that this information is made part of the public record and published by member State governments, it would provide leverage for indigenous peoples, NGOs, concerned consumers, interested citizens, and the media to put political pressure on patentholders to improve their research and development practices congruent with developing human rights norms. Over time, some corporations might recognize the publicity values and goodwill to be accrued by greater transparency and might set increasingly higher standards to develop market distinctions.

VI. FORMS OF SOVEREIGNTY AND COMMUNITY

It would be a gross misrepresentation of global cultural politics to suggest that all indigenous interest in intellectual property assumes a collective cultural form. Only recently have indigenous peoples become active participants in the process of deliberating the scope of IPRs, and participants in the dialogue are only now becoming fully aware of the full range of meanings and values that these issues have for indigenous peoples. Perspectives on the issue are far from homogenous. It appears that there is an emerging division of opinion as to the viability of IPRs between representatives of indigenous peoples in "the West" (which appears to encompass New Zealand, Australia, Hawaii, and the Pacific Islands) and representatives of tribal others (Asian and African groups and Southern NGOs representing Third World,

rather than Fourth World, interests). The interests of these groups are substantially different and appear to reflect the different social and political contexts in which rights are being recognized and negotiated. Those in the former group have claims as indigenous peoples that are more fully recognized in national and international law. They have made IPRs subsidiary to, and an integral part of, their struggles for self-determination--aspects of their more primary assertions of sovereignty. The latter group of indigenous peoples face more protracted struggles to have their indigenous status recognized, both in the States in which they reside and in the international arena. Legal recognition of their sovereign rights to control territory and resources appears far more remote; consequentially, they have taken a more pragmatic view of the potential short-term benefits of IPRs in alleviating poverty.

For instance, Anil Gupta, speaking for the Society for Research Initiatives for Sustainable Technologies and Institutions (SRISTI) and other civil society [*109] NGOs, asserts that the denunciation of IPRs by indigenous peoples' groups (some of whom have proclaimed all access to biological resources and indigenous knowledge to be forms of "biopiracy" that commodify and monopolize communally held knowledge) has been overstated and is often inaccurate. n159 Local communities and creative individuals in the Third World need forms of incentives, and recognition for innovation. Intellectual property, although far from wholly adequate, should not be abandoned as one mechanism to accomplish this. There is a genuine case for reforming patent regimes and creating additional alternative frameworks to meet local needs.

Gupta strenuously argues against the proposition that all indigenous peoples' knowledge be treated as the common property of a collective. Individual local experts with an abundance of knowledge, practice skills, and capacities to develop new applications not only exist, he asserts, but in many parts of the world, they are among the poorest of the poor. In many communities their knowledge is neither valued, nor respected, and may even be denigrated as superstitious and insufficiently modern. In such circumstances, no local incentives exist for them to maintain this knowledge, no opportunities exist for livelihood options building upon such skills, and there are no institutions or incentives for the young to learn these practices from their elders. Providing such individuals with recognition, the possibility of economic benefit, or even the provision of means to convey and disseminate this knowledge to a new generation will be necessary to develop indigenous knowledge and conserve biodiversity in these contexts. The sovereignty of the individual innovator should be affirmed as a way of furthering local sustainable development.

Gupta believes individual contemporary innovations using traditional knowledge should be documented, registered, and protected in community registers. n160 Such knowledge and the innovations based upon it need to be shared among the poor in Third World contexts according to Gupta, and [*110] transnational networks are already in place for this purpose. n161 The Honeybee Network, for instance, has been involved in documentation, experimentation, and dissemination of indigenous knowledge, innovations, and practices for at least sixteen years, working closely with farmers in 2300 villages in Gujarat, India, as well as in Haryana, Maharashtra, Karnataka, Tamilnadu, Rajasthan, and Madhya Pradesh. The Network's documentation of innovations extends to those coming from Vietnam, Mongolia, Columbia, Ecuador, Tanzania, Cambodia, Bhutan, Sri Lanka, and some South American Indian communities. This database and network of grassroots innovators serves as a decentralized method of disseminating important knowledge to other indigenous communities. Particularly, this

Network aims to identify innovators who have tried to break out of existing technological and institutional constraints through their own imagination and effort. What is remarkable about these innovations is the fact that they require quite low external inputs, are extremely eco-friendly, and improve productivity at a low cost. To date, the Network has collected more than 1,400 innovative practices, predominantly from

dry [and marginal] regions, proving that disadvantaged people may lack financial and economic resources, but remain rich in knowledge. n162

The Network publishes this knowledge and these innovations in local languages to be shared by indigenous communities, and every innovation is sourced to individuals and communities, allegedly to protect any potential IPRs. The Network newsletter is published in eight languages in Southeast Asia and currently extends to seventy-five countries. It is emphasized that although the primary purpose of such networks is to share knowledge among the poor, the potential exists for this to provide a means of technology transfer from knowledge-rich to biodiversity-poor areas that will increasingly need sustainable alternatives to such things as highly toxic chemical pesticides and synthetic dyes. Technology transfer is a two-way street and the North may ultimately benefit from the efforts of the South in this regard. For example:

[*111] Most countries do not have a fast-track approach for developing or registering herbal pesticides derived from plants. Perhaps one answer is a special fund to support formal research on farmers' innovations in public or private sector labs, so as to develop a whole range of sustainable and cost-effective technologies. These technologies may help transform agriculture not only in developing countries, but also in economically developed ones lacking traditional farmer knowledge and creativity. These innovations, therefore, may not only help transfer technologies between countries in the South, but from the South to North as well. n163

