
Indigenous People Incorporated?

Culture as Politics, Culture as Property in Pharmaceutical Bioprospecting¹

by Shane Greene

The ongoing debate over indigenous claims to intellectual and cultural property reveals a series of indigenous strategies of mobilization that both appropriate from and work against the logic of the market. Of particular significance in this regard are the various indigenous strategies used in contemporary pharmaceutical bioprospecting activities to address claims to traditional medical knowledge as cultural property. This article presents field data on a controversial ethnopharmaceutical project among the Aguaruna of Peru's high forest and offers a comparative analysis of the outcomes with attention to several other cases in and beyond South America. In particular, questions are raised about the forms of legitimating authority in the burgeoning international indigenous movement, the role of NGOs, researchers, bureaucracies, and corporations in this process, and the dilemmas that emerge from the politicization and privatization of indigenous culture and identity.

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1. At different stages various institutions made possible the fieldwork on which this article is based: the Social Science Research Council, the Wenner-Gren Foundation, the Fulbright program, the Tinker Foundation, and the University of Chicago's Center for Latin American Studies. Manuela Carneiro da Cunha and the participants in her intellectual property rights seminar at the University of Chicago read and commented on a very early draft of the paper in the winter of 2000. Since then several other readers have pushed me to improve the argument: Jean Comaroff, Michael Brown, Josh Rosenthal, Steve King, three anonymous reviewers, and probably others along the way. Most of my debt is due to Brendan Tobin, the members of the ICBG team, and several Aguaruna leaders and com-

The long-standing Euro-American tradition that imagines indigenous peoples as forever teetering on the brink of cultural collapse and demographic destruction, whether in colonial ideologies of the civilizing process, anthropological scholarship on acculturation, or development policies that project an inevitable triumph of modernization over tradition, has proven profoundly misleading. The native subjects of Europe's imperial expansion, the ethnic and tribal pockets still existent within modern nation-states, and the tradition-laden "obstacles" to capitalist development have demonstrated themselves to be actors of world-historical proportions. Being indigenous in our era has become much more than a question of tenuous cultural survival or merely the discursive product of colonial and modern imaginations. It is a historically validated subject position that is accompanied by a conscious strategy of effective, if still highly contested and multiply configured, political, cultural, and historical action for significant populations across the world.

One of the more remarkable phenomena of the past few decades in this regard has been the increasingly visible efforts by indigenous peoples from different world regions to formalize their own forms of political struggle and representation at local, national, and global levels (see Chirif, García, and Smith 1991, Brysk 2000, Brown 1993, Muehlebach 2001, Kearney and Varese 1995, Smith 1996, Friedman 1999, Warren and Jackson 2002, Van Cott 1994, Warren 1998, Smith and Ward 2000, Ramos 1998, Greene 2002, Ballón Aguirre 1988, Albó 1991, Urban and Sherzer 1991, Niezen 2003, Montejo 2002, Ewen 1994). In the process they have formed an institutional network of indigenous activists, organizations, and advocates that is global in scope. The most significant and internationally visible forum in which indigenous spokespeople come together is the United Nations Work Group on Indigenous Populations, which conducts debates on the definition of "indigenous" and drafts legislation for rights to territory, self-determination, the environment, and culture (Muehlebach 2001, Niezen 2003). The activities of the UN Work Group and the increasing visibility of indigenous movements are often cited as evidence of indigenous peoples' having gained a "voice" in national and international politics (Muehlebach 2001, Montejo 2002, Ewen 1994). The idea of a "voice" immediately raises the question of who is speaking for whom and to whom, and therefore of central importance to these emergent forms of indigenous mobilization are the issues of indigenous self-representation and the role of persons and organizations that act as mediators between external interests and local constituencies.

Political and cultural mediation is nothing new to the encounter between indigenous peoples and the projects of European colonizers or modern nation-states. Colonial

munity members. Particularly deserving of mention are Walter and Memory Lewis, Rogerio Castro, Steve Caspers, Ricardo Apanu, César and Jorge Sarasara, Evaristo Nugkuag, José Catip, Adolfo Juep, and all the other federation leaders. I retain full responsibility for any flaws in the ideas expressed here.

administrations often relied heavily on native “chiefs” of one kind or another to enforce colonial policies on local subjects. The role of native *kurakas* in Spanish America and the system of indirect rule employing tribal chiefs in Africa are classic examples (see Rasnake 1988; Stern 1982; Comaroff and Comaroff 1991:255). Nor is the study of indigenous political mediation new to the anthropology of the modern nation-state context. Eric Wolf’s (1956) article on native leaders in Mexico as political, economic, and cultural “brokers” between their home communities and the national society is a classic in this respect.

Some of the more notable controversies in contemporary anthropology suggest that indigenous self-representation, global indigenous mobilization, and the mediation involved in such intercultural politics are still very much at the heart of recent anthropology. David Stoll’s (1999) contentious rereading and revision of the Nobel prizewinner Rigoberta Menchú’s account of life as a Maya during Guatemala’s internal war landed him in a heated debate about his authority to question representations of her as an internationally revered indigenous icon. More controversial still is Patrick Tierney’s (2000) critical account of several researchers’ work with the Venezuelan Yanomami. Tierney’s book includes details about the anthropologist Napoleon Chagnon’s attempt to call into question the act of political representation of one of the group’s most outspoken leaders, Davi Yanomami, whom he considered a “pawn” of environmental NGOs and his own anthropological rivals (see Graham 2002).

Ultimately these recent controversies reveal that contemporary indigenous spokespeople and representative organizations are negotiating their role as mediators and representatives of indigenous collectivities with a whole host of other nonindigenous peoples and organizations specific to this historical moment. While anthropologists and missionaries have long been key interlocutors with indigenous peoples, they are hardly alone in this emergent debate—productive at times of somewhat uncomfortable encounters—over the nature of indigenous activism and what constitutes legitimate representation. Environmental and human rights nongovernmental organizations (NGOs), state and international bureaucracies, development and funding agencies, corporations, researchers, and activists all now have their own stakes in negotiating the politics of indigenous representation. Indeed, global environmental activism, the objectives of transnational NGOs, sustainable-development initiatives, and even the “green capitalism” practiced by ostensibly eco-conscious corporations have emerged as powerful agendas with respect to indigenous peoples and their forms of representation. Through such environmentally friendly contacts some indigenous leaders and organizations have successfully communicated their plight to global audiences and powerful international funding and development institutions (Conklin and Graham 1995, Smith 1996, Turner 1993, Carneiro da Cunha and Almeida 2000). However, many point to the pitfalls of seeing indigenous peoples as inherently environmen-

tally conservative and thus stereotyped as “ecologically noble savages” (see Redford 1990; Orlove and Brush 1996:334).

Two related phenomena are part and parcel of this greater and more visible indigenous mobilization and its mediation by nonindigenous interlocutors: the politicization of culture and its treatment as property. In an age in which anthropologists and other scholars are increasingly critical of the arbitrary boundaries implied by the “culture” concept (see Gupta and Ferguson 1992), indigenous peoples publicly embrace such boundaries, citing the virtues of indigenous cultures in ways that portray them as relatively fixed and identifiable wholes associated with delimited ethnic collectivities/territories and specific histories (see Fischer 1999). Indeed, claims to distinct, delimited cultures give validity to the historically specific subnational ethnic identities on which much global indigenous politics is based. Indigenous representatives increasingly speak about their distinct cultures as objects around which political struggle is organized in their efforts to negotiate the legacies of colonial occupation, incorporation into modern national projects, and the pressures of globalization.

The politicization of indigenous culture is accompanied by a tendency to define it as property. Indigenous representatives across the world now commonly speak about themselves not merely as representatives of distinct cultures but also as part-owners of collectively propertied cultures (Brown 2003).² Contemporary indigenous cultural property claims range from the material (human remains, artifacts, significant sites) to the intangible (sacred symbols, music, cultural heroes, traditional plant knowledge). Struggles to make culture property represent one of the most active spheres of indigenous political and, I will argue, economic action. Indeed, in some instances cultural property claims have surpassed in importance the concerns over territory and land rights that have historically been central to indigenous mobilization (Muehlebach 2001). Passage of the Native American Graves Protection and Repatriation Act in 1990 gave Native Americans unprecedented rights to reclaim human remains and material cultural artifacts in the possession of U.S. museums (see Haas 1996, Brown 1998). Significant struggles over intangible cultural property are occurring as well. In an extraordinary legal settlement the administrators of the Crazy Horse Estate and the Rosebud Sioux tribe of South Dakota successfully challenged a brewing company’s use of the name “Crazy Horse” in the marketing of a malt liquor product. SBC Holdings issued a formal apology and settled with the

2. Richard Handler’s (1985) essay on the politics of cultural property legislation and the expansion of the concept of *patrimoine* in Quebec demonstrates that such politics is also central to certain forms of nationalism and subnationalism. National and subnational politics, he suggests, especially emerging ones, claim to “have” culture and construct policies of legal exclusion, rights, and ownership around it in an effort to bolster their political legitimacy. Here I concentrate more on issues of representation and political-economics than on the forms of nationalism and subnationalism of which such claims are part.

