

Local Knowledge as Trapped Knowledge: Intellectual Property, Culture, Power and Politics

Chidi Oguamanam

Dalhousie Law School

Discourses of local knowledge and categories of rights claimants thereto are embroiled in complex conceptual and analytical morass. The conceptual quandary around local knowledge is diversionary from the historically rooted hierarchies of culture, power and politics that have subjugated it. Claims to local knowledge are challenged from several dimensions, including arguments from cultural cosmopolitanism, intellectual property rights and aspects of liberal democratic principles. An interesting new site for this power play is the emergent bioprospecting framework of access and benefit sharing. In this context, sophisticated external intermediaries, who have asymmetrical power relationships with custodians of local knowledge, now constitute a new threat to the genuine aspirations of indigenous and local communities. Recently, local knowledge claims are conflated with proprietization of culture raising concerns over the asphyxiation of the public domain. Making the claims or claimants to local knowledge the scapegoats of our troubled public domain undermines the source of the problem. In a way, the current anemic state of our public domain can be blamed on unwholesome expansion of intellectual property and unidirectional appropriation of local knowledge by external interests. The reality of cultural cosmopolitanism requires an intellectual property order that is responsive to the contributions of local knowledge.

Keywords local knowledge; intellectual property; culture; indigenous and local communities

The story of the West's relationship with its "other" (Darian-Smith and Fitzpatrick, 1999, p. 1) is an ongoing narrative. Whether the focus is on the "colonial" or the latter's various prefixes in academic discourse, including pre-, post- and neo- or any other convenient historical, ideological or analytical reference point, such a project continues to feed and occupy a vast range of academic disciplines. These include a number of subjects under the umbrella of social sciences, notably history, political science, anthropology, sociology, philosophy, policy/development studies and law. Indeed, discourses of the West and its other are fertile sites of interdisciplinary encounters across diverse disciplines, including those on the margins. Such exchanges highlight some of the limitations of disciplinary fixations and disciplinary boundary-marking in subtle and often non-subtle ways. However, no single disciplinary approach can grasp the complexities of the colonial relation and its aftermath. Perhaps nowhere are the foregoing sentiments truer than in the discourse about local knowledge. In this complex subject, the harder you look, the less you see.

From the late twentieth century, local knowledge has become a theatre for viewing the dramatization—literally and figuratively—of aspects of the contemporary

relationships between the West and its other.¹ As a site of analysis of the West's relation with non-Western others, knowledge is also a corollary platform for gauging indigenous peoples' relations with the mainly modern liberal democratic states or pretenders thereto in which they are constituted. Most of these states were born out of empire, conquest and colonialism.

Unsuspectingly, developing countries, including particularly their indigenous and local communities and the latter's counterparts in the industrialized world, have seized the present momentum by deploying "knowledge" as a site for multifarious contestations and resistance (Oguamanam, 2004a). They challenge the derogation and denial of their contribution to knowledge as they seek to explore the opportunity presented by local knowledge for their emancipation in the re-enactment of a historical struggle of colonized peoples all around the world.

Drawing from discourses on indigenous or local knowledge, intellectual property rights, culture, power and politics, this article highlights the various ways in the post-colonial and global knowledge economy in which knowledge is implicated and deployed in the indigenous peoples' engagement with the modern state. It articulates the dilemmas, the contradictions and some challenges that assail indigenous peoples and other loose categories of non-Western others in their bid to use local knowledge to leverage diverse economic, political and cultural interests.

In exploring these webs of challenges, this article nuances the potential of the present focus on local knowledge to yield counterproductive effects. The intensity of indigenous peoples' and local communities' commitment to defending their knowledge and leveraging their overall contributions to the global knowledge basket is a progressive attempt at calling attention to historical and ongoing injustice. However, reflective consciousness over the exploitation of the unique composition of the global custodians of local knowledge and the slippery conceptual frameworks of intellectual property, culture and the politicophilosophical ideals of liberalism to emasculate the campaign for local knowledge are as equally important. Proponents of local knowledge should take seriously the inherent complexities of their cause and strategize on how not to allow those to divert attention from the substantive issues. They should be pragmatic and preemptive to avoid real or potential, albeit nuanced, cultural, legal and political bushwhacks that lurk over their cause.

Local Knowledge: Of Contestation and Resistance

The emergence of local knowledge at the front burner of indigenous peoples' and other local communities' engagement with the state, nationally and internationally, can be rationalized on several theoretical and practical grounds. Not the least of such grounds is contemporary anthropological views of culture and knowledge as well as critical insights from the sociology of science (Ellen *et al.*, 2000; Zuckerman, 1998). Also, equally important are theorizations on globalization that underscore the intermeshing and transformations of knowledge and information across borderless cultural systems (Giddens, 1990; Kymlicka, 1989; 1995; Suoza

Santos, 1995). Collectively, these insights not only question the basis for strict compartmentalization of knowledge systems, ironically they also call attention to the contributions and applications of local knowledge in the new global knowledge economy.

However, in addition to or beyond the theories, there are few direct, albeit overlapping, practical triggers that are implicated in locating knowledge at the centre of the contemporary discourse on indigenous experiences in the national and global transformative processes. The first trigger is the increased concerns in the late twentieth century over the global environmental and biodiversity crisis.² A notable outcome of the ensuing international deliberations on the environment was the strategy of inward-looking into indigenous environment-related knowledge, practices and stewardship, and the cooptation of indigenous peoples into the policy cliché of “environmental sustainability” (Hodgson, 2002, p. 1041). Given the encompassing nature of the environment, this approach helped focus attention on indigenous or traditional agricultural practices, biodiversity and general conservation experience and associated local knowledge.

The second trigger is the radical shift in the life sciences to the deployment of animal, human and plant genetic resources in basic and applied research, especially in health, agriculture, drug production, crime and environmental management and other more general industrial and service applications (Mehta, 2005). This “bio-revolution” is evidenced in the progress of biotechnology—an interdisciplinary endeavour that aggregates the potentials of many conventional life science disciplines. The wealth of local knowledge over endemic biodiversity, including animal and plant genetic resources, is critical to biotechnology. Over 70% of the world’s biological resources are located in local and indigenous communities globally (Oguamanam, 2006a, p. 23).

The third trigger is the computer-driven digital or information revolution of the same era, which is complementary to biotechnology. By facilitating the generation, processing, diffusion, manipulation and application of sensitive information on biological resources, digital technology is intertwined with biotechnology and facilitates the transfer of local biodiversity-related knowledge to Western industrial and scientific complexes, a trend that symbolizes, in part, what some analysts have tagged the birth of the global knowledge economy³ (Chartrand, 2006; Drahos and Braithwaite, 2003).

Developments since the 1990s in international intellectual property lawmaking constitute the fourth trigger. That period marked a paradigmatic shift from the status quo when intellectual property issues which hitherto were the subject matter of national laws and instruments of national and social policy were located to the World Trade Organization (WTO)-supervised international trade regime. As an event and as a process, the entrenchment of intellectual property as a subject matter of trade into the WTO framework via the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) left a sour taste in the mouths of indigenous and local communities as well as in developing countries of the South (Reichman,

2000). Despite coercing developing countries and, by implication, indigenous and local communities to commit to minimum universal standards of intellectual property protection, TRIPS did not accommodate local knowledge. Perhaps, more accurately, the extent to which TRIPS accommodates local knowledge is debatable. TRIPS' disregard for local knowledge translates to leaving several categories of that knowledge form unenclosed and open to unbridled appropriation (Chander and Sunder, 2004). It is a trend that sharply contrasts with how the giant strides in the life sciences and biotechnologies (that rely on the biological resources and sometimes local knowledge of non-Western peoples) are aggressively protected or enclosed as private property in what has been termed the "enclosure movement" of the public domain and international policy space for intellectual property (Boyle, 2003; Yu, 2007).

Collectively, these four triggers provided the impetus for local knowledge holders and their advocates around the globe to embark on a counter-narrative of appropriation, also known as "biopiracy" (DeGeer, 2003; Mgbeoji, 2005; Shiva, 1997). Like protection of local knowledge, biopiracy is now a touchstone for solidarity among indigenous peoples and former colonies in the South (Oguamanam, 2004a) in their resistance to Western knowledge hegemony or what Drahos and Braithwaite (2003) call information feudalism. Remarkably, that counter-narrative has yielded significant regime shifting in international intellectual property and local knowledge discourses to multiple arenas including biodiversity conservation and the environment; health, access to drugs and human rights; and agriculture and food security (Helfer, 2004; Oguamanam, 2006b; Okediji, 2004; Yu, 2004).

Perhaps the source of conflict in TRIPS between the developed or industrialized countries on the one hand, and indigenous and local communities and developing countries on the other, is not so much what TRIPS did as what it did not do. That singular omission continues to drive discussions around intellectual property policy globally and provides the stimulus for resistance by indigenous peoples and local communities. This is so because, in theory, intellectual property is a primary mechanism for allocation of rights over knowledge in general. TRIPS' perceived silence over local knowledge is therefore deafening but nonetheless easy to understand in historical and neocolonial contexts. It would not require a long piece of revisionist history to show that TRIPS reflects the historical legacy of colonial disdain, exclusion, derogation and appropriation as a policy framework for dealing with local knowledge (Arewa, 2006a; 2006b; 2007a; Mgbeoji, 2007).