This knowledge network is seen as complementary to intellectual property incentives as a means of alleviating the poverty that currently degrades the people whose activities are the most important in protecting the global biological heritage. n164 Networks like these could be recognized internationally and administered through the CBD, WTO, or WIPO as an International Network for Sustainable Technological Applications and Registration (INSTAR). n165 INSTAR, it is suggested, would serve as a mechanism for sharing knowledge, attracting investment to innovation, and developing enterprise activities to convert innovations into products and services to be diffused by either commercial or noncommercial channels. INSTAR could "oversee contracts, ensure sustainable extractions, channel information about innovations to other indigenous communities facing similar ecological challenges, serve as a clearing house mechanism, and provide the evidentiary basis for the award of inventor's certificates and risk insurance to develop value-added products from these innovations." n166 It has been suggested that a network of registers--national registers for local communities, international registers of folklore and indigenous knowledge, and an international database to trace germplasm--could serve both as a tracing mechanism and as a means to ensure that methods and materials in customary use cannot be appropriated [*112] and declared as novel by industrial interests seeking exclusive rights under intellectual property laws. n167

Patents are the vehicle most often suggested to provide the necessary incentives for indigenous peoples to preserve biodiversity. However, they are unavailable for much traditional biocultural knowledge and its applications because of the requirement that inventions be novel and nonobvious. Biocultural knowledge that has been known for generations will certainly be disqualified. Given the high likelihood that such an indigenous invention will have been published by scientists and Western researchers, this publication may preclude rights issuing for innovations "derived from that knowledge if the publication describes the innovation in sufficient detail either to anticipate the innovation or render it obvious." n168 It will then be considered prior art. The publication bar to patenting innovations puts an unfair burden on indigenous communities who have, historically, been subject to intense scrutiny by colonial powers, academic

researchers, and government agencies and, consequentially have had little capacity to control their knowledge or its circulation.

Whether indigenous networks themselves do or should afford an obstacle to recognition of indigenous IPRs, however, is an important point that will need to be addressed. Gupta seems to assume that public sharing of such knowledge and its applications will not preclude patent applications by indigenous persons. Such activities, will more than likely serve to ensure that patent applications for technologies drawing upon such knowledge will be legally deemed to be anticipated by virtue of public disclosure.

The publication bar militates against human rights goals of sharing information, technology, and international cooperation, as well as the allocation of benefits from progress in the arts and sciences to the greatest number of people, in a fashion that does not further deprive the already disadvantaged. As some Third World commentators have recognized, "the publication of local knowledge deprives on [the] one hand any benefit that may arise from value addition in local knowledge to the individual or community or nation concerned and on the other, makes it possible for people struggling with similar problems to learn from it." n169

Because the law encourages secrecy and the privatization of knowledge [*113] until its potential commercial application becomes clear, Third World innovators cannot share knowledge with others who may desperately need it, nor can they seek to attract investors who may be able to transform it into a better source of revenue for local communities. A group like the Honeybee Network is therefore in a difficult position. Prior to the publication of knowledge in the newsletter, the Network must attempt to aid either the community or the individual in establishing a legal right. In most cases, however, the innovation will not have reached the point of patentability because the capacity for industrial application remains to be ascertained, and there is little investment capital available to explore the possibility. In the meantime, the knowledge may be valuable in alleviating poverty amongst other indigenous and local peoples and enriching their livelihoods. Third World networks and networks of indigenous peoples face an untenable choice between not publishing in order to maintain the potential for future patent benefits, in which case they withhold useful information from those in dire need of it, or publishing it with the knowledge that in assisting others, one risks forfeiting the fruits of one's labors. Such a choice violates human rights norms that encourage the sharing of benefits, the flow of information, the right to share in progress in the arts and sciences, cross cultural exchange, and the right to sustainable development and a healthy environment.

It is imperative that indigenous peoples have the opportunity to register, document, and disseminate knowledge and innovations among indigenous communities, without thereby exhausting or precluding the capacity of innovating communities to profit from the commercial application of such knowledge. Exceptions could be made in existing intellectual property legislation that would exempt documentation of indigenous knowledge in indigenous networks or community registers. One possible means of amending patent law to recognize this would involve making distinctions between *kinds* or *forums* of publication when determining if a publication that should preclude issuing a patent has taken place. The kinds of publication by networks like the Honeybee might be deemed akin to experimental usages that do not defeat an innovation's eligibility for patenting. Gupta argues:

Given the high hit rate in formal research around locally identified uses of plants and other kinds of biodiversity, transaction costs of formal R and D systems in private and public systems are reduced considerably. They should in turn share the benefits that may accrue from commercialization of [*114] so protected products. In some cases local communities or individuals . . . should be considered co-inventors of the new value added products. The newness and nonobviousness of a traditional knowledge

should be seen in the light of available repertoire for that particular purpose. The local knowledge should qualify to be considered new for the purposes of prior art since outside communities/companies may not have had access otherwise. The norms regarding exhaustion of the rights due to publication of local knowledge should be reconsidered and modified so that incentives to share that knowledge by local communities with outsiders are not affected adversely. n170

\$ TCONCLUSION

It should be apparent, even from this brief and far from comprehensive survey of potential issues, that our regimes of intellectual property protection might face some fundamental challenges if human rights commitments were recognized in the granting, enforcement, and monitoring of IPRs. Considering the interests of indigenous peoples reveals some of the underlying tensions in the global meaning and value accorded to culture in the field of international human rights. Intellectual property rights are "cultural" in all of the conflicting ways in which that concept figures conceptually, socially and institutionally. Examining the prospects for using IPRs as a means to secure protection for indigenous knowledge has enabled us to see some of the fundamental political limitations inherent in a model for allocating rights that recognizes only the possessive individual or the nation-state as sites for the exercise of sovereignty.