Native American plaintiffs in 2001 (Gale 2001). Halfway across the world in Southern Africa, the San peoples, now enveloped by a number of ethnotourism enterprises, presented a very similar complaint about the misuse of their cultural property. A group of !Xûn San denounced a South African photographer and a local tourist lodge for the unauthorized use of a photograph that featured a now-deceased leader of the San in tourist brochures (Sylvain 2002:1080).

These examples suggest that at one level indigenous people are struggling to monitor and assert more direct control over their cultural property by challenging and politicizing its use by nonindigenous actors. Their own economic motivations seem to be a secondary concern. The Crazy Horse case, for example, involved not monetary damages but culturally appropriate compensation including racehorses, braids of tobacco and sweetgrass, and Pendleton blankets (Gale 2001). These strategies to reclaim tangible and intangible elements of their culture from nonindigenous private parties (e.g., corporations, museums, researchers, tourist agencies) and effectively remove them from the public domain revolve primarily around the apparent sacrilege and defamation that the misuse, possession, display, and/or commercial exploitation of these elements entails.

The contemporary search for scientific-commercial utility in the world's biological resources known as bioprospecting confronts a similar set of issues with respect to indigenous claims to traditional medicinal knowledge as cultural or intellectual property. In this sphere of practices and politics a set of dynamics is emerging that requires as much attention to its economic aspects as to ever-present concerns about sacrilege and defamation. In this paper I hope to raise a series of provocative questions about what is at stake when indigenous representatives take their own economic aspirations seriously in negotiations over the potential market value of their people's traditional medical knowledge and the kinds of new problems that emerge as a result. In this sense, I depart from a very old Durkheimian structural-functionalist tradition in anthropology. Instead of focusing on the principles of lineage, marriage, descent, and so on, that structure the corporate kin group, I am interested in the contemporary political-economics that give rise to entrepreneurial and identity-based strategies of indigenous incorporation in cultural property claims. What political and economic dilemmas arise from the treatment of indigenous medical knowledge as property in the current era of drug bioprospecting and the pursuit of sustainable development? And what kinds of dilemmas are encountered when exclusive cultural property owners must be legally and contractually defined in a terrain that involves the multiple agendas and differing expectations of indigenous representatives, drug corporations, state institutions, academics, NGOs, and activists of all sorts?

Drug Bioprospecting and Indigenous Property Claims to Traditional Knowledge

The 1990s witnessed a resurgence of public and private interest in the potential of plant-based sources for new pharmaceutical products after a steady decline in such research since the mid-twentieth century. The United Nations Convention on Biological Diversity, ratified in 1992, is the primary international regulatory agreement concerned with bioprospecting. In an effort to address North/South, developed/developing inequities in the international biotechnology industry, the convention recognizes each state's sovereign control over access to biological resources found in its national territory. This provides poorer nation-states with considerably more leverage in negotiating the terms for the extraction of biological resources from their territories—resources that were previously considered part of a universal public domain or common heritage of humankind. Furthermore, article 8j of the convention suggests that bioprospecting efforts that draw on traditional uses of biological resources and result in successful commercial ventures should entail protection for and benefit sharing with the indigenous or local populations whose knowledge contributes to biologically engineered products.

The possibility of future drugs based on traditional plant remedies is in large part rooted in historical examples—*aspirin*, antibiotics, and *quinine* being only a few of the more common. The idea of medicinally valuable plants is often invoked with images of indigenous groups, their traditional medical practices, and the miracle drugs that presumably lie undiscovered in the depths of the tropical forest (see Goering 1995, Dye 2000). However, it is unclear whether the future of pharmaceuticals will depend significantly on bioprospecting, much less on the input of the medical knowledge of indigenous peoples. Recent prognoses (see Artuso 1997, Aylward 1995, Moran, King, and Carlson 2001, *Economist* 1999, Albers-Schönberg 1995, O'Conner 2000, Macilwain 1998) are not nearly as optimistic as those of the early nineties (e.g., Pollack 1992).

In response to current pharmaceutical bioprospecting activities and the UN Convention, many now conceptualize traditional knowledge as a novel form of collective intellectual property (see Rosenthal 1997; Cox and Balick 1994; Elisabetsky 1991; Plotkin 1993; Lewis et al. 1999; King and Tempesta 1994; Boyle 1996; Tobin 1999b, 1994). Rosemary Coombe (1999, 1998) is critical of this move because intellectual property is historically associated with an ideology of possessive individualism and romanticized individual authorship, a peculiar feature of and for capitalist societies. She is nevertheless cognizant of the political-rhetorical potential of intellectual property claims when they are deployed by historically subjugated indigenous groups eager to gain some control over the market forces transforming their societies (1998: chap. 5). Indigenous activists offer differing opinions: some enthusiastically promote the idea of traditional knowledge as intellectual property while others reject it

as an imposition of Western categories on their own cultural forms (see Brush 1999, Coombe 1999). Environmental NGOs, also crucial actors in the debate over bioprospecting, often position themselves as a counterbalance to the exploitative tendencies of transnational capital interests and as allies of indigenous, local, and Third World peoples more generally.

Darrell Posey was one of the first anthropologists to engage and promote the idea of traditional knowledge as indigenous groups' collective intellectual property (see Posey 1990).³ Other anthropologists have since cited problems with the arbitrary exclusivity and enclosure implied in intellectual property, its history as a legal mechanism of capitalist societies, the incompatibility of collective and culturally fluid noncapitalist knowledge systems with individualized, exclusive Western property laws, and the threat that such a move represents to the public domain of knowledge (see Brush 1994, 1996, 1999; Posey and Dutfield 1996; Brown 1998, 2003; Strathern 1996). Dove (1995), Coombe (1999), and Greene (2002) make the related points that many indigenous peoples are plagued more by problems of territorial invasion, loss, dislocation, and marginalization by their own state elites than by the appropriation of their traditional knowledge by bio-pirates from the North.

Much of the early literature on bioprospecting and traditional knowledge as intellectual property is rife with polemics and ideological positioning. Further debate should be tempered with more extensive evaluation of actual cases, the complicated negotiations involved, and, as Cori Hayden (2003, n.d.) shows, the increasing avoidance by bioprospectors of such negotiations. On the basis of my own field studies and related documentation, I examine a controversial example of pharmaceutical bioprospecting negotiations involving the Aguaruna people of the Peruvian Amazon. The Amazon is a particularly good context in which to begin such an evaluation, given its central position in much of the contemporary debate over bioprospecting, indigenous and environmental activism, and cultural property protection (see, e.g., Conklin 2002). The Aguaruna case will be compared with related cases in and beyond the Amazon in an attempt to formulate some preliminary conclusions about the dilemmas of indigenous representation, indigenous incorporation, and contemporary claims to culture as property.

ICBG-Aguaruna Negotiations, Round 1

One of the most commonly cited examples of renewed interest in bioprospecting is the public grants program

3. Posey's work brought anthropologists into the debate about biodiversity and the ethics of ethnobotanical appropriations of traditional medical knowledge for pharmaceutical research just before the Second International Congress of Ethnobiology in 1990, where the issue was more thoroughly discussed. In a later publication with Dutfield, Posey places the indigenous struggle over traditional knowledge and intellectual property in the context of the larger struggle over indigenous and local groups' traditional resource rights (Posey and Dutfield 1996).

entitled the International Cooperative Biodiversity Group (ICBG).⁴ The ICBG program is the product of a workshop in 1991 sponsored by the National Institutes of Health (NIH), the National Science Foundation (NSF), and the United States Agency for International Development (USAID). The NIH emerged as the administrator of the program and announced a competition for large grants for research into the pharmaceutical potential of international biodiversity. According to Rosenthal (1997: 281–82), the ICBG program is essentially "experimental," since biodiversity's pharmaceutical utility is far from certain, and is designed to operate with goals that are clearly responsive to the principles outlined in the UN Convention.⁵

Two rounds of ICBG grants, one in 1993 and one in 1998, were awarded to a total of eight research teams with principal investigators from U.S. universities or health institutes (see the ICBG web site: www.nih.gov/fic/opportunities/icbg.html). ICBG grants are based on a collaborative funding, research, and mutual-benefits relationship between U.S. and developing-country institutions, commercial partners, and, in a few cases, specific indigenous/local communities. The ICBG Request for Applications (1997:11) promotes "active participation" of corporate-sector sponsors, effectively obliging potential grant recipients to secure private partners.