Local Knowledge in the Hierarchies of Culture and Power

Knowledge and culture are two elusive but fused phenomena; a detailed analysis of their relationship, although desirable, is outside the scope of this article. Any attempt at investigating that fusion confronts an inherent conceptual stalemate. Knowledge thrives in the agency of culture and vice versa. Early modern conceptions of culture were premised on progressive accounts or theories of human

development (Arewa, 2006a; Ivison, 2002). In the popular and conventional versions of this account while Europeans were at the peak, non-Western peoples were located at the lowest rung of this cultural ladder. The West's "other" were mainly depicted in derogatory terms such as wild, primitive, undomesticated hunter-gatherers, savages and barbarians who were in dire need of civilization and transformation into decent or modern societies (Arewa, 2006a, p. 35; Stocking, 1982). Indeed, "[t]he rise of biological and evolutionary theory by the end of the eighteenth century" only helped to consolidate the linkage "between the superiority of European culture and the cultural (racial) inferiority of other peoples" (Ivison, 2002, p. 35). It also provided the basis and justification for political domination in all its coloration (Arewa, 2006a, p. 43),⁴ including the messianic assumption of the white man's moral burden, that is to bring civilization to the God-forsaken ends of the world (Mgbeoji, 2007; Oguamanam, 2004b).

For the most part, in the eyes of Europe, human development was premised on the assessment of the worth of different cultures and their sense of civilization in relation to European values (Ivison, 2002). For example, in the observation of anthropologist Carlo Severi (1998, p. 215), "when the cultural contact happens under the control of Western religions, we call it "syncretism"; when it escapes it, we call it "blasphemy"". ⁵ According to Duncan Ivison (2002, p. 35), "[e]ven when the emphasis on the proper development of mankind was modified in favour of some form of comparative relativism, there was still a tendency to see primitive or non-Western cultures as existing in a kind of exotic cultural aspic, either to be preserved or "helped" into modernity".

It is quite logical and hardly surprising that emboldened by the mindset of its cultural (racial) superiority, Europe treated indigenous and other non-Western cultures and local knowledge practices with derogation, especially in the colonial project. According to Arewa (2006a, p. 43), the entrenched hierarchies of cultures that located non-Western peoples at the dregs "were ultimately linked to the nineteenth century global hierarchies of power".⁶ These power dynamics were serviced by imperial and colonial structures that facilitated the appropriation of economic values in local knowledge of colonized peoples, for instance through the colonial division of labour.⁷ The uncivilized European others were depicted as incapable of intellectual engagement or output in their dealings with the natural resources around them. That claim took the appearance of an evident truth with the advent of the industrial revolution. The accounts of the origins of various regimes of intellectual property rights trace the phenomena to Europe, understandably, without any mention of knowledge protection regimes in other civilizations (Mgbeoji, 2003; Mossoff, 2001; Yu, 2006). Intellectual property and, in some cases, classic property regimes in the colonies were mere extensions of what existed in the colonial powers. After all, before the European encounter, indigenous territories were *terra nullius*, and when a people were colonized, their resources, knowledge systems and ways of life were not exempt (Smith, 1999). Because indigenous peoples operated outside the market economy, their economic system was perceived as inefficient and

in urgent need of abrogation and substitution with a civilized economic model (Martin and Vermeulen, 2005).

Early attempts at the internationalization of intellectual property excluded all but the colonial powers (Bently, 2005; Sherman and Bently, 1999). Not surprisingly, indigenous peoples and the far-flung colonies were not involved in the process of adoption of initial key international intellectual property treaties, namely the Paris and Berne Conventions of 1883 and 1886. In this regard, again, Arewa (2006a, p. 45) notes that “[h]ierarchies of power reinforced the exclusion of local knowledge from the global intellectual property framework, partly by replicating and continuing the exclusion of representatives of the vast majority of the world’s population from the negotiating table”. For example, it was only after the Second World War, when most of the former colonies became independent, that they began to introduce indigenous and local knowledge-sensitive issues that diverged from the strategic interests of the colonial powers to the intellectual property debate. Notably, India championed the 1971 revisions of the Berne Convention to allow for the protections of folklore by member states (Arewa, 2006a, p. 45; Bently, 2005). In recent times, frontline countries of the South, notably India and Brazil, continue to articulate alternative voices for an equitable global intellectual property regime.

TRIPS’ silence over local knowledge is therefore consistent with a historical pattern that reflects the exclusion, derogation and relation of local knowledge within the matrix of colonial culture and power hierarchies. It is interesting that the debate over folklore (which is not the subject of this article) has continued in different incarnations and transformations in international intellectual property and cultural policy fora to the present day. In recent times, the debate has crystallized in at least four symbolic but overlapping contexts, namely, the continuing consultations over the revisions of 1982 United Nations Educational, Scientific and Cultural Organization–World Intellectual Property Organization (UNESCO-WIPO) Model Provisions for National Laws on the Protection of Expressions of Folklore Against Illicit Exploitation and other Prejudicial Actions, the 2003 UNESCO Convention on the Safeguarding of Intangible Cultural Heritage, the ongoing deliberations at WIPO’s Intergovernmental Committee on Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore (IGC) and at the activities of the United Nations Convention on Biological Diversity (CBD).

European self-location at the pinnacle of cultural hierarchies and its positioning of non-European others at the bottom provided the basis for its derogation and appropriation of local knowledge. This historical interplay of hierarchies of culture and power, especially in the colonial and the post-colonial projects, has inadvertently made the legal and policy treatment of local knowledge a flashpoint of tension and resistance and one that irresistibly conditions for a revisionist history of colonial relations. As indigenous peoples and local communities challenge the derogation, relegation, exclusion and appropriation of their knowledge, what are some of the conceptual and framing issues that threaten to subsume and conflate

the local knowledge debate? In the next section I broach a few of those issues and how they are implicated in the various counter-narratives in the extant struggle for local knowledge and their ramifications for indigenous and local communities' relations with the modern state.

The Terminological Trap

Any serious discourse of local knowledge with regard to indigenous and local communities in the context of the historical relations of power and culture between the West and its other, is akin to walking a battlefield littered with academic landmines. Already, in the above paragraphs, I have *deliberately* thrown in terms and phrases in random fashion and drawn on usages and words that provoke the interrogative instincts of a discerning reader. It is the norm that the majority of writings on this complex subject devote substantial effort to the clarification of terms (e.g. Brush and Stanbinsky, 1996; Ellen *et al.*, 2000; Oguamanam, 2006a). Without doubt, clarification of key terms is congruous to analytical integrity and guards against misleading assumptions. In some contexts, however, it may portend some form of red herring or escapist expedition from the substantive question, especially if every given phrase or term is a contested one.

The rank of contested terms includes the following: indigenous, traditional, local, folk, etc., as well as their diverse uses in conjunction with a myriad of prefixes. More elaborate analyses probe the often contested demarcation of ranges of such knowledge frameworks into subcategories premised after the yet contested Western disciplinary and pedagogical conventions, such as ecological, biological, musicological, agricultural, botanical, environmental, etc. or their "ethno"-compounding. Similarly objectionable are the conceited assumptions that underlie such practices (Battiste and Henderson, 2000, p. 38). Other contested terms include indigenous peoples, aboriginal peoples, first nations, native or original peoples, local communities, developing countries, industrialized or developed countries, the West, North and South—those are not directly addressed in this article.

The contestation over the appropriateness of the terms in the first enumerated categories above reflects attempts to both resist and disburden them of their derogatory connotations in the colonial hierarchies of culture and power. Equally, it nuances the dichotomization of interests in the rank of claimants. Also, it represents an attempt to re-characterize the nature of such knowledge forms as dynamic and progressive in accordance with contemporary legal, sociological and anthropological insights. For non-Western peoples, in the campaign for the recognition of their knowledge in the context of their relationship with the modern state, the characterization of that knowledge is a crucial site for resistance. For instance, according to the Four Directions Council (FDC), a Canadian First Nations organization, "[w]hat is traditional about traditional [or indigenous] knowledge is not its antiquity but the way it is acquired and used . . . much of the knowledge is quite new, but it has a social meaning and legal character, entirely unlike the

knowledge indigenous people acquire from settlers and industrialized societies” (Four Directions Council, 1996).

Among anthropologists, legal scholars and analysts in general, it is the norm to justify the choice of one or the other of the diverse prefixes to knowledge in their analyses (Arewa, 2006a; Blakeney, 2000; Ellen *et al.*, 2000; Oguamanam, 2006a). Even though for the most part there is a tendency to conflate the use of such prefixes, attempts at distinguishing them are driven by subtleties of exclusion and inclusion and boundary marking in relation to the legitimate claimants to specific knowledge forms as between two equally contested categories: indigenous peoples of the enclave territories and local communities of the Third World. For instance, Arewa (2006a, p. 7) notes that “[l]ocal knowledge is more strongly associated with countries in the Third World as well as indigenous peoples in the Third World and the West”. Elsewhere, I have remarked that “[t]he term “traditional knowledge” is persuasive chiefly because of its non-limiting nature and its deflection of controversy over indigeneity” and argue that the “preference [for traditional knowledge over indigenous knowledge] is based on its depiction or characterization of the “other” in contradistinction to the dominant culture. It facilitates a less divisive reference to the world’s disempowered peoples who share a near common experience and for whom the knowledge question provides a rallying point for survival” (Oguamanam, 2006a, p. 24). These two approaches are clearly inclusive. The inclusive approach appears to be endorsed by the CBD through the recurring association of knowledge in its text with an elastic phraseology: “indigenous and local communities”.⁸

On the other hand, in a clearly exclusive approach, anthropologists Ellen *et al.* (2000, p. 3) argue that “[t]hose to whom we attribute indigenous knowledge must be indigenous peoples . . .”. But, they acknowledge that the terminological morass inherent in that claim implicates “a veritable semantic, legal, and cultural mine-field” (Ellen *et al.*, 2000). In an apparent attempt to mediate the conflation of terms while not completely disclaiming this exclusive approach, WIPO declares that indigenous knowledge fits into the traditional category, but that traditional knowledge is not inherently indigenous. WIPO’s position is that indigenous knowledge is a subset of traditional knowledge that applies to indigenous peoples (World Intellectual Property Organization, 2001, p. 23). There is a conceptual fluidity that melds attempts at strict dichotomization of indigenous, traditional, local, etc. knowledge forms.