The increasingly transnational character of economic power, elite exploitation, indigenous political mobilization, flows of cultural information and genetic resources, indigenous knowledge sharing, and assertions of cultural significance suggest that traditional analyses of sovereignty cannot do justice to the complexities of the networks of power and resistance in which intellectual properties are increasingly relevant. Intellectual property protections are becoming more extensive and more pervasive. An acknowledgement of their status as human rights instruments seems timely, if not urgent, given the contemporary hegemony of financial and trade considerations in global [*115] discussions of intellectual property. As a consequence of the Uruguay Rounds, State sovereignty over IPRs no longer appears especially significant in terms of ensuring that intellectual property protections meet domestic public interests. Nonetheless, States with international human rights commitments retain a significant power, though largely untapped, to ensure that IPRs serve larger goals of global social justice. NGOs might play an important role in pressuring them to do so. This is a political opportunity that provides some promising prospects for new forms of accountability in the global economy.

FOOTNOTES:

n1 International Covenant on Civil and Political Rights, Dec. 19, 1966, 999 U.N.T.S. 171.

n2 International Covenant on Economic, Social and Cultural Rights, Dec. 16, 1966, 993 U.N.T.S. 3 [hereinafter CESCR].

n3 *Id.* at art. 15.

n4 See, e.g., PAUL HUNT, RECLAIMING SOCIAL RIGHTS: INTERNATIONAL AND COMPARATIVE PERSPECTIVES (1996); J. Oloka-Onyango & Sylvia Tamale, "The Personal is Political", or Why Women's Rights are Indeed Human Rights: An African Perspective on International Feminism, 17 HUM. RTS. Q. 691 (1995); Asbj[empty set]rn Eide & Allan Rosas, *Economic, Social and Cultural Rights: A Universal Challenge*, in ECONOMIC, SOCIAL AND CULTURAL RIGHTS: A TEXTBOOK 15-19 (Eide et al. eds., 1995) [hereinafter TEXTBOOK]; Asbj[empty set]rn Eide, *Economic, Social and Cultural Rights as Human Rights* [hereinafter Eide], in TEXTBOOK, *supra* at 21-40; Allan Rosas, *So-Called Rights of the Third Generation*, in TEXTBOOK, *supra* at 243-45; G.J.H. van Hoof, *The Legal Nature of Economic, Social and Cultural Rights: a Rebuttal of Some Traditional Views*, in THE RIGHT TO FOOD 97 (Philip Alston & K. Tomasevski eds., 1984); INTERNATIONAL HUMAN RIGHTS IN CONTEXT: LAW, POLITICS, MORALS (Henry J. Steiner &

Philip Alston eds., 1996).

n5 Bruno Simma suggests that "there hardly exists another human rights treaty which has been more frequently misinterpreted, downplayed or intentionally abused than the International Covenant of Economic, Social and Cultural Rights." Bruno Simma, *The Implementation of the International Covenant of Economic, Social and Cultural Rights*, in THE IMPLEMENTATION OF THE INTERNATIONAL COVENANT OF ECONOMIC, SOCIAL AND CULTURAL RIGHTS: INTERNATIONAL AND COMPARATIVE ASPECTS 79 (1991).

n6 Scott Leckie, *Another Step Towards Indivisibility: Identifying the Key Features of Violations of Economic, Social and Cultural Rights*, 20(1) HUM. RTS. Q. 81, 82 (1998).

n7 HUNT, *supra* note 4, at 4.

n8 Philip Alston, *Economic and Social Rights*, in HUMAN RIGHTS: AN AGENDA FOR THE NEXT CENTURY 137, 152 (Louis Henkin & John Lawrence Hargrove eds., 1994).

n9 *Id.*

n10 Eide, in TEXTBOOK, *supra* note 4, at 22 (citing G. E. W. Vierdag, *The Legal Nature of the Rights Granted by the International Covenant on Economic, Social and Cultural Rights*, 9 NETH. J. OF INT'L L. 103 (1978)).

n11 *Id.* at 23.

n12 *See id.* at 24.

n13 *Id.* (citing *The World Conference on Human Rights: The Vienna Declaration and Programme of Action*, pt. 1, P5, U.N. Doc. A/CONF. 157/23 (1993)).

n14 M. CRAVEN, THE INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL, AND CULTURAL RIGHTS: A PERSPECTIVE ON ITS DEVELOPMENT 352 (1995).

n15 Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, *reprinted in* THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS: THE LEGAL TEXTS (1994) [hereinafter TRIPS Agreement].

n16 Leckie, *supra* note 6, at 104.

n17 *Id.*

n18 *See generally* HUNT, *supra* note 4 (advocating a revised analytical approach for international human rights law by considering socioeconomic, cultural, political and civil rights simultaneously). See also the U.N. Committee on Economic, Social and Cultural Rights summary, where it is noted that: The undertaking to take steps . . . by all appropriate means . . . neither requires nor precludes any particular form of government or economic system being used. . . . In this regard, the Committee reaffirms that the rights recognized in the Covenant are susceptible to realization within the context of a wide variety of economic and political systems, provided only that the interdependence and indivisibility

of the two sets of human rights, as affirmed *inter alia* in the preamble to the Covenant, is recognized and reflected in the system in question.

U.N. Committee on Economic, Social, and Cultural Rights, 5th Sess., P8, U.N. Doc. E/C.12/1990/SR.28 (1990).

n19 CESCR, *supra* note 2.

n20 Asbj[empty set]rn Eide, *Cultural Rights as Individual Human Rights* [hereinafter Eide, *Cultural Rights*], in TEXTBOOK, *supra* note 4, at 229, 229.

n21 As an historical note, Asbj[empty set]rn Eide mentions that:

One of the cultural rights mentioned, namely the right to benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which the beneficiary is the author, is closely related to the right to property. That right, however, is not included in the two Covenants but it is contained in Article 17 of the UDHR. When Article 27 of the UDHR was negotiated, controversy arose over the inclusion of the right to benefit from the moral and material interests of the author. Some members of the Commission on Human Rights argued that it was not a right applicable to everyone, adding that it also felt that patents and copyrights could sometimes become an obstacle to the possibility for others to enjoy the benefits of scientific progress and its applications. In the end, however, it was included.