In 1993 a team from Washington University headed by Walter Lewis, a career ethnobotanist, won an ICBG award for the collection of plant samples in collaboration with the Aguaruna, a sizable Amazonian group (population 45,137 in Peru's 1993 census) that inhabits titled lands in Peru's high jungle region near the Ecuadorian border. Long reputed to be dedicated warriors, the Aguaruna have been at the forefront of Amazonian indigenous political organizing in Peru since the 1970s. The vast majority of the 187 individually titled Aguaruna communities are affiliated (with varying degrees of loyalty and participation) with local Aguaruna-run organizations or in some cases organizations comanaged with other Amazonian ethnic groups (the Huambisa and Chayahuita peoples). As of this writing I can identify 13 distinct organizations of this type, the most recent having surfaced in 2002. The local organizations typically

4. Other forms of bioprospecting, agro-industrial and human-genetic, are certainly tied to the larger debate about biodiversity and access to and ownership of biogenetic resources. While the acquisition of new seed varieties apparently makes up a significant part of agricultural industry practices (see Brush 1999), in every case this also involves access to the human innovation (i.e., cultivation practices) attached to it. In pharmaceutical bioprospecting, in contrast, many companies and researchers prefer a random or taxonomic methodology for collecting biological material to ethnobotanical methods that involve traditional knowledge and indigenous rights (see Aylward 1995; Moran, King, and Carlson 2001:506).

5. The United States did not sign the convention, and most interpretations of its refusal assume that the measures favoring benefit sharing and national sovereignty over biodiversity resources represented a potential threat to U.S. corporate interests in foreign biological resources. However, this does not neatly fit with the virtually simultaneous appearance of the ICBG program, in which the basic principles of the convention are clearly taken into account.

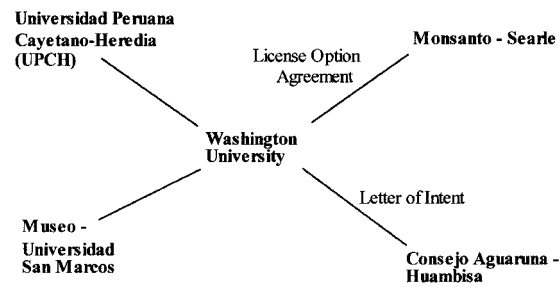
coordinate with or are claimed as local affiliates by one of two national indigenous confederations based in Lima, the Peruvian capital. All of this makes for a complicated set of political alliances and divisions among the larger Aguaruna collective, as the ICBG researchers soon discovered.

Under the ICBG protocols, Washington University's research was carried out as a partnership with Peruvian and indigenous institutions. Washington University, the Universidad Peruana Cayetano Heredia (UPCH), the Museo de Historia Natural de la Universidad San Marcos, and a category termed "Aguaruna People" constituted the four partners. All three institutions participated in plant collections with the Aguaruna, with Washington University and UPCH collecting for use in biological screening and the museum for an inventory of Peru's biodiversity. On the basis of prior contacts with Monsanto Corporation in the St. Louis area and in order to comply with the ICBG program's "encouragement" of private-sector collaboration, Washington University secured the participation of G. D. Searle & Co. (then Monsanto's pharmaceutical division).

According to Lewis (interview, 2000), the Organización Central de Comunidades Aguarunas del Alto Marañón (OCCAAM) had been considered as a potential indigenous partner in the original ICBG grant application, but having received the award the ICBG team entered into negotiations with the Consejo Aguaruna Huambisa, historically a much more influential indigenous organization in the region. Lewis (interview, 2000) says that the NIH referred him to the Consejo and its internationally famous founder and president, Evaristo Nugkuag, but the current director of the ICBG program, Josh Rosenthal (personal communication), disputes this. In any case, the Consejo was clearly the more prominent institutional actor among the Aguaruna. Until recently it was commonly presumed to represent a large proportion of the Aguaruna population, and without question it has a more illustrious history than the smaller, less visible Aguaruna organizations. Furthermore, Nugkuag's involvement in local, national, and international indigenous organizing had equipped him with substantial experience in international networking and won him several prestigious prizes. His fame was, of course, not without substantial controversy in the heated politics of indigenous representation.⁶

In April 1994 the ICBG team signed a very simple letter of intent to collaborate with the Consejo Aguaruna Huambisa in which the indigenous organization was promised an up-front annual payment for plant collec-

6. He was awarded the Right Livelihood (Alternative Nobel) Prize in 1986 and the Goldman Environmental Prize in 1991 in recognition of his leadership in the Asociación de Desarrollo Interétnica de la Selva Peruana (AIDSESP) and the Coordinadora de Organizaciones Indígenas de la Cuenca Amazónica (COICA) and for work in the areas of indigenous rights and environmental conservation. While he is clearly an effective and charismatic leader, the degree to which he is representative of indigenous Amazonian peoples has been questioned by Amazonian indigenous organizations that compete for member support (see Smith 1996).



NGO Intervention:
Rural Advancement Foundation International (RAFI)
Brendan Tobin, Sociedad Peruana de Derecho Ambiental (SPDA)

FIG. 1. Agreement structure of the first round of ICBG-Aguaruna negotiations.

tions and, in relatively ill-defined terms, a share of future royalties. Having secured a preliminary agreement with the Consejo, Washington University researchers returned to the United States and formalized the terms of Searle's participation with a license option agreement that made Washington University responsible for delivering the annual payments to the Consejo and any future royalties to be shared among the four partners. Under this agreement and the letter of intent signed with the Consejo, Washington University essentially became the legal intermediary between the U.S. pharmaceutical interest and all the Peruvian partners (fig. 1).

When the Consejo Aguaruna Huambisa heard of the separate agreement between Washington University and Searle, it began stalling the research and demanding more information about the content of the agreement. As Nugkuag reasons, "They [the ICBG team] were not very clear. The earnings [i.e., the future royalty scheme], logically, are established between Monsanto and Washington University. And we were not included in that agreement, thus, our claim [to share in the earnings] is in vain" (interview, 2000). With these reservations about the potential benefits and the separate agreement, the Consejo consulted with a North American NGO, Rural Advancement Foundation International (RAFI), which acts as a watchdog with regard to bioprospecting activities.⁷ It was through contacts at RAFI that the Consejo obtained a copy of the license agreement (Evaristo Nugkuag, interview, 2000). RAFI published the royalty rates on the World Wide Web and accused Searle and the ICBG team of being "bio-pirates" with the intention of exploiting Aguaruna knowledge in the interest of corporate

7. RAFI has since changed its name to ETC Group (see www.etcgroup.org).

gain (RAFI 1994). During the summer of 1994 Brendan Tobin, an Irish-born Peruvian-naturalized lawyer working in an NGO called the Sociedad Peruana de Derecho Ambiental (SPDA), received a copy of the agreement and then requested a copy of the letter of intent from the Consejo (Brendan Tobin, personal communication). Tobin objected to the legal inconsistencies between the letter of intent and the agreement, criticized the royalty rate as too low, and judged the ICBG-Searle research “directly linked to the furtherance of the economic and development interests of U.S. industry” (1994:11).

The idea that the Consejo was being offered a skimpy benefit package thus arose from consultation with the two NGOs. It had in fact already signed the letter of intent and accepted \$10,000 as part of an annual payment specified in the letter as compensation for collections (see Lambrecht 1998). The two NGO opinions advocated more direct and transparent negotiations between Searle and the Aguaruna (see Tobin 1994, RAFI 1995). Both RAFI’s polemical attack on the ICBG program and Tobin’s legal analysis assumed that bioprospecting with Aguaruna traditional knowledge was of great importance to Searle and therefore the flaws of the agreement structure represented an attempt to cheat the Aguaruna out of highly valued traditional knowledge.