The exclusive and inclusive conceptual framework for knowledge analysis has direct impact on two constituent claimants. Ironically, the issue of accurate articulation of those claimants provides an entry point into the next terminological trap, namely how to define indigenous peoples and other subset references within peculiar national contexts like Canada, the United States, the Australasian subcontinent and elsewhere. The subtle peculiarities of those national contexts will not detain us here. Internationally, an acceptable definition of indigenous peoples has proven elusive. Bold attempts under treaty (such as the International Labour

Convention No. 169 of 1989) and by scholars (e.g. Anaya, 1996; Cobo, 1986) to define indigenous peoples vacillate between extremely under-inclusive conceptions and overly inclusive configurations (Wiessner, 1999). References to criteria of colonization, conquest, domination, cultural distinctiveness, continual affiliation with pre-invasion and pre-colonial societies, geographical locations, etc. have proven to be inconclusive in the definition of indigenous peoples (Oguamanam, 2006a, pp. 20–2; Wiessner, 1999). In this regard, Daes (2001) argues that a precise definition that accommodates the historical experiences and checkered political trajectories of indigenous peoples globally is not feasible. For Arewa (2006a, p. 12) a group's indigenous status or claims thereto is context dependent. Similarly, De Koning (1999) surmises that an attempt to define indigenous peoples may be counter-productive as it essentializes and marginalizes them, and shifts attention from the real issues.

The other logical claimants to knowledge who are implicated in the inclusive or exclusive definitions are in some ways an open-ended category. They are depicted in a more neutral term, namely “local communities”—a term that, like “indigenous peoples”, assumes a non-literal meaning. Loosely speaking, they are mainly colonized peoples of the global South presently found within the borders of countries now classified under neo-liberal economic standards as developing countries. Whether they are recognized officially as indigenous or not, most of the present inhabitants of these countries were subjected to colonialism. As presently constituted, in the modern system of Westphalian liberal democratic independent states, which assume the agency of their constituent populations, there is a discernible similar lack of unity of purpose between the ruling elites of the states and their indigenous/local populations to the experience of indigenous peoples in the developed countries of the West (Dove, 1996). However, the overall divergence of interests between these states and the rest of the colonial powers and the new industrialized states in the international arena readily subsumes the complexly layered compositions of developing countries in the international arena.

The short point here is that the discussions about local knowledge are riddled with terminological traps at almost every turn. There is no intention here to undermine the significant, albeit academic, subtleties inherent in the uses of these contested terms. However, undue concentration of analysis on these slippery and, characteristically, inexact terms translates to little or no practical consequence. Such an exercise threatens to divert attention from the substantive issue of the historical burden of the colonial relationship of power and the cultural hierarchies that historically marginalized, and continue to marginalize, non-Western peoples and their contributions to progress and human development.

Dichotomization: Futility and Dangers

There are two important but related questions. First, should the dubious distinction over knowledge forms be credible grounds for effective dichotomization or, in the alternative, what is the basis for the isolation of indigenous knowledge from the rest

of the non-Western knowledge framework? Second, what is the essence of dichotomization of claimants to local knowledge?

Having characterized the strict distinctions over local knowledge forms as dubious, it is difficult conclusively to answer the first question in the positive. In the hierarchies of culture and power discussed earlier, the West's other were differentiated on the basis of their cultural distinction in relation to Europe. Without doubt this is a questionable premise. However, insofar as it alludes to the loosely identical cultural and general worldviews among non-Western peoples, it has some merits. This distinction is analogous to the convenient and yet contested separation of formal science from informal or local knowledge systems (Johnson, 1990; Oguamanam, 2006a). Such distinctions are often based on the non-conclusive and yet ambiguously overlapping attributes of those two knowledge frameworks.

There is no doubt that at virtually all points in history, peoples of the West have been subject to different cultural and historical experience; the same is equally true of the West's other. Thus, the myth of cultural homogeneity applies to the West as well as its other.⁹ Nonetheless, the commonality of worldviews in relation to the West of cultural traditions of non-Western peoples conditions for an analytical, albeit convenient, categorization of their knowledge forms (subject of course to variations). Categorization of knowledge systems is an unfashionably controversial adventure many are backing away from. Safe to say, it is hardly an absolute exercise. Evidently, the reference to the FDC speaks of difference(s) in indigenous ways of doing things in relation to the knowledge acquired from European settlers and the industrialized societies. Insofar as indigenous and other non-Western peoples identify some common distinguishing features or attributes of their knowledge, their cultural practices represent the site for local or so-called non-cosmopolitan knowledge, especially in relation to Western scientific paradigms¹⁰ and their questionable pretension to universalism. Part of the shared distinguishing feature of non-Western peoples' knowledge forms in relation to industrialized societies is the peripheral treatment or exclusion of local knowledge in the conventional intellectual property regime (Arewa, 2007a, p. 9).

Perhaps most important is that in most indigenous and non-Western populations, knowledge is largely an experiential process in which a direct relationship with and dependence on the natural environment is the norm. It does not matter so much that such a norm continues to be threatened by rapid globalization of culture and trafficking in knowledge. Local knowledge or indigenous knowledge defies an accurate or comprehensive definition (Battiste and Henderson, 2000, p. 41). But a sustained consensus is that it is generated mostly and driven by cultural and ecological relations, distinct belief systems and worldviews. It results from these sophisticated relationships in a culturally driven and complexly layered and contested "scientific" experience (Cajete, 1999). It is "a complete knowledge system with its own concepts of epistemology, philosophy and scientific and logical validity" (Battiste and Henderson, 2000, p. 41). It is characterized by limited

mechanical, industrial or *formal* scientific mediations of the Western industrialized societies. In sum, the conceptual attempt to dichotomize indigenous knowledge from the rest of the non-Western bloc is an inelegant approach. It diverts attention from the substantive issues in the debate over local knowledge.

In the second question lies perhaps the real issue behind the fact of dichotomization. It requires a nuanced answer that is both sensitive to the constitution and diverging priorities of claimants to local knowledge, as well as recognizing the propensity of such distinctions to divert attention from common interests. Custodians of local knowledge share identical historical and political experiences especially under colonialism and, to some degree, in the post-colonial arena. However, the different trajectories of that experience, and the dynamics of indigenous peoples' contemporary relationships with modern states, condition for different priorities in the post-colonial landscape. Thus, there is a divergence of interests in the way local knowledge is used by its custodians to negotiate relationships with modern states at both national and international arenas (Arewa, 2006a; Coombe, 2001, p. 277; Oguamanam, 2004a).

For example, three quarters of global bioresources are found in gene-rich countries of the South, which is also home to about 75% of the world population. According to the United Nations, indigenous peoples of the enclave territories are estimated at about 300 million or 4% of the global population (Oguamanam, 2006a, p. 23). For this category, which in many cases constitutes a less significant percentage of their national population within the post-colonial states, the issue of local knowledge is critical to their self-identity, cultural preservation and survival, as well as constituting aspect of their self-determination as a people. Their lands, ancestral territories, resources and ways of life have been directly under sustained threats "by colonial and postcolonial state interventions, capitalist industry and other incursions" (Hodgson, 2002, p. 1041).¹¹ Only in a few isolated or scattered cases in the countries of the South do segments of the population directly fit this profile.¹²

On the other hand, the current tempo for local knowledge in the developing countries of the South is approached primarily as a matter for mainly leveraging economic interests that attach to their mega-biodiversity rich status (Coombe, 2001). The dominant argument for cultural survival by indigenous peoples in the West is in part premised on their feared extinction or cultural decimation. In virtually all cases indigenous peoples double as minorities within the modern states.¹³ The urgent attempt to use knowledge as an instrument for cultural survival and for the negotiation of political relations of self-determination does not have the same resonance in the South that it has with indigenous peoples elsewhere.

Political independence was extended to most of the countries of the South around the 1960s, an exercise that excluded indigenous peoples of the enclave territories. This singular development, which is referred to as the Blue or Salt water doctrine in international law, marked a divergence of interest at the international level in the priorities and, to some extent, overall circumstances of colonized peoples

(Oguamanam, 2004a; Wilmer, 1993). The struggle of indigenous peoples of the enclave territories prioritized political objectives of self-determination as a multiple relational, as opposed to an end-state or separatist, process (Daes, 2001). For their counterparts elsewhere, having secured political independence, the focus of decolonization shifted. In addition, the concentration of biological resources and attendant local knowledge in the South and their economic significance in the era of biotechnology crystallizes the interest in developing countries to use local knowledge to leverage economic objectives, seek regional political clout and other opportunities.

Even where differences in the objective for protection of local knowledge are not driven by the foregoing considerations, stakeholders often have varied goals, approaches and expectations from local knowledge protection (Davis, 2003). The range of goals includes access to financial proceeds from products embodying local knowledge, preventing inappropriate exploitation of sacred or secret cultural processes, products or symbols and the desire to control attribution of sources of valuable local knowledge (Arewa, 2007a, p. 24). In some other cases, the pivotal objective is defensive—to thwart the appropriation of local knowledge by second comers who take advantage of gaps in the prevailing intellectual property regime. Invariably, stakeholders' objectives may be determined by the type of local knowledge at issue.