Id. at 232-33 (citing ALBERT VERDOODT, NAISSANCE ET SIGNIFICATION DE LA DECLARATION UNIVERSELLE DES DROITS DE L'HOMME 245-256 (1964)). Eide notes that there already existed international agreements protecting international cultural cooperation and the preservation of cultural heritage; thus he doubts that anything new was added to existing international law by either Article 27(2) of the UDHR or 15(1)(c) of the CESCR. He does not further explore the possibility that these rights must be implemented in a fashion that is congruent with other human rights obligations.

n22 See, e.g., The International Covenant on Economic, Social and Cultural Rights, October 1997, Dept. of Canadian Heritage, 3rd Report of Canada.

n23 Eide, *Cultural Rights*, in TEXTBOOK, *supra* note 4, at 233.

n24 *Revised Guidelines Regarding the Form and Contents of Reports to be Submitted by States Parties Under Articles 16 and 17 of the ICESCR*, U.N. ESCOR, 6th Sess., Supp. No. 3, U.N. Doc. E/1992/23.

n25 *Id.*

n26 *Id.*

n27 *Id.*

n28 *Id.*

n29 *Id.*

n30 See Leckie, *supra* note 6, at 90 (citing as an example *The Nature of States Parties Obligations*, U.N. ESCOR, 5th Sess., Supp. No. 3, Annex III, at 83, U.N. Doc. E/C.12/1990/8 (1990)). See also Matthew C.R. Craven, *The Domestic Application of the International Covenant on Economic, Social and Cultural Rights*, XL NETH. INT'L L. REV. 367 (1993); Mario Gomez, *Social Economic Rights and Human Rights*

Commissions, 17 HUM. RTS. Q. 155 (1995).

n31 Article 2.1 provides that:

Each State Party to the present Covenant undertakes to take steps, individually and through international assistance and co-operation, especially economic and technical, 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, including particularly the adoption of legislative measures. CESCR, *supra* note 2, at 5. See generally Philip Alston & Gerard Quinn, *The Nature and Scope of States Parties' Obligations Under the International Covenant on Economic, Social and Cultural Rights*, 9 HUM. RTS. Q. 156 (1987); Asbj[empty set]rn Eide, *Realization of Social and Economic Rights and the Minimum Threshold Approach*, 10 HUM. RTS. L. J. 35 (1989).

n32 Eide, in TEXTBOOK, *supra* note 4, at 30.

n33 See Philip Alston, MAKING AND BREAKING HUMAN RIGHTS: THE UN'S SPECIALIZED AGENCIES AND IMPLEMENTATION OF THE INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL AND CULTURAL RIGHTS (1979), reprinted as Philip Alston, *The United Nations' Specialized Agencies and Implementation of the International Covenant on Economic, Social, and Cultural Rights*, 18 COLUM. J. TRANSNAT'L L. 79 (1979). More recently, see Philip Alston, *The United Nations' Specialized Agencies and Implementation of the International Covenant on Economic, Social, and Cultural Rights*, 44 AM. U. L. REV. 1157 (1995).

n34 CESCR, *supra* note 2, at 51.

n35 See *The Purpose of General Comments*, U.N. ESCOR, 3d. Sess., Supp. No. 4, Annex III, at 87, U.N. Doc. E/1989/22.

n36 *Id.*

n37 Eide, in TEXTBOOK, *supra* note 4, at 35.

n38 *Id.*

n39 *Id.* at 37.

n40 *Limburg Principles on the Implementation of the International Covenant on Economic, Social and Cultural Rights*, U.N. Commission on Human Rights, U.N. ESCOR, 43d Sess., Agenda Items 8, 18, U.N. Doc. E/CN.4/1987/17, Annex (1987), reprinted in 9 HUM. RTS. Q. 122 (1987); For a discussion of its import, see David L. Martin, *The Limburg Principles Turn Ten: An Impact Assessment* (unpublished document referred to in Leckie, *supra* note 6, at 89).

n41 Leckie, *supra* note 6, at 98.

n42 U.N. ESCOR, Commission on Human Rights, Res. 1993/14.

n43 Leckie, *supra* note 6, at 109 (citing IAN BROWNLIE, *PRINCIPLES OF PUBLIC INTERNATIONAL LAW* 435 (4th ed. 1990)).

n44 See Case 7920, Inter-Am. C.H.R. 35, OEA/ser. L/V/III. 19, doc. 13 at 71 (1988).

n45 See *Second Interim Report on the Question of the Impunity of Perpetrators of Human Rights Violations, Prepared by Mr. El Hadji Guisse, Special Rapporteur*, Commission on Human Rights, 48th Sess., Agenda Item 8, U.N. Doc.E/CN.4/Sub.2/1996/15 (1996).

n46 See Leckie, *supra* note 6, at 111-115.

n47 *Id.*

n48 See MENNO T. KAMINGA, *INTER-STATE ACCOUNTABILITY FOR VIOLATIONS OF HUMAN RIGHTS* (1992).

n49 Whether or not this would raise extra-territorial jurisdiction issues is an important question, but one that is beyond the scope of this Article.

n50 The Commission on Human Rights of the U.N. Economic and Social Council is an important organ of the human rights system. The Commission has supervision over the Subcommission on Prevention of Discrimination and Protection of Minorities. The Subcommission has several working groups. In 1982, the Commission and Council approved the establishment of a U.N. Working Group to focus on indigenous peoples. The Working Group on Indigenous Populations (more commonly and informally known as the Working Group on Indigenous Peoples) has become the principal U.N. group concerned with indigenous peoples' rights. Like other working groups established by the Subcommission, it is comprised of individuals who act in the capacity of independent human rights experts rather than government representatives. It issues an annual report on the Working Group on Indigenous Populations. One of its main projects has been the drafting of a Universal Declaration on Indigenous Rights. See *Draft United Nations Declaration on the Rights of Indigenous Peoples*, U.N. Subcommission on Prevention of Discrimination and Protection of Minorities, Res. 1994/5 at 105, U.N. Doc.E/CN.4/Sub.2/1994/56 (1994) [hereinafter *Draft Declaration*]. It is now before the Commission on Human Rights, which has also formed its own working group to consider it. The *Draft Declaration* is still controversial and is unlikely to be adopted without amendments. Its explicit inclusion of the right of self-determination is one of its most controversial provisions, given the reticence of the international community of States to recognize indigenous peoples as peoples in international law.