With the Consejo’s concerns unresolved, the ICBG team entered the field in late 1994. It is impossible to verify exactly how and where it collected plants during this conflictive period. Lewis (interview, 2000) maintains that the collections were made in conjunction with local Ministry of Agriculture officials and largely without the use of native informants in the hills around a non-indigenous settlement called Imazita. Nugkuag (interview, 2000) says that the ICBG researchers made a critical mistake in choosing to work with the Ministry of Agriculture and that “without having authorization to enter into communities with the community chiefs they went astray in order to collect orchids. They collected other species of medicinal plants in what could be called a discrete fashion.” Lewis (personal communication) adamantly denies this latter claim. He says that of the roughly 300 samples collected during the disputed period, only about 10 samples were collected with Aguaruna informants and that these came from the home community of the OCCAAM, from which the researchers had received consent.

In early 1995, as its distrust of the ICBG team’s field activities grew, the Consejo withdrew from the ICBG project. The ICBG team returned to the Aguaruna area to talk to the leaders of OCCAAM in the hope of finding an indigenous partner that would be receptive to the research. OCCAAM leaders showed support for the project and soon signed onto the ICBG program with a separate and much more elaborate agreement than the original letter of intent. On learning of the new agreement, the Consejo sent a strongly worded letter, signed by various Aguaruna community chiefs and Consejo leaders, to officials at the NIH and Washington University protesting the ICBG activities. It made the letter public through its contacts at RAFI, who immediately trans-

lated it and posted parts of it on its web site (see RAFI 1995). The letter alleged, among other things, that Washington University had denied the Consejo adequate information about the license agreement and entered Aguaruna territory without authorization and vigorously demanded that the project be terminated. Significantly, it also implied that OCCAAM did not exist (referring to it as “the phantom group”). The organizational efforts of OCCAAM (initiated around 1975) had begun prior to the Consejo’s (initiated around 1977), however, and the relation between the two organizations had been conflictive from the beginning.

In its web-site publications RAFI portrays the Consejo Aguaruna Huambisa as the sole organizational representative of Aguaruna people. Its report on the ICBG conflict with the Consejo states that “without consultation with or approval from indigenous people, Washington University researchers unilaterally decided to initiate collection of samples and ethnographic material (to be provided to chemical giant Monsanto) in remote native communities in northeastern Peru” (RAFI 1995:5). They make no mention of the ICBG’s relations and subsequent written agreement with OCCAAM, instead presenting “the Aguaruna” as a single homogeneous mass unproblematically represented by the Consejo—a representation that does not at all reflect contemporary or customary Aguaruna reality. OCCAAM clearly suffered from international invisibility and a lack of transnational NGO contacts while the Consejo did not. But the tide was about to change.

Although the desire to have the project removed from Aguaruna territory did not materialize, the Consejo’s protest letter and its translation/publication by RAFI for an English-speaking activist audience proved to be a useful weapon. ICBG program officials at the NIH took the protest seriously, launched their own investigation, and insisted that the ICBG researchers return all the samples collected during the period in question to Peru. The NIH also insisted that the ICBG researchers clarify the terms of consent to the project with legitimate representatives of Aguaruna communities if they wished to continue with the grant.⁸ A new round of negotiations was in order.

ICBG-Aguaruna Negotiations, Round 2

In response to the Consejo’s protest letter and in the hope of salvaging the project, an Aguaruna named Ricardo Apanú involved in OCCAAM (who later became the ICBG field coordinator) began to organize a defense of the ICBG team’s research activities with the support of two other Aguaruna organizations, the Federación de Co-

8. Notably, the 300 samples collected during the disputed time period were returned not to the Aguaruna but to the Peruvian Ministry of Agriculture (Tobin 1999a). Regardless of the truth or falsity of the various accusations leveled at him by the Consejo (which I cannot judge, not having been present), Lewis now earnestly acknowledges his “political naiveté” (see Lambrecht 1998) as regards the complexity of Aguaruna politics and organization structure.

comunidades Nativas Aguarunas del Río Nieva (FECONARIN) and the Federación Aguaruna del Río Domingusa (FAD). In April 1995 these three organizations signed, stamped, and sent a written rebuttal to the recipients of the Consejo protest letter. The “Memorial” clarified that the ICBG researchers had worked appropriately with the leaders of OCCAAM and its affiliated communities. It also harshly criticized Evaristo Nugkuag, forcefully rejected his “representativeness” of the Aguaruna people (“desconocer su representatividad”), and even questioned the authenticity of the protest letter.

In a further effort to turn the political tides in their favor, the three local Aguaruna organizations put the ICBG researchers in contact with a national-level actor: the Confederación de Nacionalidades Amazónicas del Perú (CONAP). Based in Lima, CONAP is a multiethnic Amazonian indigenous confederation to which OCCAAM, FECONARIN, and FAD claim affiliation, and its president is of Aguaruna origin. Initial discussions culminated in a large meeting in December 1995 in Santa María de Nieva, a small river port in Aguaruna territory. In the absence of the Consejo Aguaruna Huambisa and several other Aguaruna organizations, CONAP convoked a meeting of some community and organizational leaders, among them leaders and delegates of the three organizations already interested, two other Aguaruna organizations, the Organización de Desarrollo de las Comunidades Fronterizas del Cenepa (ODECOFROC) and the Organización Aguaruna del Alto Mayo (OAAM), and a Huambisa organization, the Federación de Comunidades Nativas del Río Santiago (FECONARSA).

Also present at the meeting were the ICBG researchers, Brendan Tobin from the SPDA, and a Searle representative, establishing the first direct contact between the drug company and Aguaruna representatives. After a long debate about the ICBG project and much discussion about internal issues, OCCAAM, FECONARIN, and FAD accepted the ICBG research in their affiliated communities, confided in their national-level associate, CONAP, and unofficially incorporated a consortium of Aguaruna organizations which hereafter I will refer to as CONAP and Affiliates. While OAAM communities initially fell outside of the research area, they were later included in the ICBG agreement and constituted a fourth local Aguaruna partner to CONAP and Affiliates.⁹ An important issue discussed during the 1995 meeting was the possible inclusion of ODECOFROC and FECONARSA. CONAP leaders explained that while the other organizations had registered as nonprofits (*asociaciones*

civiles), these two lacked formal recognition within the Peruvian legal system and, further, had previously maintained close affiliations with the Consejo Aguaruna Huambisa. Both the president of ODECOFROC and a delegate from FECONARSA used the occasion to criticize the Consejo. The seemingly eternal association between the Consejo and its once-celebrated founder and visionary leader converted the event into an opportunity to pass judgment on Evaristo Nugkuag, now a common target in the Aguaruna’s internal blame game. In fact, it was during this meeting that ODECOFROC’s founder and first president announced that his organization would soon formally disassociate itself from the Consejo. Although both organizations eventually gained legal status as nonprofits and disassociated themselves from the Consejo, neither ever became a member of CONAP and Affiliates or received benefits from the research.¹⁰

As a result of this historic meeting, three persons were designated to negotiate the contractual details of CONAP and Affiliates’ acceptance with the ICBG researchers and Searle: César Sarasara, CONAP’s Aguaruna president, Mercedes Manriquez, a lawyer from Lima working with CONAP, and Brendan Tobin of the SPDA. After various discussions and drafts of potential agreements, in May 1996 a team including Sarasara and the two lawyers traveled to St. Louis to negotiate the final details with Searle and its lawyers face to face. Figure 2 diagrams the resulting agreement structure.

In this second round CONAP and Affiliates, represented by Sarasara and the two lawyers, were in direct contractual negotiations with Searle, the relations no longer being mediated by Washington University. This is a significant achievement for the indigenous peoples involved, and they recognize it as such. It is certainly one of the first instances of an indigenous group’s representing its own interests—albeit as mediated by non-indigenous legal experts—with a large pharmaceutical entity in negotiations over the potential commercialization of traditional knowledge. This round of negotiations resulted in a different royalty and annual collection payment scheme and, most significant, a know-how license agreement. Tobin (personal communication) believes that the know-how license is a truly novel step in contract law, for the first time giving a group of indigenous peoples control and full ownership of its traditional knowledge. In legal terms the representatives of CONAP and Affiliates, who constituted the only indigenous signing partners, licensed directly to Searle the traditional medicinal knowledge, conceived as collective know-how, of all the Aguaruna for an initial four years (see Tobin 1999*b*, n.d.). The annual payments distribut-

9. Acceptance by CONAP and Affiliates of course did not automatically mean acceptance by all Aguaruna communities formally affiliated with those organizations. In many instances, individual communities challenged CONAP and Affiliates’ authority to accept the project on their behalf and refused to permit the ICBG researchers to work in their communal territory despite their affiliation with one of the participating organizations. While there is not enough space to document all this local dissent, it is important that it be mentioned, since even the apparent incorporation of these organizations provoked substantial internal debate, discussion, and disagreement among Aguaruna community leaders.