These divergent approaches and objectives have implications for how different stakeholders engage with the debate over local knowledge. Also, they often constitute sources of dilemma regarding the strategic choices or options for the custodians of local knowledge in a way that exposes the case for local knowledge to counter-narratives. This trend plays into the hands of diverse interests that benefit from the subjugation of local knowledge. A few illustrations can be made from both strict legal and fused cultural analytical frameworks as well as from aspects of liberal democratic ideological critique of the discourse about local knowledge.

Legal Framework

The principal legal platform for knowledge protection in the West is intellectual property rights. Through colonial relationships of power and neo-liberal economic frameworks, Western intellectual property is now the subject of a global application pursuant to the WTO TRIPS Agreement. But that has not been without resistance of some sort. In its different and ever-expanding regimes, intellectual property supervises the allocation of rights, benefits and sometime responsibilities incidental to claims over knowledge, its products and its applications. I have noted that the historically rooted exclusion of local knowledge from intellectual property as evident in TRIPS has decentralized the locus for such resistance. But the real issue is not the recent and earlier omissions of local knowledge or folklore from treaty documents. Rather, the fact that both legal and conceptual frameworks for intellectual property and the general nature of local knowledge have been difficult to reconcile remains

problematic (Drahos, 2000; Farley, 1997; Roht-Arriaza, 1996). This singular issue has polarized the debate over local knowledge and intellectual property.

Without doubt, there are many credible arguments to be made on the nature of intellectual property in relation to local knowledge. With regard to the patent regime, for example, the overlapping criteria of originality, inventiveness, human ingenuity, obviousness, newness, product of nature, individual as opposed to community focus, etc. have been invoked to exclude local knowledge from intellectual property protection (Jaszi, 1991; Mgbeoji, 2001). Similar sentiments obtain in relation to copyright, especially with regard to the requirement of writing and fixation (Farley, 1997), and lately the extent and nature of cultural claims (Arewa, 2007a; Brown, 1998). In the trademark arena, indigenous sacred cultural symbols are often appropriated for contested meaning-making constituting a site of asymmetrical power relations and resistance (Coombe, 1998).

Most of these exclusionary criteria do not stand up well to scrutiny and are premised on over-generalized notions of local knowledge and questionable assumptions about intellectual property. In addition, the evolutionary and instrumental nature of intellectual property provides equally credible bases to fault the exclusion of local knowledge from the intellectual property framework (Mgbeoji, 2001; Sherman and Bentley, 1999).

But a number of factors continue to lend dubious credibility to the façade of the irreconcilability of intellectual property with local knowledge. They include, first, the lack of political will by industrialized countries that benefit from continued appropriation of local knowledge. The second is the suspicious notion of the epistemic divide between formal scientific or industrial approach to knowledge generation on the one hand, which is fostered by intellectual property (especially through the patents procedure), and the informal process of local knowledge on the other. The third is the asymmetrical relationship of power between industrialized powers and custodians of local knowledge and the lack of political and economic clout on the part of the latter to press for the integration of local knowledge into intellectual property processes or to modify the conceptual framework of intellectual property. Fourth, intellectual property is seen as a capitalist instrument and is not suited to societies that operate in a mainly communal model outside or on the fringes of the contested paradigms of the market economy framework (Oguamanam, 2004c). The fifth is the fear of potential epistemic transposition, co-option or subsuming of local knowledge into Western science under the intellectual property framework (Agrawal, 1999). The last point is fast losing favor with contemporary views in anthropology and the sociology of science.

These supposedly uncomfortable relationships between intellectual property rights and local knowledge provide the impetus for several propositions generally classified as *sui generis* (intellectual property) options for local knowledge (Halewood, 1999). Some of the propositions include variegated reward schemes for local knowledge even if they fall outside the intellectual property process. For custodians of local knowledge in developing countries, there is almost a no holds barred

approach in the pursuit of intellectual property and other economic-driven options for rewarding local knowledge. This is especially so in the areas of traditional medicine, agriculture and pharmaceutical production. For example, there are outright attempts to obtain local knowledge-related patents or to seek other forms of economic-based contractual incentives to every conceivable form of local knowledge or resources of economic value.

On a comparative level, indigenous peoples of the enclave territories are more likely to approach the intellectual property option with trepidation and suspicion. For instance, despite occasional dissonance, notable position statements of indigenous peoples at different fora on the relationship between their knowledge and intellectual property warn of the adverse potential of the intellectual property rhetoric to the indigenous cause (Oguamanam, 2006a, pp. 153–4). Remarkable areas of concern include intellectual property's potential to undermine the integrity of indigenous knowledge and the sanctity of indigenous cultural practices. Equally, of some apprehension is that, as a commoditization process, intellectual property potentially jeopardizes institutionalized secrecy (Posey, 2002) and access thereto, as well as undermining exclusive privileges of cultural membership¹⁴ and ultimately indigenous aspiration to cultural self-determination. Here, there is a tendency, informed by survivalist necessity to resist unbridled valuation of knowledge and culture on a strict economic scale of values via the intellectual property process. For the most part, this sentiment contrasts with the trend in developing countries.

For example, recent initiatives regarding the documentation or digitization of traditional medicinal practices are championed mainly by developing countries.¹⁵ This is chiefly an anti-biopiracy policy as well as a strategy to exploit opportunities for joint ownership of intellectual property with foreign seekers of local knowledge (Gupta, 2007; Krumenacher, 2004). This approach has the inherent potential to decontextualize the process of local knowledge generation and to strip it of its cultural content. Also, it draws local knowledge fully into formal scientific processes and consequently facilitates their co-option into the conventional intellectual property process (Agrawal, 1999; Yano, 1993). Yet developing countries are determined to pursue this option mainly because of its economic promise. This is quite attractive albeit in the interim, perhaps, since the urgency of cultural survival and cultural self-determination in developing countries is not as intense in comparison with indigenous peoples of the enclave territories and elsewhere. The important point here is that there is an apparent dilemma with regard to what end or extent local knowledge custodians are prepared to apply intellectual property frameworks. The different historical exigencies and factors of present political and economic priorities influence the apparent divergences in the approaches custodians of local knowledge seem to have taken.

Cultural Framework

Renowned anthropologist Michael F. Brown, in a celebrated 1998 article, calls for reflection on the danger of legal schemes being placed at the disposal of indigenous

peoples to control or resist cultural appropriation. He decries specifically the tendency by many in the rank of legal scholars, native activists, anthropologists and those he calls romantic social critics to lend support to indigenous peoples to copyright ideas, as opposed to the latter's tangible expressions, and to claim cultural property rights *ad infinitum* over some cultural heritages.¹⁶ In his view, this trend amounts to radical expansion of the notion of copyright and "ignore[s] the broader crisis of intellectual property rights and the already imperiled status of the public domain" (1998, p. 193). In general, he expresses skepticism over indigenous peoples' claim to cultural property rights or copyrights in their cultural objects in museums or other public places, and in their knowledge.

While appreciating the attraction of framing indigenous demands in terms of copyright and a broadened definition of cultural property, Brown is not persuaded because of their implication for the enclosure of the public domain. Brown's is not a lone voice of concern over the adverse and broader implications of intellectual property and cultural propertization of indigenous or local knowledge both on its claimants and on the public domain (e.g. Arewa, 2007a; 2007b; Osborne, 2003–4; Sunder, 2000¹⁷). Specifically, however, indigenous peoples' willingness to deploy the revisionist arguments of cultural appropriation under colonialism to lay claims and set terms of access to cultural properties in the museums and elsewhere does not find favor with Brown.

He draws from contemporary theoretical developments in anthropology to argue that "culture is not a bounded static entity but a constantly renegotiated process". In the post-modern environment, Brown (1998, p. 196) avers, the "processual nature of culture" gives rise to "creative mixing ("creolization") or invention of traditions" that does not stand up to the discredited static concept of culture from which contemporary anthropologists are now backing away. In his view, there is an apparent clash between the indigenous and cosmopolitan view of culture such that the indigenous appeal to intellectual property in relation to local knowledge ignores that there are no clear-cut spatial and temporal boundaries for the demarcation of culture and knowledge. Sociologists of science are wont to make similar arguments in relation to local knowledge and *formal* Western science (Ellen *et al.*, 2000; Zuckerman, 1998). Yet the role of Western science and intellectual property in impoverishing the public domain does not seem to attract a more urgent call for reflection over our doomed public domain. In essence, Brown considers attempts to extend intellectual property to local knowledge to be flawed in many respects. Of specific interest to him is that such initiatives have the potential to freeze up or, at best, constrain the fluidity of information and enclose the public domain in ways that are antithetical to the theoretical underpinnings of both culture and intellectual property rights.

Contrary to the overall impression of Brown's thesis, the elusive conceptual quagmire around the phenomenon of culture and the fluidity of information exchange or borrowings across knowledge systems does not in and of themselves dissolve legitimate claims to cultural spaces. Nor do they account for the dissolution

of cultural identities in absolute terms. The discrete and autonomous notions of culture may be obsolete, but the processual emergence of a cosmopolitan cultural and epistemic regime is an affirmation of the existence and, to some degree, the vibrancy of the insular cultural locale that is critical in sustaining our postmodern cosmopolitan cultural world (Hannerz, 1990; Kymlicka, 1989; 1995; Sousa Santos, 1995, p. 264¹⁸; cf. Waldron, 1995).