Part III of the *Draft Declaration* includes the rights of indigenous peoples to practice cultural traditions and the right to maintain sites, ceremonies, technologies, and "the right to restitution of cultural, intellectual, religious and spiritual property taken without their free and informed consent." *Id.* at 109. The land rights contained in Part VI include "recognition of the full ownership, control and protection of their cultural and intellectual property" and measures to control, develop, and protect their sciences, technologies, and cultural manifestations, including human and, *inter alia*, other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora." *Id.* at 112. To the extent that these rights may become human rights obligations, either by eventual incorporation into treaty or by virtue of international customary law, intellectual property rights held by others in innovations that are based upon indigenous resources or knowledge may be called into question.

n51 Particular aspects of indigenous peoples' cultural identity were acknowledged by the Working Group to require further study. The ecological knowledge, songs, stories, human remains, funerary objects, and other such tangible and intangible aspects of indigenous heritage were referred to the Working Group Chair, Erica-Irene Daes, under the sponsorship of the U.N. Subcommission on Prevention of Discrimination and Protection of Minorities. See *1993 Study on the Protection of the Cultural and Intellectual Property of Indigenous Peoples*, U.N. Subcommission on Prevention of Discrimination and

Protection of Minorities, 45th Sess., Agenda Item 14, U.N. Doc. E/CN.4/Sub.2/13993/28 (1993). The resulting study identifies widespread practices that have deprived indigenous peoples of tangible and intangible properties central to the preservation of cultural heritage. See *id.* The study recommends a number of legislative initiatives to correct these practices and proposes additional measures for greater international cooperation. *Id.* at 38-42.

n52 See, for example, the declarations reprinted in DARRELL A. POSEY AND GRAHAM DUTFIELD, *BEYOND INTELLECTUAL PROPERTY: TOWARD TRADITIONAL RESOURCE RIGHTS FOR INDIGENOUS PEOPLES AND LOCAL COMMUNITIES* (1996) [hereinafter *BEYOND INTELLECTUAL PROPERTY*].

n53 The Convention on Biological Diversity, *opened for signature* June 5, 1992, 31 I.L.M. 822 (1992).

n54 For examples, see the essays in VALUING LOCAL KNOWLEDGE: INDIGENOUS PEOPLE AND INTELLECTUAL PROPERTY RIGHTS (S.B. Brush & D. Stabinsky eds., 1996) [hereinafter *VALUING LOCAL KNOWLEDGE*] and in BORROWED POWER: ESSAYS ON CULTURAL APPROPRIATION (Bruce Ziff & Pratima Rao eds., 1997).

n55 Eide, *Cultural Rights*, in *TEXTBOOK*, *supra* note 4, at 234.

n56 *Id.* at 235 (citing Philip Alston, *The International Covenant on Economic, Social and Cultural Rights*, in *MANUAL ON HUMAN RIGHTS REPORTING* 69-70 (1991)).

n57 Rodolfo Stavenhagen, *Cultural Rights and Universal Human Rights*, in *TEXTBOOK*, *supra* note 4, at 63, 65.

n58 *Id.* at 65-66.

n59 Eide, *Cultural Rights*, in *TEXTBOOK*, *supra* note 4, at 230.

n60 Although cultural rights as such are contained in the CESC, the most explicit conferral of a right to cultural identity is contained in Article 27 of the CCPR in the form of a civil and political right bestowed upon members of ethnic, religious, and linguistic minorities to collectively enjoy their own culture. According to a 1994 General Comment issued by the United Nations Human Rights Committee, this is an additional right conferred upon members of minority groups over and beyond those they enjoy as individuals. See *Compilation of General Comments and General Recommendations Adopted by Human Rights Treaty Bodies*, U.N. Hum. Rts. Comm., 50th Sess., pt. 1, General Comment 23, at 38, U.N. Doc. HRI/GEN/1/Rev. 1 at 38 (1994). See also S. JAMES ANAYA, *INDIGENOUS PEOPLE IN INTERNATIONAL LAW* 97 (1996) (discussing the right to cultural identity as it pertains to indigenous peoples).

n61 See ROSEMARY J. COOMBE, *THE CULTURAL LIFE OF INTELLECTUAL PROPERTIES: AUTHORSHIP, APPROPRIATION, AND THE LAW* (1998).

n62 Stavenhagen, *supra* note 57, at 67.

n63 See J. Herman Burgers, *The Function of Human Rights as Individual and Collective Rights* 63-74, in *HUMAN RIGHTS IN A PLURALIST WORLD: INDIVIDUALS AND COLLECTIVITIES* 63-74 (Berting et al. eds., 1990) for a discussion of the legitimacy and necessity of recognizing collectivities as rights-holders.

n64 *Id.*

n65 The Mexico City Declaration on Cultural Policies states, *inter alia*, that:

1. Every culture represents a unique and irreplaceable body of values since each peoples' traditions and forms of expression are its most effective means of demonstrating its presence in the world. 2. The assertion of cultural identity therefore contributes to the liberation of peoples. Conversely, any form of domination constitutes a denial or an impairment of that identity.