10. The information presented about this meeting of Aguaruna organizations with the ICBG researchers, SPDA, and Searle is taken from notes that form an appendix to the ICBG biological collecting agreement signed in 1996. Ironically, despite the absence of then-active leaders of the Consejo Aguaruna Huambisa, the secretary, Santiago Manuig, was a former president of the Consejo (1989–93). Having developed his own conflictive relationship with Nugkuag, he used the meeting to call into question the activities of his successor.

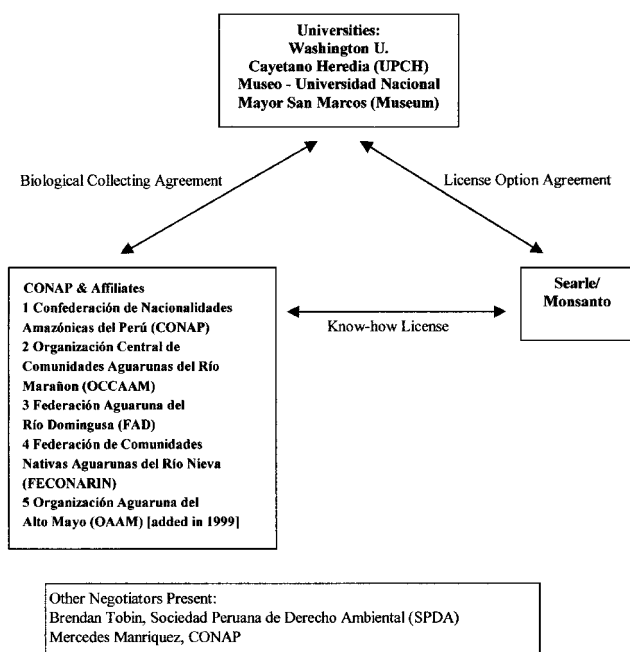


FIG. 2. Agreement structure of the second round of ICBG-Aguaruna negotiations.

able by Searle were reformulated and divided between a flat “collection payment” for the plant samples and “license fees” for the Aguaruna medicinal know-how. The know-how license also included a stipulation of two early, nonreturnable royalty payments (termed “milestones”) to CONAP and Affiliates contingent on Searle’s reaching two very advanced stages of new-drug approval based on a lead from the ICBG research.

In addition to the know-how license, CONAP and Affiliates signed a biological collecting agreement with the ICBG researchers specifying the terms and conditions of the field collections. This agreement included a stipulation “to ensure the fair and equitable sharing of benefits among the Aguaruna People” (article 3.01). The agreement thus remains open to other Aguaruna communities, provided that they apply for inclusion by affiliating themselves with an existing Aguaruna organization, and to other Aguaruna organizations, provided that they are approved by CONAP and Affiliates in a traditional assembly and dialogue called the *Ipaamamu* that has become central to CONAP’s strategy for dealing with the local constituency (article 7). This measure of inclusion and the promotion of equitable sharing are significant because the Aguaruna consortium represented by CONAP and Affiliates in fact accounts for less than half the Aguaruna population (see Tobin 1999a). Nonexclusivity in the contracts reflects the fact that the property rights claim being made to indigenous medicinal know-how is a collective one in the name of the “Aguaruna People,” the category that has been consistently used in the ICBG agreements.

The definition of “Aguaruna People” used in the biological collecting agreement identifies them as those “who live in the collection area,” while the “collection area” is defined as the areas “inhabited by members of the Collaborating Organizations” (article 1). “Collaborating Organizations” (article 1.06) refers to what I have chosen to call “CONAP and Affiliates” as a way of reflecting the contractual nature of this attempt to incorporate the specific subset of Aguaruna organizations that signed the agreement. This definition excludes Aguaruna in other organizations or other nonorganized areas who choose not to associate themselves with CONAP and Affiliates and may not even know that such a possibility exists. Ironically, these nonparticipants, including the Consejo Aguaruna Huambisa, constitute a clear Aguaruna majority. Further, it is quite clear from the second-round agreements that any and all monies are and will continue to be funneled directly through CONAP and Affiliates (article 3.01). In short, the resulting ICBG agreements, while they may contain pretensions to nonexclusivity among the indigenous partners, effectively produce the opposite. The legal arrangement clearly moves in the direction of contractual and financial legitimization of CONAP and Affiliates as representatives of the “Aguaruna People.”¹¹

In essence, therefore, the relatively arbitrary exclusivity and oversimplification represented by RAFI’s move to legitimate the Consejo Aguaruna Huambisa in protest of a bioprospecting project in round 1 was undone and then effectively duplicated at another level by ICBG and Searle’s countermove to legitimate CONAP and Affiliates in support of the project in round 2. The major difference was in their opposed agendas and the indigenous organizations they chose to back as the legitimate “voice” of the “Aguaruna People.”

Calculating the Results: Bad Odds and Big Expectations

With the multiple agreements in place, the ICBG-Aguaruna project finally got under way with renewed collections in 1996 and worked in communities affiliated with OCCAAM, FAD, FECONARIN, and OAAM over the next four years. The researchers visited 22 Aguaruna communities and collected approximately 3,500 medic-

11. The Peruvian state, despite its signing of the Convention on Biological Diversity and the participation of two major Peruvian universities (one public and one private), was notably absent (except for the requirement of licenses from the Ministry of Agriculture) in both rounds of the ICBG-Aguaruna negotiations (Tobin n.d.:6–7). Interestingly, however, on the basis of its experience with the case the state has begun promoting the opposite approach. The agreements between the Aguaruna and the ICBG and Searle have been used as a model for proposed legislation for access to genetic resources and traditional knowledge in which the state will take more of an interventionist role (see Tobin n.d.:31–32).

inal extracts.¹² In terms of global biodiversity equity and the goals of the Convention on Biological Diversity, the host-country benefits were not insignificant. According to Lewis (interview, 2000), the value of the grant funds, resources, and technology brought to Peru by the project totaled nearly \$1 million. The majority of these benefits were made possible by public grant funds and were channeled into the two Peruvian universities, providing research and training opportunities for Peruvian students and faculty (Lewis et al. 1999:81). The ICBG project also brought several environmental training and higher-education opportunities to the Aguaruna involved (Lewis, interview, 2000). Two Aguaruna in particular were trained so thoroughly in botanical methods and scientific classification of plants that they eventually went on to direct their own field collections (Lewis et al. 1999:81). CONAP and Affiliates used a portion of the annual know-how license and collection fees contributed by Searle for their own organizational needs and distributed the rest to their affiliated communities in the form of small loans, scholarships for Aguaruna students, and individual reimbursement to field informants who worked with the ICBG researchers in identifying medicinal plants.

One of the most significant effects of the ICBG is the amount of political and symbolic capital it has bestowed on CONAP and its Aguaruna president, César Sarasara. When I first visited in early 1997, CONAP consisted of little more than César Sarasara in a small Lima office with a couple of desks, a phone, and a typewriter and was constantly borrowing money to pay the rent and utility bills. A couple of years later it was staffed by a number of salaried workers, sponsored events, and had the visible material items found in any functioning NGO (computers, fax machine, active web site, etc.). Sarasara, whose business degree and Aguaruna origin make him an appealing leader and a savvy multicultural negotiator, has become a frequent guest on the global indigenous-representative circuit. He is much sought-after by the press, has been awarded a prize by the International Society of Ethnobiology, and has become a coauthor of a scientific paper—all events directly related to the project.¹³

The rise of CONAP and Affiliates has its counterpart in the fall of the Consejo Aguaruna Huambisa, whose momentary success in questioning the legitimacy of the ICBG research via RAFI was soon overshadowed by

CONAP and Affiliates' successful renegotiation of the project. Questioning the legitimacy of the Consejo, in part because of its strong association with its former controversial leader, has become commonplace in Peru for both external actors and the indigenous peoples themselves. One of the founders of the Consejo, Pancho Juwau (interview, 2000), remarked cynically that when people mention the Consejo now they think, "Eso apesta desde lejos" (That stinks from far away).¹⁴

There is another important and sobering result of the ICBG-Aguaruna experience: a clear clash between the odds and the expectations generated in the course of the negotiations (see Greene 2002). CONAP and Affiliates' attempt to privatize Aguaruna traditional medicinal knowledge has resulted in local expectations of large sums of money. Indeed, raising expectations of a substantial economic gain over the long term became an essential part of their strategy to persuade local communities to accept the project. A past president of FAD reported, for example, that the Aguaruna on the Domingusa River—in good millenarian fashion—were expecting millions of dollars in the year 2000, merely four years after the initiation of field collections. In meetings of CONAP with OAAM's affiliated communities I witnessed leaders several times creating high expectations by speaking about the arrival of millions of dollars almost as if it were guaranteed. The realization that these expectations were exaggerated has already begun to manifest itself in local resentment toward the leaders of CONAP, who are deemed responsible.