Indeed, in the extant information technology and globalization era, the traffic of knowledge and information from indigenous and local communities to the cosmopolitan arena is self-evident. For example, in diverse epistemic sites, ranging from music, medicine, phytomedicine, pharmacology, arts to agriculture and environmental management, insights from local knowledge have continued to feed hi-tech activities, including digital and biotechnologies. Indigenous and local communities' interest in seeking reward, protection, recognition and control or otherwise wanting to be active participants in the debate about their contribution to processual evolution of knowledge and culture needs to be carefully distinguished from the cultural propertization debate. Such aspiration is not necessarily a threat to a vibrant public domain. Neither is it, on its face, antithetical to the culture of borrowing, which is an important ingredient for progressive generation of knowledge in a processual and cosmopolitan cultural world (Arewa, 2007a; 2007b; Sunder, 2000). Contrary to the impression by Brown, the housing of sacred indigenous cultural properties in Western and Western-style museums should not be taken as their only gateway to the public domain. In the public domain there are many publics, not the least of which are such publics as may be determined by indigenous or traditional customary access regimes. Indigenous and local communities have the capacity and legitimacy to determine terms of access to sacred cultural objects and general issues around sacralization of their cultural forms.

Similarly, while the tendency by segments of indigenous and local communities to exercise rights over their cultural properties on an indefinite basis is antithetical to term limits and broader policy considerations of intellectual property, recent developments in patent and copyright jurisprudence show a progressive extension of the terms of those rights under legislative, judicial and industry connivance (Crews, 2005). Surely, the public domain is imperiled. But local knowledge is among the first casualties of our imperiled public domain. Its custodians, the indigenous and local communities, have only joined the debate belatedly. To make them the scapegoats of our imperiled public domain is perhaps an uneven approach to a complex problem. That approach echoes the colonial hierarchies of culture and power that have historically subjugated indigenous and local knowledge.

The beauty of Brown's argument is that it can be "appropriated" by indigenous and local communities in support of their opposition to the radical and unidirectional enclosure of their contributions to the basket of knowledge. Especially, this is relevant in regard to the application of information or insights from them in biotechnology-related inventions in agriculture, pharmaceuticals and other industrial applications and sites of knowledge transmission. If indigenous claims to

intellectual or cultural property constitute a threat to the public domain, how much more of a threat is the patenting of information or insights from the local peoples by second comers to the indigenous cultural process? This is even so because hitherto, rightly or wrongly, such insights have been treated as being within the sphere of common heritage and as part of the public domain. While the “postmodern realities of globalization, transnational flows and creative mixing” depict culture as “a dynamic and constantly renegotiated process” (Brown, 1998, p. 126), it also demonstrates the competition for cultural or knowledge transfer, transposition, enclosure and appropriation along contested directions.

Because of the rapid transformation in the generation and manipulation of information, in the contemporary global knowledge economy, greater amounts of insight from local knowledge have been “creolized” in or meshed into Western industrial and scientific complexes than perhaps any other time in modern history. If the attempt by indigenous and local communities to tap into intellectual property threatens to shrink the public domain, it will be perhaps by far less magnitude than the continued enclosure of the public and policy space through the constant expansion of intellectual rights claims, especially in the bio- and digital environment (Boyle, 2003; Yu, 2007). But, as they say, hardly would two wrongs make a right. Indeed, the last four decades have witnessed the enclosure of the public space by private proprietary claims (Chander and Sunder, 2004; Drahos and Braithwaite, 2003; Lessig, 2003; Maskus and Reichman, 2004) and by a re-conceptualization of intellectual property rights that paves the ground for the scramble for indigenous knowledge forms hitherto in the public domain.¹⁹ The belated and inchoate response of indigenous and local communities is only a reactionary attempt at cultural self-preservation and economic justice.

The contemporary anthropological thinking on the issue of knowledge and culture foists a compelling and corresponding re-thinking of intellectual property jurisprudence that indigenous and local communities have historically called for. If culture is a dynamic and negotiated process, it then means that insofar as all of us—the West and its other—are partners in the processual nature of knowledge and cultural evolution, we must also be joint stakeholders and claimants in the accruing rights to knowledge. We need an intellectual property regime that facilitates or mediates an equitable negotiation of that process for all stakeholders. Therefore, the challenge of intellectual property in a cosmopolitan cultural world is to secure for each contributor to the multiple and complexly layered basket of knowledge adequate recognition and reward for their contribution. Because of the diverging interest, objectives and approaches of the custodians of local knowledge to its protection, intellectual property is not necessarily the only option (Drahos, 1997). For instance, the skepticism of indigenous peoples of the enclave territories over intellectual property is already noted.

Beyond directly importing intellectual property into local knowledge, there are other options for indigenous and local communities to negotiate around their cultural and knowledge practices in flexible ways that accommodate their diverging

priorities. In recent times, access and benefit sharing (ABS) and other contractual frameworks for the exploration of local knowledge between indigenous and local communities and second comers are as diverse as there are such communities, specific projects, collaborating industries, universities and other research organizations (Dutfield, 2000).²⁰ Criticisms of these initiatives are not lacking (Rural Advancement Foundation International, 2002). For the present purpose, it is sufficient to mention that these arrangements are fraught with a significant crisis of legitimacy for these intermediaries (which also include lawyers, ethnographers, ethicists, and academic and applied researchers) and the propriety of their agency as brokers of indigenous resources in negotiating or mediating access to and translation of local knowledge. For example, the intermediaries' role when there are cross-cutting or different claims to local knowledge on a particular piece of genetic material or expressive culture by more than one indigenous or local community or other actors may be quite significant and problematic (Barnes, 1998; Brown, 2003).²¹ More so would be the challenge this scenario poses for ABS protocols (Dutfield, 2007). The majority of these intermediaries and sponsoring or processing institutions are foreigners to indigenous and local communities. They operate within historically entrenched gaps in cultural hierarchies of power consciously and unconsciously exploiting them in interpreting, transcribing and analysing local knowledge in ways that ultimately influence the allocation of rights and determination of boundaries of claims thereto. According to Cory Hayden,

The ethnography of [bioresource] prospecting [in indigenous and local communities] is, primarily, an ethnography of science: it treats scientific research practices as key points of entry into prospecting play of resource extraction and compensation ... researchers are both mediators of and participants in this international collaboration, and their research practices are crucial sites of political negotiations. When ... ethnobotanists collect plants, they are also collecting benefit recipients, when the ... chemists test collected plants for industrial potential, they are also helping to broker new kinds of distribution of industry mediated "value" ... routine decisions about which plants to collect, or what kingdom to scan for potential value, become inextricably laced with the explosive question of who shall become the "beneficiaries" of a new international politics of biodiversity entrepreneurialism and on what basis ... benefit-sharing contract transforms and is transformed by scientific research practices and relations between scientist and local people—urban plant vendors, indigenous collectives, rural collectors—whose interests they now represent (2003, pp. 6–7).

The diverging priorities of segments of indigenous peoples and local communities in the discourse on local knowledge are crucial to the way such knowledge is represented in the cosmopolitan epistemic environment. Thus indigenous and local

communities have a challenge to determine the nature of their relationship with the intermediaries such that their own narrative of their knowledge system is not subsumed or supplanted by extraneous considerations and by sophisticated and yet less knowing intermediaries.

Liberal Democratic Framework

Aspects of indigenous and local communities' claims to and demands in relation to local knowledge are perceived as being in conflict with liberal democratic principles and ultimately antithetical to indigenous interests. Specifically, the demand for restricted access to information about local knowledge and customary secrecy regimes thereto are said to "contradict the ideals of Western liberal democratic principles" (Brown, 1998, p. 198). That ever-slippery politicophilosophical ideology is eulogized over its foresight or experience or both in recognizing that institutionalized secrecy is a recipe for abuse of power. Hence, a crucial aspect of liberal democracy is guaranteed access to information under carefully negotiated restrictions.

Intellectual property rights claims are circumscribed by aspects of those negotiated restrictions recognized under liberal ideology such as term limit, research exemption, fair use allowance, compulsory licensing and other exemptions dictated by social policy considerations to mention a few. There is then a presumption that if protection of local knowledge is channeled via conventional intellectual property, it will be less susceptible to the dangers of institutionalized secrecy or unmitigated tendencies that are incongruous to liberal democratic ideals. The erroneous presumption is that the principal goal of intellectual property accords with liberal democratic ideals in ensuring that information or knowledge efficiently enters the public domain without compromising creators' entitlement to financial or other benefits from their original works (Brown, 1998, p. 196).²² On the contrary, intellectual property inherently imposes artificial scarcity over information and knowledge. In the knowledge economy, intellectual property is extremely pliable to retard the transformation of information to the public domain. Today, it constitutes a resounding threat to access to information and efficient management of resources in liberal democratic and neo-liberal economic systems (Heller and Esienberg, 1998; Lessig, 2003; Mgbefji and Allen, 2003).

Similarly, there is also an erroneous presumption that when intellectual property collides with key principles of liberal democracy, such as free speech or human rights in general, the latter will prevail (Brown, 1998, p. 196). That optimistic claim is perhaps an idealist appeal to a theoretical expectation. The radical extension of intellectual property to virtually all spheres of culture and knowledge and the consequential enclosure of the public domain empower private proprietary interests over moderating considerations whether rooted in liberal democracy or general public policy. For instance, the human rights implications of pharmaceutical patents with regard to drug access, and the resulting public health care crisis in indigenous and local communities in developing countries and

elsewhere is indicative of where the balance has tilted (Eppich, 2002; Gathii, 2002). Even more revealing is the extension of intellectual property to human cell lines and human DNAs, even those of isolated indigenous communities under the threat of extinction (Amani and Coombe, 2005). The short point is that liberal democratic considerations have not influenced intellectual property enough in ways that adequately balance competing considerations or in ways that keep knowledge in the public domain open and accessible. The expectation or presumption that, under conventional intellectual property, claims over local knowledge could not collide with liberal democratic principles is presumptuous and untenable.