World Conference on Cultural Policies, Final Report, U.N. ESCOR, November 1982, U.N. Doc. CLT/MD/1.

n66 According to Article 1(2), of the Declaration of the Principles of International Cultural Cooperation, adopted by the General Conference of UNESCO on 4 November 1966, "every people has the right and the duty to develop its culture" (*cited in* Stavenhagen, *supra* note 57).

n67 Eide, *Cultural Rights*, *supra* note 20, at 236-38.

n68 Audrey R. Chapman, *Human Rights Implications of Indigenous Peoples' Intellectual Property Rights*, in *INTELLECTUAL PROPERTY RIGHTS OF INDIGENOUS PEOPLES: A SOURCEBOOK* 209, 215 (Tom Greaves ed., 1994). I am assured by Canadian government officials in the Intellectual Property Policy Directorate that under its new Directorship, WIPO has indeed changed its position in the wake of the increased pressure for recognition of indigenous people's traditional knowledge and cultural heritage. However, I have been unable to locate any documentary evidence for this.

n69 Steven B. Brush, *Whose Knowledge, Whose Genes, Whose Rights?* in *VALUING LOCAL KNOWLEDGE*, *supra* note 54, at 4-5.

n70 *Id.*

n71 Mann, *Intellectual Property Rights, Biodiversity and Indigenous Knowledge: A Critical Analysis in the Canadian Context*. Prepared for the Canadian Working Group on Articles 8 (j) of the Convention on Biological Diversity, November 1997, at 1 [hereinafter *Canadian Context*] (on file with author).

n72 Arun Agrawal, *Dismantling the Divide Between Indigenous and Scientific Knowledge*, 26 *DEVELOPMENT AND CHANGE* 413 (1995); Paul Sillitoe, *Reply*, 39 *CURRENT ANTHROPOLOGY* 246 (1998); untitled comments on Paul Sillitoe by Roy Ellen, Carmen Ferradas, and R.L. Stirrat, *The Development of Indigenous Knowledge: A New Applied Analogy*, 39 *CURRENT ANTHROPOLOGY* 223 (1998); *INDIGENOUS ENVIRONMENTAL KNOWLEDGE AND ITS TRANSFORMATIONS* (R. F. Ellen et al. eds., 1998).

n73 Brush, *supra* note 69, at 6.

n74 For a recent debate asserting and contesting these allegations see Michael Brown, *Can Culture Be Copyrighted?*, 39 *CURRENT ANTHROPOLOGY* 193 (1998) (followed by comments by J. A. Barnes, D. Cleveland, R. J. Coombe, P. Descola, L.R. Hiatt, J. Jackson, B.G. Karlsson, D. Posey, W. Powers, L. Rosen, F. Granero, S. Severi, S. Stephenson, M. Strathern, D. Tuzin and response by M. Brown); see generally GAIL K. SHEFFIELD, *THE ARBITRARY INDIAN: THE INDIAN ARTS AND CRAFTS ACT OF 1990* (1997); D.J. Stephenson, *A Comment on Recent Developments in the Legal Protection of Traditional Resource Rights*, 16 *HIGH PLAINS APPLIED ANTHROPOLOGIST* 114 (1996).

n75 This literature is enormous. A great deal of it is cited and discussed in Coombe, *supra* note 61. See also JAMES BOYLE, *SHAMANS, SOFTWARE, AND SPLEENS* (1996); J. Boyle, *The Politics of Intellectual Property* (University of Toronto Legal Theory Workshop Paper, 1997) (unpublished, on file with author);

David Fewer, *Constitutionalizing Copyright*, 55 U. TORONTO FAC. L. REV. 1997, at 175; D. Fewer, *Defining the Public Interest in Canadian Intellectual Property Policy* (1997) (unpublished L.L.M. Thesis, University of Toronto) (on file with author); David Lange, *Copyright and the Constitution in the Age of Intellectual Property*, J. INTELL. PROP. 1993-94, at 119.

n76 See Brown, *supra* note 74.

n77 POSEY & DUTFIELD, *supra* note 52, at 211-12.

n78 *Id.* at 219-22.

n79 *Id.*

n80 *Id.* at 219-20.

n81 Stephen Gudeman, *Sketches, Qualms, and Other Thoughts on Intellectual Property Rights*, in VALUING LOCAL KNOWLEDGE, *supra* note 54, at 103.

n82 See *id.* at 104.

n83 See *id.*

n84 *Id.* at 112-13.

n85 *Id.* at 116.

n86 "Folk crop varieties, also known as land races or farmers' 'traditional' or 'primitive' varieties, are 'geographically or ecologically distinctive populations which are conspicuously diverse in their genetic composition both between populations and within them.'" D. Cleveland & S.C. Murray, *The World's Crop Genetic Resources and the Rights of Indigenous Farmers*, 38 CURRENT ANTHROPOLOGY 477, 480 (1997) (citing A.H.D. Brown, *Isozymes, Plant Populations, Genetic Conservation*, 52 THEORETICAL AND APPLIED GENETICS 145 (1978)).

n87 Model Provisions for National Laws on the Protection of Expressions of Folklore Against Illicit Exploitation and Other Prejudicial Actions (UNESCO-WIPO, 1985).

n88 See Cleveland and Murray, *supra* note 86; Hope Shand, *There is a Conflict Between Intellectual Property and the Rights of Farmers in Developing Countries*, 4 J. AGRIC. & ENVTL. ETHICS 131 (1991).

n89 See *supra* note 50.

n90 R. David Simpson et al., *The Commercialization of Indigenous Genetic Resources as Conservation and Development Policy*, in PROTECTION OF GLOBAL BIODIVERSITY: CONVERGING STRATEGIES 129, 131 (Lakshman D. Guruswamy & Jeffrey A. McNeely eds., 1998) [hereinafter CONVERGING STRATEGIES].

n91 See Brush, *supra* note 69, at 9.