From the outset Searle used a screening process employing high-throughput machinery that tested plant samples for bioactivity against certain diseases that the company had identified beforehand in the hope of randomly producing interesting leads. This approach effectively ignored the specific ethnomedicinal information collected by the ICBG researchers that had been the object of so much political controversy in the first place.¹⁵ Further, the tests were limited to diabetes, cardiovascular problems, and inflammatory diseases, health con-

12. The number 3,500 is slightly misleading in that, according to Lewis (personal communication), many of these extracts are duplicates of the same plant. It is also important to note that other nonmedicinal plants (some of them unidentifiable by the Aguaruna) were collected for the purposes of a biodiversity inventory (samples to be sent both to the Museo de San Marcos in Lima and to the Missouri Botanical Gardens) that was not made available for screening. Therefore the total number of plants collected was in the neighborhood of 4,800 (Lewis, interview, 2000).

13. Sarasara's interactions with the press are various (for examples, see Lambrecht 1998, Chatterjee 1997). He was awarded the first José Guallart Prize by the International Society of Ethnobiology (Lewis, personal communication) and is a coauthor of Lewis et al. (1999).

14. The detailed history of indigenous organizations is best left for another paper. While the Consejo was originally intended to represent several river areas (Marañón, Chiriaco, Nieva, Santiago, Cenepa, Domingusa) and managed many projects, OCCAAM was largely isolated. FECONARIN and FAD were founded around 1990 by Aguaruna disillusioned with the Consejo, and by the mid-1990s ODECOFROC and FECONARSA had appeared in the same area with familiar criticisms of the Consejo. The current leaders of the Consejo are extremely self-conscious about the organization's fragmentation and loss of prestige. The past two or three presidents have all begun taking measures to address what they call the Consejo's "crisis." So far the results are fairly meager.

15. Some would argue, of course, that the mere fact that the plants have already been identified by the Aguaruna as medicinally useful is in itself an intellectual contribution (a sort of prescreening). My own opinion is that the contribution is restricted at that point to a purely abstract utility without any contextual, practical, medical, cultural, or social content. Generally ethnobotanists believe that the chances for a plant identified by local informants to become useful in research and development are much greater if detailed and specific information about its "usefulness" is used as a guide in researching how the plant might be developed (see Farnsworth 1990).

ditions that are much more common in Searle's consumer base in wealthy countries than among the Aguaruna.¹⁶ In September 1999, at the final ICBG annual meeting with CONAP and Affiliates, Walter Lewis of Washington University announced on behalf of Searle (which had sent no representative) that the pharmaceutical company had found no leads worthy of pursuit and did not intend to extend the know-how license. From Searle's economic point of view, the deal was closed.

The fact that Searle never really explored the Aguaruna know-how that it had gone to so much trouble to acquire does not mean that the company did not gain from participating in the ICBG program. Monsanto featured the ICBG-Aguaruna project in an annual report to its consumers and shareholders as an important effort to conserve the tropical forest and promote benefit sharing in accordance with the Convention on Biological Diversity, praising the Aguaruna's traditional medical knowledge (Monsanto 1998:28). This suggests complicated motives that involve a concern with marketing and company image in an era in which sustainable development is the discourse of the day as much as or perhaps more than a concern with successful cooperation with indigenous peoples on an environmentalist agenda. Searle's cancellation of the know-how license was, of course, entirely legitimate from a financial and contractual point of view. After all, business is business.¹⁷

Bioprospecting and Indigenous Property Claims in the Broader View

The case studies that are now emerging complicate the clichéd accounts of bioprospecting negotiations, indigenous cultural property claims, and the politics of indigenous representation. Two of the best-known cases involve patent challenges, a successful one against a transnational corporation and a less successful one against a U.S. researcher. After several years of public protest and concerted legal effort by a coalition of Indian and U.S. research institutes, NGOs, and farm organizations, the European Patent Office revoked a patent on a fungicidal compound derived from the neem tree held by the agro-industrial company W. R. Grace (see Rag-

havan 2000). Vandana Shiva (2000), one of the most visible Indian activists and scientists involved in the protest, has shown that the medicinal and pesticidal properties of neem have been known to farmers in India for millennia and that the tree figures as a sacred symbol in Sanskrit and Islamic traditions. In arguing that neem has "become a symbol of Indian indigenous knowledge," she reveals an apparent conflation of the modern Indian nation with the many ancient and contemporary peoples native to the subcontinent that have recognized the tree's multiple uses.

In 1999 a coalition formed between North American environmental law NGOs and the Coordinadora de las Organizaciones Indígenas de la Cuenca Amazónica (COICA), based in Quito, Ecuador, filed a similar petition with the U.S. Patent and Trademark Office (PTO) requesting the cancellation of a U.S. researcher's patent on an ostensibly "new" variety of ayahuasca. Indigenous peoples throughout the Amazon have used this vine for centuries in the preparation of hallucinogenic remedies that are central to local cosmologies and traditional forms of healing. The PTO initially recognized the validity of the petition but later, on very shaky legal grounds, declined to revoke the patent. Representatives of COICA considered this decision a "profoundly disturbing sacrilege and assault on their traditional values" (Wiser 2001:13).

These patent disputes show that some indigenous peoples and even some spokespersons and activists who identify their entire Third World nations with indigenous peoples (as in the neem case) feel deeply affronted by some cases of politicized bioprospecting. The apparent sacrilege committed and the global historical inequities reenacted when foreign companies and researchers claim culturally sacred remedies as patented property clearly play a crucial role in the way in which indigenous and Third World indigenous nationalists conceive of their cultural property claims. In the name of all Amazonian peoples, for example, the president of COICA, Antonio Jacanamijoy, defended his organization's position by stating that ayahuasca is "a sacred plant used to cure our illnesses, clean our spirits, and predict our future. Ayahuasca belongs to all our communities that use it and therefore it is impossible that it could be the property of just one man" (COICA 2002:2). In the neem case Shiva (2000) makes it clear that the patenting of a method of neem seed emulsion by W. R. Grace is sacrilege. Furthermore, she argues that this case of international "bio-piracy" not only was legally unfounded (a claim that was upheld by the European Patent Office) but would have resulted in a price hike that would have adversely affected traditional farmers who relied on neem seeds.

The ICBG-Aguaruna negotiations raise a set of issues that have received less attention in the bioprospecting and indigenous rights literature. In particular, I have emphasized the politics involved in legitimating (and delegitimizing) indigenous forms of representation, the ramifications of the incorporation of indigenous groups in claiming culture as property, and the possible clash

16. For an account of the division of research interests between Searle, UPCH, and Washington University and their results thus far, see Lewis et al. (1999).

17. Gaining a fuller impression of Searle's interests and motivations has proved difficult, especially given corporate turnovers and takeovers. I spoke with an ex-Searle representative who had previously worked closely with the ICBG researchers and had contact with CONAP and Affiliates. He chose not to go on record with any information about the project, given that Searle was no longer his employer. Press releases from Searle related to the project were unavailable because of the corporate restructuring. When Monsanto merged with Pharmacia/Upjohn, Searle was dissolved and restructured into Pharmacia Corporation. A media representative from Pharmacia generously provided me with some articles that mentioned the ICBG project from the company archive, but he was unable to locate any press releases distributed by Searle itself and had no information on current contacts within the company with knowledge about the ICBG project.

of expectations associated with the pharmaceutical sector's tenuous commitment to bioprospecting. These problems are not unique to the ICBG-Aguaruna case. The events leading to the collapse of an ICBG project with the Maya of Chiapas, Mexico, in 2000 are strikingly similar (see Brown 2003, Nigh 2002). Using a similarly aggressive Internet campaign, RAFI again inserted a bio-piracy-watchdog agenda into the negotiations in conjunction with a faction of Maya representatives opposed to the research and this time helped bring the project to a complete halt (RAFI 2000). Similarly labyrinthine politics involving rival indigenous representatives, NGO intervention, and lack of consensus about legitimate representation of the Maya people played a prominent part. The corporate partner in this case was a start-up drug company with capital resources so limited as to make the likelihood of a major drug discovery roughly equivalent to that of winning the Mexican lottery, according to Brent and Elois Ann Berlin, the principal investigators of the Maya project (2002:467). Controversy over indigenous representation and distrust of the motives of foreign bioprospectors were matched again by a heightened and somewhat distorted perception of the potential economic ramifications of such research into traditional plant knowledge.