When indigenous and local communities seek the accommodation of their local knowledge forms within existing or special protective regimes, it takes the appearance of demand for special treatment that impliedly runs counter to the ideal of equity under liberal democracy. For instance, when they press for restricted access or control of sacred cultural property or knowledge forms, inevitably, in relation to others, this yields a form of discrimination that puts indigenous and local communities on a collision course with liberal democratic principles. With regard to the United States, Brown (1998, p. 198) observes that “Native values and the American legal system are prone to collision over the question of *retroactive secrecy*, the disposition of information that was obtained in the past and had long resided in the public domain”. Should a potential user’s race or ethnicity be used to deny them access to an archived sacred indigenous material or cultural property, Brown (1998, p. 198) argues that “[s]uch selective restrictions would surely qualify as a form of illegal discrimination”.

Similarly, Arewa (2007a, p. 58) warns that “[t]he existence of claims of ethnicity or cultural heritage as basis for compensation may in fact harden ethnic distinctions, potentially further solidify ethnic identity and may in fact play a role in the shaping of ethnic and cultural identity itself”. Particularly, where they have the status of minorities, indigenous and local communities are reminded to be wary of the extent to which they could explore liberal democratic principles to seek accommodation. Their claims and arguments can be readily reversed or corrupted both to exculpate their ongoing predicament under liberal democratic dispensations and to circumvent their entitlements thereto.

Without delving into the trouble with liberalism, the last observation underscores liberalism’s long-standing difficulty and ambiguity in dealing with minority rights, indigeneity and multiculturalism (Kymlicka, 1989; Paine, 1999; Taylor, 1994). From its tainted colonial past to its continued complicity in the hierarchies of culture and power, liberalism has opened up indigenous and colonized peoples to rights discourses on culture, human rights, identity, political sovereignty, justice, property (Iverson, 2002, p. 3), even intellectual property. Part of liberalism’s conceit is that it deploys the agency and framework of the state to impose its ideals on non-Western peoples and societies as universally received wisdom thus subjugating, distorting and marginalizing the cultural and political potentials within those societies (Alfred, 1991). Consequently, liberalism becomes a double-edged sword

and a suspect ideological ally in the hands of indigenous and local communities trapped within the dominant states and institutions of liberal democracy. As politicophilosophical ideology, liberalism's anomalous relations with non-Western peoples makes it a dubious or equivocal partner in support of arguments for local knowledge and other indigenous and local community claims.

Despite its superficial appeal, liberalism is a political expression of one set of cultural values over others.²³ It reinforces the obstacles or coerced universalistic presumptions²⁴ that stand in the way of indigenous and non-Western peoples being effective participants in the global constitutive and transformative processes. Liberalism is pliable to the debate on local knowledge but there is no guarantee as to its outcome. Nonetheless, liberal principles can be deployed to blunt or bushwhack non-Western peoples' long standing expectations from their local knowledge.

Conclusion

Current debates about local knowledge inevitably evoke some degree of revisionist history of colonial relations. Local knowledge is trapped in the hierarchies of culture, power and politics that have historically defined the relationship between the West and its indigenous and non-Western others. As local knowledge becomes attractive in the new knowledge economy, indigenous and local communities have become proactive and, albeit, belated participants in the debate over their contribution to the global knowledge basket.

Despite its strength, the case for local knowledge is not a free ride to the Promised Land for its proponents. A number of factors compel the need for a reflective consciousness about potential or real counter-narratives to indigenous and local communities' claims to local knowledge. First, claimants to local knowledge have to contend with the realities of their diverging historical trajectories, which are factors in the perceived differences in their priorities in, and expectations from the local knowledge project. Similarly, they need to be conscious of the diversionary potentials of terminological hairsplitting over pivotal but inherently inexact terms used in the discourse of local knowledge.

Second, contemporary anthropological insights are quick to appeal to the often-exaggerated cosmopolitan and processual nature of culture, thus blackmailing claims to local knowledge as both unrealistic and imperiling the public domain. This approach undermines the unidirectional transfer of knowledge from indigenous and local communities to Western industrial complexes and the unbridled extensions of intellectual property as the real factors that endanger the public domain. Without doubt, the reservations about our anemic public domain and dangers of cultural proprietization are well founded. However, contrary to the impression in some quarters, local knowledge and its custodians are more appropriately victims of these phenomena than their scapegoat.

Third, similar to the blackmail from anthropology, the principles of liberalism as a politicophilosophical ideology represent a source of unsuspecting challenge to local knowledge. Fourth, also, not left out is the long running battle about an appropriate conceptual framework of legal right to intellectual property capable of accommodating local knowledge. The intellectual property challenge has opened up other options for local knowledge protection via benefit sharing models. Unfortunately, a notable drawback to these alternatives is the legitimacy and role of intermediaries, as brokers of indigenous knowledge and resources, who exploit the power gaps in their relationships with indigenous and local communities.

Even in a cosmopolitan cultural order, claims to local knowledge symbolize the historically rooted struggle of indigenous and local communities in their search for a responsive knowledge protection system that recognizes their contributions in a creolized knowledge generation process. Such a regime will represent a major step forward in the long tortuous road to free local knowledge from the traps of the conventional intellectual property regime, culture, power and politics.

About the Author

Chidi Oguamanam, LL.M, Ph.D. (British Columbia) is the Director of the Law and Technology Institute, Dalhousie University Law School, Halifax, Nova Scotia, Canada; e-mail: *Chidi@Dal.Ca*

Notes

An earlier version of this article was presented at the panel on Indigenous Peoples and the Modern State at the Law and Society Conference in Berlin, Germany, 25–28 July 2007. Thanks are due to Professor Jane McMillan for organizing the panel and to other panel presenters and discussants for their feedbacks. Thanks are also due to Brendan T. Gray for outstanding research assistance. This article is dedicated to Professor Brian Noble, a great friend, who gets me stimulated and thinking after every conversation around our shared scholarly interests.

- 1 For the present purpose, the West's other is a convenient reference to the indigenous and local communities of both the enclave territories (where there was no settler withdrawal) and their counterparts in the rest of the developing countries (the so called global South) or the Third World.
- 2 This is exemplified by a few significant international legal instruments on the environment that were signed in the 1990s, including specifically those emerging from the 1992 Rio Earth Summit such as Agenda 21, the Convention on Biological Diversity, the Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa.
- 3 Knowledge economy characterizes the ascendancy and rapid transformation of information, its generation and management mainly with the help of computer-driven digital technologies in all spheres of economic, research, administrative, service and industrial activities. The result is that knowledge or information now constitutes perhaps

- the most crucial factor of production and the single most important matrix in overall economic development since the late twentieth century.
- 4 Citing Simon J. Bronner (1998).
 - 5 Response to Brown (1998).
 - 6 Citing Ruth Gana (1995).
 - 7 Colonial division of labor is colonialism's unofficial economic blue print in which colonized regions of the world were sources of raw materials, while the colonial powers reserved exclusive industrial power for the conversion of the raw materials into finished products.
 - 8 For example, preamble paragraphs and article 8(j) of the CBD text.
 - 9 Arewa (2006a, p. 59) note that "local knowledge is also not locally homogenous and differences exist along categories including gender, age, class, occupational and other markers" (references omitted).
 - 10 The reference to local or non-cosmopolitan knowledge is an acknowledgment of the culture-specific aspects of non-Western knowledge forms. I share the view that, like science, such knowledge forms are culture sensitive but I do not subscribe to the suggestion that in contrast to local knowledge, science is "decultured". Compare Brush and Stabinsky (1996, p. 4).
 - 11 As a collective, however, non-Western peoples are now a new transnational underclass as a result of the impacts of hegemonic forces of economic neoliberalism and globalization.
 - 12 For example, the Pastoral Massai of Kenya, the Pygmies of Central Africa and the San and Khoi peoples of Southern Africa. Often, Nigeria's Ogoni ethnic minority in the Niger Delta (who struggle against state-sponsored corporate exploitation of their oil resources and attendant environmental degradation) is cited in conflation of indigenous and minority rights. However, it is doubtful if the Ogonis could claim to be indigenous to the exclusion of other minority groups in the Niger Delta region.
 - 13 That is not the case however in Mexico, Bolivia and Fiji. Also, an entire country population may be indigenous such as in Iceland, Tonga and Papua New Guinea.
 - 14 Brown (1998, p. 197) argues that "human beings are members of a society but not "members of" a culture, which is a flexible set of understandings, dispositions, and behavioral scripts that change through time and freely influence and are influenced by social interactions with other groups" (reference omitted). However, the enigmatic nature of the phenomenon of culture and its intricate relationship with the concept of society as evident in this remark makes the distinction on the basis of "membership" quite reductionist. Compare Kymlicka (1989) (alluding to the primary loyalties of peoples to cultural memberships in the midst of centrifugal influences).
 - 15 Documentation of traditional knowledge in a traditional knowledge digital library (TKDL) format is a program championed by India as a strategy to safeguard its Unani, Ayurvedic and Sidha medical heritages that have been subject to biopiracy in recent times. This initiative has proven successful and is now globally recognized. Many developing countries and regional organizations are understudying the Indian project with a view to adopting it.
 - 16 The dichotomization of ideas and their expression as a principle of the Western copyright regime of intellectual property right ignores the fluidity of relations and interconnectedness of phenomena in the indigenous holistic worldview. In many indigenous communities the idea and its expression, the creator, the created and the