n92 David R. Downes, *Untitled Comment on Cleveland and Murray, The World's Crop Genetic Resources*

and the Rights of Indigenous Farmers, *supra* note 86, at 499.

n93 The possibility that the introduction of biotechnologically engineered seeds into the environments of the original land races from which they were derived may threaten the continuing viability of the traditional variety has been suggested, but, needs to be further investigated and documented.

n94 Gary P. Nabhan, *Sharing the Benefits of Plant Resources and Indigenous Scientific Knowledge*, in VALUING LOCAL KNOWLEDGE, *supra* note 54, at 191.

n95 *Id.* at 192.

n96 *See id.*

n97 POSEY AND DUTFIELD, *supra* note 52, at 121.

n98 *Letter and Information on the Sacred Plant Ayahuasca* (visited Mar. 13, 1998)
<<http://www.igc.org/igc/econet/hl/98031222360/h18.html>>.

n99 *Id.*

n100 Convention on Biological Diversity, United Nations Conference on Environment and Development, *supra* note 53, at 818.

n101 *Caring for the Earth* at 28, U.N. Doc. IUCN/WWF/UNEP (1991).

n102 Convention on Biological Diversity, Article 2 of Preamble, United Nations Conference on Environment and Development, *supra* note 53, at 823.

n103 Anil K. Gupta, *Getting Creative Individuals and Communities Their Due: Framework for Operationalizing Article 8J and 10C [1]*, (Draft paper invited by CBD Secretariat, 1997),
<<http://csf.colorado.edu/sristi/papers/getting.html>>.

n104 David R. Downes, *Global Trade, Local Economies, and the Biodiversity Convention*, in BIODIVERSITY AND THE LAW 203 (W. J. Snape ed., 1996).

n105 Committee on Trade and Environment of the World Trade Organization, Environment and TRIPs, WT/TE/W/8, at 2x (1995).

n106 *See* Surendra J. Patel, *Can the Intellectual Property Rights System serve the Interests of Indigenous Knowledge?*, in VALUING LOCAL KNOWLEDGE, *supra* note 54, at 305, 318-19.

n107 Convention on Biological Diversity, Article 8(j) Preamble, United Nations Conference on Environment and Development, *supra* note 53, at 826.

n108 Curtis M. Horton, *Protecting Biodiversity and Cultural Diversity Under Intellectual Property Law: Toward a New International System*, 10 J. ENVTL L. & LITIG. 1, 2-3 (1995); *see* Gupta, *supra* note 103.

n109 R. V. Anuradha, *In Search of Knowledge and Resources: Who Sows, Who Reaps?*, 6 REV. OF EUR. COMM. & INT'L ENVTL. L. 263 (1997).

n110 Mann, *supra* note 71.

n111 See generally Michael Huft, *Indigenous Peoples and Drug Discovery Research: A Question of Intellectual Property Rights*, 89 NW. U. L. REV. 1678 (1995); Elias Peralta, *A Call for Intellectual Property Rights to Recognize Indigenous People's Knowledge of Genetic and Cultural Resources*, in WIDENING PERSPECTIVES ON BIODIVERSITY 287 (Anatole F. Krattiger et al. eds., 1994); Shayana Kadidal, *Plants, Poverty, and Pharmaceutical Patents*, 103 YALE L.J. 223 (1993); Mann, *supra* note 71.

n112 Brush, *supra* note 69, at 1, 4.

n113 Craig Jacoby & Charles Weiss, *Recognizing Property Rights in Traditional Biocultural Contribution*, 16 STANF. ENVTL. L.J. 74, 94-95 (1997).

n114 Anil K. Gupta, *Rewarding Creativity for Conserving Diversity in the Third World: Can IPR Regime Serve the Needs of Contemporary and Traditional Knowledge Experts and Communities in the Third World?* (visited Oct. 25, 1998) <<http://csf.colorado.edu/sristi/papers/cottier.html>>.

n115 Brush, *supra* note 69, at 18.

n116 See Michael R. Dove, *Center, Periphery, and Biodiversity: A Paradox of Governance and a Developmental Challenge*, in VALUING LOCAL KNOWLEDGE, *supra* note 54, at 57.

n117 *Id.* at 43.

n118 *Id.* at 55.

n119 See Gupta, *supra* note 103, at 180.

n120 *Id.*

n121 See, e.g., R. David Simpson et al., *Scales, Polycentricity, and Incentives: Designing Complexity*, in CONVERGING STRATEGIES, *supra* note 90, at 142.

n122 See Dove, *supra* note 116, at 49.

n123 See generally Stephen B. Brush, *Farmers' Rights and Genetic Conservation in Traditional Farming Systems*, 20 WORLD DEV. 1617 (1992); Stephen B. Brush, *Indigenous Knowledge of Biological Resources and Intellectual Property Rights: The Role of Anthropology*, 95 AM. ANTHROPOLOGIST 653 (1995).

n124 Dove, *supra* note 116, at 56.

n125 See Lee P. Breckenridge, *Protection of Biological and Cultural Diversity: Emerging Recognition of Local Community Rights in Ecosystems Under International Environmental Law*, 59 TENN. L. REV. 735, 785 (1992).

n126 Diane Shelton, *Fair Play, Pair Pay: Preserving Traditional Knowledge and Biological Resources*, 1994 Y.B. INT'L L. 77, 80.

n127 See Mann, *supra* note 71, at 5; Shelton, *supra* note 126, at 81.

n128 Breckenridge, *supra* note 125, at 775.

n129 Shelton, *supra* note 126, at 82 (emphasis added).

n130 LYLE GLOWKA ET AL., A GUIDE TO THE CONVENTION ON BIOLOGICAL DIVERSITY 105 (Environmental Policy and Law Paper No. 30, 1994).

n131 POSEY & DUTFIELD, *supra* note 52, at 224.