Of the eight ICBG grants awarded, the two that were clearly the most controversial, ICBG-Aguaruna and ICBG-Maya, entailed direct negotiations between indigenous peoples and bioprospectors and the intervention of interested third-party NGOs claiming to act on behalf of or in conjunction with those indigenous peoples. Meanwhile, other ICBG projects have seemingly been carried off without the slightest scandal in collaboration with host-country universities, research institutes, and governmental agencies. Cori Hayden (n.d.) has been tracking another ICBG project that is collecting plants in Chile, Argentina, and Mexico, working with public and private universities and research institutes. ICBG-Latin America has received two rounds of ICBG funding and established apparently cordial relations with its host-country partners (see Timmerman et al. 1999). Hayden attributes this apparent success to a strategic avoidance on the part of the researchers of the indigenous-knowledge question and of identifiably "indigenous" communities that might claim their own cultural property rights. The ICBG researchers avoid this issue by buying plant samples in urban herbal markets from local vendors. They consider this "de-indigenized" plant knowledge circulating in urban markets in an already commodified form as part of the national public domain. Thus, while they purchase plants at a "fair" price from local vendors, the only long-term benefit-sharing obligation they feel compelled to recognize is to the nation, represented by their host-country research partners' institutions.

The University of Illinois at Chicago (UIC) ICBG program in Laos and Vietnam seems to share some of these dynamics (see Soejarto et al. 1999). The UIC researchers make collections primarily in national parks (e.g., areas demarcated as "public" national space) and in contrac-

tual collaboration with state and private research institutions in the host countries. For the ethnobotanical component of the project, contact between the foreign researchers and local communities is mediated by state institutions such as the National Committee of Ethnic Communities in Vietnam and the Ministry of Health in Laos. As beneficiaries of the project, the host-country institutions essentially speak for and must represent the interests of the local peoples in the ICBG research (p. 107). Bioprospectors of this sort approach benefit-sharing obligations primarily as a national problem to be resolved with state or other host-country institutions that do not present uncertainty about institutional legitimacy and representation.

Contrary to the tendency toward hyperbole in accusations of global bio-piracy and rampant exploitation of indigenous knowledge, the current state of affairs in pharmaceutical research suggests that we need a more subtle understanding of the dynamics at work. Several observers have noted that from an investment standpoint drug companies allocate very little to bioprospecting of any sort compared with their investment in the synthetic, computer-modeled and engineering-based research which constitutes the preferred method of drug development (see Aylward 1995; Albers-Schönberg 1995; Goering 1995:10). Discourses of sustainable development and environmental conservation will no doubt continue to influence drug companies to consider demands in the public sphere for an environmentally responsible capitalism. A greener, moral politics requires a greener, more moral capitalism. Yet, there are inherent contradictions in the idea of "green capitalism" when it seems more profitable to maintain the capitalist status quo (see Gersh 1999). Interests in capital accumulation and survival among corporate competitors easily outweigh interests in a renewed moral and environmental order. A recent report reveals that despite the industry emphasis on pioneering research and development, drug manufacturers are in fact remarkably uninventive entrepreneurs that dedicate more financial resources to advertising and corporate-image campaigns that boost sales than to discovering new medicines (Public Citizen 2001). The study also finds that a considerable proportion (more than half) of new drug products released between 1982 and 1991 were not miraculous new medicines but "me-too" drugs, slightly modified imitations of already existing products.

The tenuous commitment to bioprospecting by the private pharmaceutical sector is especially pronounced with regard to the kind of bioprospecting that directly relies on indigenous knowledge. The failure of Shaman Pharmaceuticals, a start-up company founded in 1990, to discover a profitable drug based on traditional plant knowledge only adds to the evidence provided by the ICBG-Aguaruna and ICBG-Maya projects. Although Shaman maintains a stance consistent with the Convention on Biological Diversity, ready to implement profit-sharing mechanisms with local peoples who contribute traditional plant knowledge, such a scenario has yet to materialize. Despite some significant advances with an

experimental drug named Provir, based on the traditional Amazonian remedy *sangre de grado*, Shaman was forced to close down its pharmaceutical research division and is currently marketing an unprofitable herbal supplement, still operating with the same environmental and moral ideals under a mountain of corporate debt (see Brown 2003, *Economist* 1999). This is reason enough for pause and reflection.

Quandaries of Indigenous Representation and Incorporation

Pharmaceutical companies' relative uncertainty with respect to bioprospecting and concerns over corporate image in an environmental era and indigenous peoples' increasingly common efforts to treat knowledge as property produce widely differing expectations, assumptions, and strategies for negotiation. A panel of external experts identified the creation of unrealistic expectations surrounding the potential economic rewards of bioprospecting in developing regions as one of the major dangers of the ICBG program's design (see Report of a Special Panel of Experts on the International Cooperative Biodiversity Group 1997). Others have pointed to the raising of expectations in economically poor but biodiversity-rich nations as a general problem created by the rhetoric of bioprospecting (see Macilwain 1998). I would add that while the creation of inflated expectations may be a problem within bioprospecting research as a whole, current cases suggest that it is most exaggerated and politicized when negotiations involve the question of indigenous cultural property and indigenous representation. Indeed, scholars such as Cori Hayden suggest that in evading the indigenous-knowledge question and designing bioprospecting activities in terms of obligations to the nation-state some bioprospectors consciously attempt to avoid controversy, misunderstanding, and allegations of bio-piracy. Why do contemporary bioprospecting arrangements with indigenous peoples produce such contention?

One answer, as some of these cases reveal, is that the emergent global politics of representation and mobilization in which many indigenous peoples are involved has yet to be fully recognized, legitimated, and routinized by national and international societies and indigenous communities. The debate over who speaks for whom in indigenous affairs continues to create crises of representation in which indigenous leaders, organizations, and spokespeople are forced to re/negotiate their representativeness both among themselves and in relation to the agendas of foreign actors who typically hold positions of greater power, resources, influence, and prestige.

Coming to terms with the influence of NGOs in this process is an important step, since relatively little has been written about them from an anthropological point of view. While critics see the more powerful international NGOs as part of a neoliberal project to perpetuate a false consciousness of marginalized peoples' "empowerment" (see Petras 1997; Hardt and Negri 2000:36), oth-

ers argue that NGOs represent the primary force of democratization, social service, and development in the age of the shrinking state (see Meyer 1999, Bebbington et al. 1993, Clark 1990). In the case of indigenous peoples, external NGO allies and indigenous institutions, often of the NGO sort themselves, can and do provide important leverage against private and state interests. But as bureaucratic institutions with their own political and social agendas they also often operate at considerable geographic, cultural, and linguistic distance from local constituencies, which can result in a tendency to oversimplify and romanticize indigenous realities. For example, the currently popular image of Amazonian Indians as guardians of the tropical forest is in significant part due to the alliance created between environmental NGOs and indigenous peoples in the past two decades (Conklin and Graham 1995). Similarly, examination of bioprospecting negotiations indicates that NGOs operating in conjunction with indigenous representatives play a determinative role in supporting indigenous claims while also creating exaggerated expectations about the economic potential of indigenous intellectual property claims and playing into the fear associated with the widespread discourse of pharmaceutical bio-piracy. Such organizations sometimes provide key resources and scientific and legal expertise, as in the ayahuasca and neem patent cases. In other cases their activities, however well intended, effectively result in legitimating the indigenous groups that most clearly conform to their own institutional, political, and social objectives and forms of anticorporate, antibioprospecting self-representation without ever confronting the complex political realities of local populations.

NGOs, however important, are in fact just one subset of actors among many that influence the negotiation and de/legitimation of indigenous representativeness. Researchers of all sorts, religious organizations, international funding agencies, corporations, and state bureaucracies all influence and complicate the politics of indigenous representation in accordance with their own agendas. The tendency of NGOs to distort claims of indigenous representation in protest of bioprospecting are matched by the tendency of researchers, agents of public institutions, and pharmaceutical corporations to do the same in their own support. Both sides seek out and attempt to legitimate indigenous allies in accordance with their institutional, political, or economic goals. Furthermore, as we have seen here, dissent and internal discussion within indigenous groups over the issue of representation often gives potential credence to both sides of the argument, just as it reveals the problems inherent in negotiating collectively owned cultures with only a selection of indigenous brokers. Because of the collective nature of claims to culture as property, there is a common assumption on all sides of the debate that indigenous collectives must possess a centralized structure of representative authority comparable to that of consolidated nation-states with which external actors can negotiate. Establishing who are the legitimate representatives of indigenous collectives is, however, often a matter

of internal and external debate. In circumstances where indigenous institution building is still in process, it is no surprise that the legitimacy of any particular indigenous organization varies with the prevailing political winds and the degree of access to more powerful external actors.