- objects of creation are inseparably linked in a holistic order. The extension of the copyright analogy to indigenous claims readily ignores these conceptual facts of indigenous world order.
- 17 Noting that discourses of intellectual property for local knowledge often ignore the fluidity of knowledge boundaries.
 - 18 Arguing that “cosmopolitanism is nothing more than networking of local progressive struggles with the objective of maximizing their emancipatory potentials in *locu* through translocal/local connections”.
 - 19 Notable examples include the displacement of patent exemption on nature or products of nature, the extension of patent regime to life forms, including plants, animals, their genetic components and even human genomes and DNAs of isolated indigenous tribes on the verge of extinction. Others are the extension of copyright claims on matters hitherto considered facts and the lowering of the threshold for originality to accommodate the fluidity of information manipulation in the digital environment.
 - 20 Notable initiatives include the moribund Shaman Pharmaceutical benefit-sharing program, the International Cooperative Biodiversity Groups initiative (involving a consortium of US and Third World offshore research institutions), the Merck Pharmaceutical initiative and the Costa Rican Government, etc. These access and benefit sharing programs are intensively promoted by the CBD and they have made their ways into the legislative framework of many bioresource rich developing countries.
 - 21 Barnes’ observation was in a response to Brown (1998, p. 206). Interestingly, this issue is also broached by Brown in his 2003 book: *Who Owns Native Culture?*
 - 22 In 1999, the Canadian Supreme Court echoed a similar sentiment in *Cadbury-Schweppes v FBI Foods* [1999] 1 SCR 142 at 171–2, ¶26.
 - 23 Taylor (1994, p. 62) notes that “Liberalism is not a meeting ground for all cultures . . .”.
 - 24 Such as the principles of autonomy and individual liberty, democracy, social justice, etc.

References

- Agrawal, A. (1999) ‘On Power and Indigenous Knowledge’, in D. Posey (ed.), *Cultural and Spiritual Values of Biological Diversity*. UNEP, Nairobi, pp. 177–80.
- Alfred, T. (1991) *Peace, Power and Righteousness, an Indigenous Manifesto*. Oxford University Press, New York.
- Amani, B. and Coombe, R. J. (2005) ‘The Human Genome Diversity Project: The Politics of Patents at the Intersection of Race, Religion and Research Ethics’, *Law and Policy*, 27, 152–88.
- Anaya, J. (1996) *Indigenous Peoples in International Law*. Oxford University Press, New York.
- Arewa, O. B. (2006a) ‘Piracy, Biopiracy and Borrowing: Culture, Cultural Heritage and the Globalization of Intellectual Property’ [online], Selected Works of Olufunmilayo B. Arewa, Bepress Legal Series. Available at (http://works.bepress.com/o_arewa/4/) [Accessed July 2007].
- Arewa, O. B. (2006b) ‘TRIPS and Traditional Knowledge: Local Communities, Local Knowledge in Global Intellectual Property Frameworks’, *Marquette Intellectual Property Review*, 10, 155–80.

- Arewa, O. B. (2007a) 'Culture as Property: Intellectual Property, Local Norms and Global Rights' [online], Selected Works of Olufunmilayo B. Arewa, Bepress Legal Series. Available at <http://works.bepress.com/o_arewa/9> [Accessed July 2007].
- Arewa, O. B. (2007b) 'The Freedom to Copy: Copyright, Borrowing and Context' [online], Selected Works of Olufunmilayo B. Arewa, Bepress Legal Series. Available at <http://works.bepress.com/o_arewa/> [Accessed July 2007].
- Barnes, J. A. (1998) 'Comment' on Michael F. Brown, 'Can Culture Be Copyrighted?', *Current Anthropology*, 39, 206–7.
- Battiste, M. and Henderson, J. (2000) *Protecting Indigenous Knowledge and Heritage: A Global Challenge*. Purich, Saskatoon.
- Bently, L. (2005) 'Copyright, Translations and Relations Between Britain and India, 1880–1914'. Paper presented at the Association for Teaching and Research in Intellectual Property (ATRIP) Conference, University of Montreal, 11–13 July (on file with the author).
- Berne Convention for the Protection of Literary and Artistic Works (1886) 25 UST 1341 (as revised in 1971).
- Blakeney, M. (2000) 'The Protection of Traditional Knowledge Under Intellectual Property Law', *European Intellectual Property Review*, 20, 251–61.
- Boyle, J. (2003) 'The Second Enclosure Movement and the Construction of the Public Domain', *Law and Contemporary Problems*, 66, 33–74.
- Bronner, S. J. (1998) *Following Tradition: Folklore in the Discourse of American Culture*. Utah University Press, Logan, UT.
- Brown, M. (2003) *Who Owns Native Culture?* Harvard University Press, Cambridge, MA.
- Brown, M. F. (1998) 'Can Culture be Copyrighted?', *Current Anthropology*, 139, 193.
- Brush, S. and Stanbinsky, D. (1996) *Valuing Local Knowledge: Indigenous Peoples and Intellectual Property Rights*. Island Press, Washington, DC.
- Cajete, G. (1999) *Native Science: Natural Laws of Interdependence*. Clear Light, Santa Fe, NM.
- Chander, A. and Sunder, M. (2004) 'The Romance of the Public Domain', *California Law Review*, 92, 1331–7.
- Chartrand, H. M. (2006) *The Competitiveness of Nations in the Global Knowledge-Based Economy* [online]. Unpublished Ph.D. Dissertation, Interdisciplinary Studies, University of Saskatchewan. Available at <<http://www.compilerpress.atfreeweb.com/b.%20Pro%20Forma%20ToC.htm>> [Accessed July 2007].
- Cobo, M. (1986) 'Study of the Problem of Discrimination against Indigenous Populations', UN-Sub-Commission on Prevention of Discrimination and Protection of Minorities. UN Doc.E/CN.4 sub.2/1986/7/Add.4.
- Convention Concerning Indigenous and Tribal Peoples in Independent Countries (1989) 21 ILM 1382.
- Convention for the Safeguarding of Intangible Cultural Heritage (2003) (MISC/2003/CLT/CH/14).
- Convention on Biological Diversity (1992) 31 ILM 818.
- Coombe, R. J. (1998) 'Intellectual Property, Human Rights and Sovereignty: New Dilemmas in International Law Posed by the Recognition of Indigenous Knowledge and the Conservation of Biodiversity', *Indiana Journal of Global Legal Studies*, 6, 59–115.

- Coombe, R. J. (2001) 'The Recognition of Indigenous and Local Communities' Knowledge in International Law', *St. Thomas Law Review*, 14, 275–86.
- Crews, K. D. (2005) 'Copyright Duration and the Progressive Degeneration of a Constitutional Doctrine', *Syracuse Law Review*, 55, 189–250.
- Daes, E. (2001) 'The Concept of Self-Determination and Autonomy of Indigenous Peoples in the United Nations Declaration on the Rights of Indigenous Peoples', *St. Thomas Law Review*, 14, 259–70.
- Darian-Smith, E. and Fitzpatrick, P. (eds) (1999) *Laws of the Postcolonial*. University of Michigan Press, Ann Arbor, MI.
- Davis, M. H. (2003) 'Some Realism About Indigenism', *Cardozo Journal of International and Comparative Law*, 11, 815–30.
- DeGeer, M. E. (2003) 'Biopiracy: The Appropriation of Indigenous Peoples' Cultural Knowledge', *New England Journal of International and Comparative Law*, 9, 179–208.
- Dove, M. R. (1996) 'Center, Periphery and Biodiversity: A Paradox of Governance and Developmental Challenge', in S. Brush and D. Stabinsky (eds), *Valuing Local Knowledge Indigenous Peoples and Intellectual Property Rights*. Island Press, Washington, DC, pp. 41–67.
- Drahos, P. (1997) 'Indigenous Knowledge and Duties of Intellectual Property Owners', *Intellectual Property Journal*, 11, 179–209.
- Drahos, P. (2000) 'Indigenous Knowledge, Intellectual Property and Biopiracy: Is a Global Bio-Collecting Society the Answer?', *European Intellectual Property Review*, 22, 245–50.
- Drahos, P. and Braithwaite, J. (2003) *Information Feudalism: Who Owns the Knowledge Economy?* New Press, New York.
- Dutfield, G. (2000) *Intellectual Property Rights Trade and Biodiversity: Seeds and Plant Varieties*. Earthscan, London.
- Dutfield, G. (2007) 'Prior Informed Consent and Indigenous Peoples in a Multicultural World'. Paper presented at the Conference on Intangible Cultural Heritage and Intellectual Property Under the 2003 UNESCO Convention, New Delhi, 25–27 March (on file with the author).
- Ellen, R. F., Parkes, P. and Bicker, A. (2000) *Indigenous Environmental Knowledge and Its Transformations: Critical Anthropological Perspectives*. Harwood, Amsterdam.
- Eppich, C. K. (2002) 'Patenting Dilemma: Drugs for Profit Versus Drugs for Health', *Santa Clara Law Review*, 289–318.
- Farley, C. H. (1997) 'Protecting Folklore of Indigenous Peoples: Is Intellectual Property the Answer?', *Connecticut Law Review*, 30, 1–48.
- Four Directions Council (1996) 'Forests, Indigenous, Peoples and Biodiversity' (Contribution of Four Directions Council to the Secretariat of the Convention On Biodiversity (Lethbridge, AB: FDC, 1996)); also referenced in Oguamanam 2006a at p. 25 n. 92.
- Gana, R. (1995) 'Has Creativity Died in the Third World? Some Implications of Internationalization of Intellectual Property', *Denver Journal of International Law and Policy*, 24, 109–44.
- Gathii, J. T. (2002) 'Rights, Patents, Markets and Global AIDS Epidemic', *Florida Journal of International Law*, 14, 261–72.