n132 *Id.* at 216.

n133 *Id.* at 47 (detailing an extended definition of Prior Informed Consent).

n134 See Allan Rosas, *Property Rights, in* THE STRENGTH OF DIVERSITY: HUMAN RIGHTS AND PLURALIST DEMOCRACY 133 (Allan Rosas & J. Helgesen eds., 1992); J. Frowein, *The Protection of Property, in* THE EUROPEAN SYSTEM FOR THE PROTECTION OF HUMAN RIGHTS 515 (R. St. J. Macdonald et al. eds., 1993); Catarina Krause, *The Right to Property, in* TEXTBOOK, *supra* note 4, at 143.

n135 See Rosalyn Higgins, *The Taking of Property and Human Rights, in* THE TAKING OF PROPERTY BY THE STATE: RECENT DEVELOPMENTS IN INTERNATIONAL LAW, 355, 356 (1982).

n136 Downes, *supra* note 104, at 207.

n137 *Id.*

n138 Anuradha, *supra* note 109, at 263.

n139 *Id.*

n140 Shelton, *supra* note 126, at 82 (emphasis added).

n141 Anuradha, *supra* note 109, at 264-65.

n142 *Id.* at 264.

n143 Agenda 21 is the program of action for sustainable development that was agreed to at the UNCED Conference in Rio. Although it is not legally binding, as a text it has moral force and "may subsequently serve to underpin both national actions and subsequent, possibly more stringent, international agreements in specific areas." STEVE P. JOHNSON, THE EARTH SUMMIT: UNCED (1993).

n144 The United Nations Conference on Environment and Development Declaration, 1992 (Rio de Janeiro).

n145 *Id.*

n146 UNEP/CBD/COP/3/38, Decision III/14, Implementation of Article 8 (j), adopted at COP 3.

n147 See *id.* (an informal survey listing countries engaging in such activities).

n148 Manuel M. Ruiz, *Access regimes for Andean Pact countries: Issues and experiences*, in ACCESS TO GENETIC RESOURCES: STRATEGIES FOR SHARING BENEFITS 187 (John Magabe et al., eds. 1997).

n149 Lyle Glowka, *Emerging Legislative Approaches to Implement Article 15 of the Convention on Biodiversity*, 6 REV. EUR. COMM. & INT'L ENVTL. L. 249, 253 (1997).

n150 *Id.*

n151 Walter V. Reid, *Halting the Loss of Biodiversity: International Institutional Measures*, in CONVERGING STRATEGIES, *supra* note 90, at 168.

n152 However, a closer examination of the restrictions posed by TRIPs is necessary to determine how such a requirement could be drafted and enforced. See Richard G. Tarasofsky, *The Relationship Between the TRIPs Agreement and the Convention on Biological Diversity: Towards a Pragmatic Approach*, 6 REV. EUR. COMMUNITY & INT'L ENVTL. L., 148 (1997), for an extensive discussion of possible conflicts between the two agreements. See JAMES CAMERON & ZEN MAKUCH, THE UN BIODIVERSITY CONVENTION AND THE WTO TRIPs AGREEMENT: RECOMMENDATIONS TO AVOID CONFLICT AND PROMOTE SUSTAINABLE DEVELOPMENT (WWW INT'L 1995).

n153 Glowka, *supra* note 149.

n154 *Id.*

n155 Again, closer attention to the TRIPs Agreement (and possibly interventions into negotiations with the WTO environmental body) will be necessary to ensure that such amendments were not vitiated as trade constraints.

n156 See Ruiz, *supra* note 148 (discussing article 7).

n157 Gupta, *supra* note 103, at 187.

n158 Gupta, *supra* note 114, at 3.

n159 See Gupta, *supra* note 103.

n160 Community registers are NGO initiatives and have yet to receive government or legal approval. For other discussions of "Community Registers" see Madhav Gadgil et al., *Peoples' Biodiversity Register*, 1(5) AMRUTH, Oct. 2, 1996; Graham Dutfield & Utkarsh Ghate, *Implementing Article 8(j) of the CBD Through Peoples' Biodiversity Registers*, 4 BULLETIN OF THE WORKING GROUP ON TRADITIONAL RESOURCE RIGHTS, Winter 1997, at 14-16; Conserving Indigenous Knowledge: Integrating Two Systems of Innovation, U.N. Development Programme (1994); Gurdial S. Nijar, *Developing a Rights Regime for Control of Biodiversity and Indigenous Knowledge*, in PROSPECTS IN BIODIVERSITY PROSPECTING (A. H. Zakri ed., 1995); Berhan G. Tewolde, *A Case for Community Rights*, in INTELLECTUAL PROPERTY RIGHTS, COLLECTIVE RIGHTS, BIODIVERSITY. OCCASIONAL PAPERS 1, 2 (Institute for Sustainable Development, 1996).

n161 See Glowka, *supra* note 149; Gupta, *supra* note 103.

n162 Gupta, *supra* note 103, at 180.

n163 *Id.* at 185.

n164 *Id.*

n165 See Anil K. Gupta, *Building Upon What the Poor are Rich In: Honey Bee Network Linking Grassroots Innovations, Enterprise, Investments and Institutions*, at 2, <<http://csf.colorado.edu/sristi/papers/building.html>>.

n166 See *Id.* at 4. See also Anil K. Gupta, *The Honey Bee Network: Voices from Grassroots Innovators*, CULTURAL SURVIVAL Q., Spring 1996, at 57-60.

n167 Vandana Shiva, *A New Partnership for National Sovereignty*, in INTELLECTUAL PROPERTY RIGHTS, COLLECTIVE RIGHTS, BIODIVERSITY. OCCASIONAL PAPERS, *supra* note 160 at paper 3.

n168 Jacoby & Weiss, *supra* note 113, at 96.

n169 Gupta, *supra* note 114.

n170 *Id.*