- Giddens, A. (1990) *The Consequences of Modernity*. Stanford University Press, Palo Alto, CA.
- Gupta, V. K. (2007) 'India's TKDL: Definition and Classification of ICH and TK in the Context of Inventory Making'. Paper presented at the conference on Intangible Cultural Heritage and Intellectual Property Under the 2003 UNESCO Convention, New Delhi, 25–27 March (on file with the author).
- Halewood, M. (1999) 'Indigenous Knowledge in International Law: A Preface to Sui Generis Intellectual Property Protection', *McGill Law Journal*, 44, 953–98.
- Hannerz, U. (1990) 'Cosmopolitans and Locals in World Culture', *Theory Culture and Society*, 7, 237–51.
- Helfer, L. (2004) 'Regime Shifting: The TRIPs Agreement and New Dynamics of International Law Making', *Yale Journal of International Law*, 29, 1–89.
- Heller, M. A. and Esienberg, R. S. (1998) 'Can Patents Deter Innovation? The Anticommons in Biomedical Research', *Science*, 280, 698–701.
- Hodgson, D. L. (2002) 'Comparative Perspectives on Indigenous Rights Movement in Africa and the Americas', *American Anthropologist*, 104, 1037–50.
- Intergovernmental Committee on Genetic Resources (2003) Traditional Knowledge and Folklore Traditional [online]. WIPO, Available at <<http://www.wipo.int/tk/en/igc/>> [Accessed July 2007].
- Iverson, D. (2002) *Postcolonial Liberalism*. Cambridge University Press, London.
- Jaszi, P. (1991) 'Toward a Theory of Copyright: The Metamorphoses of Authorship', *Duke Law Journal*, 455–502.
- Johnson, M. (1990) *Traditional Ecological Knowledge*. Dene Cultural Institute & IDRC, Ottawa.
- Koning, M., De (1999) 'Biodiversity Prospecting and Equitable Remuneration of Ethnobiological Knowledge: Reconciling Industry and Indigenous Interests', in M. Blakeney (ed.), *Intellectual Property Aspects of Ethnobiology*. Sweet & Maxwell, London, pp. 23–42.
- Krumenacher, T. (2004) 'Protection of Indigenous Peoples and their Traditional Knowledge: Would a Registry System Reduce the Misappropriation of Traditional Knowledge?', *Marquette Intellectual Property Review*, 8, 143–60.
- Kymlicka, W. (1989) *Liberalism, Community, and Culture*. Clarendon, Oxford.
- Kymlicka, W. (ed.) (1995) *The Rights of Minority Cultures*. Oxford University Press, New York.
- Lessig, L. (2003) 'The Creative Commons', *Florida Law Review*, 55, 763–78.
- Martin, G. and Vermeulen, S. (2005) 'Intellectual Property, Indigenous Knowledge and Biodiversity', *Capitalism, Nature and Socialism*, 27–48.
- Maskus, K. and Reichman, J. (2004) 'The Globalization of Private Knowledge Good and the Privatization of Global Public Goods', *Journal of International Economic Law*, 7, 279–320.
- Mehta, M. D. (ed.) (2005) *Biotechnology Unglued*. UBC Press, Vancouver.
- Mgbeoji, I. (2001) 'Patents and Traditional Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Biopiracy?', *Indiana Journal of Global Legal Studies*, 9, 163–86.

- Mgbeoji, I. (2003) 'The Juridical Origins of the International Patent System: Toward the Historiography of the Role of Patent in Industrialization', *Journal of History of International Law*, 5, 403–22.
- Mgbeoji, I. (2005) *Global Biopiracy: Patents, Plants and Indigenous Knowledge*. UBC Press, Vancouver.
- Mgbeoji, I. (2007) 'An Overview of Indigenous Knowledge and African Patent System', in E. Boon and L. Hens (eds), *Indigenous Knowledge Systems and Sustainable Development: Relevance for Africa*. Kamla-Raj, Delhi.
- Mgbeoji, I. and Allen, B. (2003) 'Patent First, Litigate Later! The Scramble for Speculative and Overly Broad Genetic Patents: Implications for Access to Health Care and Biomedical Research', *Canadian Journal of Law and Technology*, 2, 83–98.
- Mossoff, A. (2001) 'Rethinking the Development of Patents: An Intellectual History, 1550–1800', *Hastings Law Journal*, 1255–1322.
- Oguamanam, C. (2004a) 'Protecting Indigenous Knowledge in International Law: Solidarity Beyond the Nation-State', *Law Text Culture*, 8, 191–230.
- Oguamanam, C. (2004b) 'Indigenous Peoples and International Law: The Making of a Regime', *Queens Law Journal*, 30, 348–99.
- Oguamanam, C. (2004c) 'Localizing Intellectual Property in the Globalization Epoch: The Integration of Indigenous Knowledge', *Indiana Journal of Global Legal Studies*, 11, 135–70.
- Oguamanam, C. (2006a) *International Law and Indigenous Knowledge: Intellectual Property, Plant Biodiversity and Traditional Medicine*. University of Toronto Press, Toronto.
- Oguamanam, C. (2006b) 'Regime Tension in the Intellectual Property Rights Arena: Farmers Rights and Post TRIPS Counter Regime Trends', *Dalhousie Law Journal*, 29, 413–54.
- Okeji, R. L. (2004) 'The Institutions of Intellectual Property: New Trends in an Old Debate', *American Society of International Law Proceedings*, 98, 219–22.
- Osborne, S. D. (2003–4) 'Protecting Tribal Stories: The Perils of Propertization', *American Indian Law Review*, 28, 203–36.
- Paine, R. (1999) 'Aboriginality, Multiculturalism and Liberal Rights Philosophy', *Ethnos*, 64, 325–49.
- Paris Convention for the Protection of Industrial Property (1883) 21 UST 1583.
- Posey, D. A. (2002) 'Commodification of the Sacred Through Intellectual Property Rights', *Journal of Ethnopharmacology*, 83, 3–12.
- Rural Advancement Foundation International (2002) 'Bioprospecting/Biopiracy and Indigenous Peoples' [online]. The Latin American Alliance. Available at <http://www.kahea.org/gmo/pdf/bioprospecting_people.pdf> [Accessed July 2007].
- Reichman, J. H. (2000) 'The TRIPS Agreement Comes of Age: Conflict or Corporation with Developing Countries?', *Case Western Reserve Journal of International Law*, 32, 441–70.
- Roht-Arriaza, N. (1996) 'Of Seeds and Shamans: The Appropriation of Scientific and Technical Knowledge of Indigenous and Local Communities', *Michigan Journal of International Law*, 17, 919–66.
- Severi, Carlo (1998) 'Comment' on Michael F. Brown, 'Can Culture Be Copyrighted?', *Current Anthropology*, 39, 214–15.
- Sherman, B. and Bently, L. (1999) *The Making of Modern Intellectual Property Law: The British Experience, 1760–1911*. Cambridge University Press, Cambridge.

- Shiva, V. (1997) *Biopiracy: The Plunder of Nature and Knowledge*. South End Press, Boston, MA.
- Smith, L. T. (1999) *Decolonizing Methodologies: Research and Indigenous Peoples*. Zed Books, London.
- Souza Santos, B. (1995) *Towards a New Common Sense: Law, Science and Politics in Paradigmatic Transition*. Routledge, London.
- Stocking, G. W., Jr. (1982) 'The Dark-Skinned Savage: The Image of the Primitive Man in Evolutionary Anthropology', in G. W. Stocking Jr. (ed.), *Race, Culture and Evolution: Essays in the History of Anthropology*. University of Chicago Press, Chicago, IL, pp. 110–32.
- Sunder, M. (2000) 'Intellectual Property and Identity Politics: Playing with Fire', *Journal of Gender, Race and Justice*, 4, 69–98.
- Taylor, C. (1994) 'The Politics of Recognition', in A. Gutmann (ed.), *Multiculturalism*. Princeton University Press, Princeton, NJ, pp. 25–73.
- Trade-Related Aspects of Intellectual Property Agreement (1994) 33 ILM 1197.
- Waldron, J. (1995) 'Minority Cultures and Cosmopolitan Alternative', in W. Kymlicka (ed.), *The Rights of Minority Cultures*. Oxford University Press, New York, pp. 93–119.
- Wiessner, S. (1999) 'Rights and Status of Indigenous Peoples: A Global Perspective and International Legal Analysis', *Harvard Human Rights Journal*, 12, 57–128.
- Wilmer, F. (1993) *Indigenous Voices in World Politics: From Time Immemorial*. Sage, Newbury Park, CA.
- World Intellectual Property Organization (2001) *Fact Finding Missions on Intellectual Property and Traditional Knowledge 1998–1999*. WIPO, Geneva.
- Yano, L. (1993) 'Protection of Ethnobiological Knowledge of Indigenous Peoples', *UCLA Law Review*, 41, 443–86.
- Yu, P. K. (2004) 'Currents and Crosscurrents in the International Intellectual Property Regime', *Loyola Los Angeles Law Review*, 38, 323–444.
- Yu, P. K. (2006) 'Of Monks, Medieval Scribes and Middlemen', *Michigan State Law Review*, 1–32.
- Yu, P. K. (2007) 'The International Enclosure Movement', *Indiana University Law Journal*, 82, 828–907.
- Zuckerman, H. (1998) 'The Sociology of Science', in N. J. Smelser (ed.), *The Handbook of Sociology*. Sage Publications, Newbury Park, CA, pp. 511–74.