This does not, I suggest, make indigenous peoples innocent pawns of more powerful players but rather demonstrates their active engagement in wider networks of power as political strategists whose decisions have direct repercussions on their legitimacy as indigenous representatives. Key legal victories and the successful insertion of indigenous agendas into the decisions of more powerful economic and political institutions and actors indicate that indigenous strategies can under the right circumstances prove extremely effective, but “victory” is usually relative. The costs of politicizing culture and treating it as property must also be taken into account. While global indigenous mobilization is a sign of significant strength for some of the world’s most marginalized peoples, the politics of indigenous authorities and spokespeople remains a highly contested sphere. Emergent indigenous political representation is simultaneously supported and constrained by national and international alliances that are continually identifying legitimate mediators between external interests and local communities in ways that are as much dependent on their own agendas as on those of indigenous collectivities.

While some of the cases examined here highlight primarily concerns about sacrilege, misrepresentation, and exploitation, others force us to consider the ramifications of the economic expectations and aspirations born from indigenous cultural property claims. Some have emphasized that cultural property claims, based on Western intellectual property laws, imply a privatization derived directly from market models and ideals (see Brush 1996, 1999; Coombe 1998, 1999). The cases analyzed here demonstrate that cultural property claims are in fact marshaled both against outside market interests and in accordance with indigenous peoples’ own internal interests in putting the market to use for their own mobilization. The neem and ayahuasca cases, for example, revolve around the perceived moral, cultural, and economic attack on a nation’s and an indigenous people’s right to prohibit collectively propertied knowledge from becoming the exclusive patented property of a corporation or a private individual. The material presented here on the ICBG-Aguaruna case suggests that we must consider the ways in which indigenous claims to cultural property also lead to strategies of local entrepreneurship and examine the potential ramifications of these strategies. Treating culture as property is a strategy indigenous groups use to adopt and transform the logic of their Western counterparts—to market themselves as Indigenous People Incorporated and create a form of politically informed economic activity that in another context has been labeled “tribal capitalism” (see Rata, quoted in Friedman 1999:9).

The ICBG-Aguaruna project demonstrates that indig-

enous entrepreneurship is also very much a part of claims to cultural property. The know-how license signed with Searle is one clear instance of it, and another is the application for a utility patent that Washington University researchers filed in January 2003 (Lewis and Ramani n.d.). The lack of corporate support since Searle’s withdrawal has not hindered Walter Lewis’s ethnobotanical research on Aguaruna plant samples, an endeavor that has produced leads in the area of antimalarials for which he and his colleagues are seeking patent protection. In the patent application the inventors assign equal ownership (25% each) to members of the original four ICBG partners. One of those four potential patent owners is CONAP, which represents the local Aguaruna federations that are partners to the agreements. Should the patent be granted, CONAP would become probably one of the first indigenous institutions anywhere to own patented knowledge. The likelihood of a patent’s being converted into profits is, of course, small, but one cannot fail to acknowledge the apparently economically interested nature of this particular brand of indigenous mobilization.¹⁸

What exactly is at the core of the contemporary indigenous strategies of mobilization witnessed not only in bioprospecting negotiations but in traditional crafts and folk music marketing and eco- and ethno-tourism? Ultimately what is being represented, discussed, negotiated, and in some instances sold is indigenous identity itself (see Brysk 2000: chap. 4; Sylvain 2002; Conklin and Graham 1995; Friedman 1999). It is not merely Amazonian plant knowledge, Andean music, or tours of a San village that are the object of privatization. At a more fundamental level, indigenous group identities themselves are subject to these strategies, since it is often the connection to an indigenous culture and identity that makes these commodities potentially attractive to global consumers and producers.

Privatizing and marketing parts of their traditional cultures or resources is another strategy used in a broader politics of self-determination that emerges in connection with the economic demands of a global market. It is precisely through this kind of indigenous entrepreneurship that incorporated groups such as CONAP and Af-

18. The patent makes specific mention of the individual informants who identified the plants from which the patented compounds have been isolated and the Aguaruna communities in which they live (Walter Lewis, personal communication). The decision to include only CONAP in representation of the other four Aguaruna federations, rather than all of them together as in the biological collection agreement, in the patent application is curious. As a national-level actor CONAP is obviously more stable and convenient for coordinating such matters. Unlike the other local federations involved, however, it is not an exclusively Aguaruna organization but an interethnic confederation, and other indigenous Amazonians constitute the majority of CONAP’s local affiliates (particularly important are the Shipibo and Yanesha peoples). None of them had anything to do with the ICBG collections, but as participating members of a democratically run organization they presumably have as much claim to the patented property as the Aguaruna organizations that CONAP represents. The complexities of identifying stakeholders, contractual partners, and property owners of indigenous knowledge seem only to multiply.

filiates promote a specifically *indigenous* mobilization. They argue that indigenous mobilization needs more than a solid historical and cultural foundation in today's multicultural identity politics. It also requires economic viability, for survival as an organized social movement is directly tied to the financial solvency of the institutions indigenous groups have founded and the communities they represent in a world dominated by market relations. This complicated state of affairs makes untenable any explanation of indigenous incorporation as a simple sell-out to corporate ideals. It also calls into question the simplified images of the indigenous masses living in unity and clamoring against the alleged evils of corporate America. Both strategies are at work, and they present opportunities for advancing an indigenous agenda in some circumstances and harbor potential dangers to it in others. The adoption of corporate ideals is part of indigenous mobilization, but it cannot be separated from the broader issues of historical inequity, cultural sacrilege, and misrepresentation around which indigenous peoples also organize struggle. Strategies of indigenous incorporation mix with local cultural frameworks and are deployed as part of a broader indigenous politics of identity and self-determination (see Coombe 1998: chap. 5).

Two principal dangers emerge, however, with regard to such moves to privatize indigenous knowledge, culture, and identity. One of these, as the history of capitalist expansion has repeatedly made clear, is that the incorporation of indigenous groups could just as likely lead to the monopolization of cultural identity and property by certain indigenous classes and the marginalization of others as to collective political-economic mobilization. The other is that the creation of unrealistic expectations about the market value of traditional knowledge, cultural property, and incorporated identities will continue to sow discontent not only between indigenous groups and the various agents of development and modernity but between the indigenous constituency and its brokering leadership. In either case, there is still space for ample debate in the search for a way forward.

Comments

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Greene's paper addresses an important and controversial issue. Rather than talking about its strengths and weaknesses, however, I want to comment on what it leaves unsaid.

Greene rightly points out that indigeneity is a highly contested process, but I do not think that we can dismiss the neocolonial influences on this process as easily as

he does. If indigenous self-representation is "at the heart of recent anthropology," then we cannot dismiss the discursive effects of the colonial project (Banerjee 2000). In fact, we must place the discussion of colonialism and the role of anthropology in producing indigenous subjects in the center of the debate. Greene raises the question of "representative legitimacy." What is not made part of the discussion is why indigenous communities have to prove that they are legitimate and why the grounds for establishing legitimacy are in most cases a product of the colonial system. To claim representative legitimacy they are forced to conform to the categories of what Wolfe (1999) calls "repressive authenticity." "Indigenous ecology" thus comes to be represented as a pristine source of knowledge separate from indigenous economy and society. Like Spivak's subaltern, the indigenes can have only a *quoted* existence in a larger statement that belongs to the anthropologist alone. We talk about them and occasionally quote them, but in the end we are their authors.

As Osuri (2003) argues, these discourses do not explain the confluences of indigeneity as identity and indigeneity as a series of events that make visible the relationships between non-indigenous and indigenous communities. Rather, they obscure the notion that the production and consumption of indigenous identity occur within Western (post)modern modes of theorizing identities, a process that disavows the colonial context within which "indigenous policies" are developed and indigenous identities are regulated. Indigeneity can also be represented as a set of relationships between indigenous communities and their colonizers that produces empowering or disempowering representations in the context of colonial relations of power. Despite acknowledging the domination effects of colonialism, Greene does not seem to accept that indigenous peoples continue to be regulated by structures that are a legacy of the colonial era and must conform to what for many of them are still alien categories.

In fact, the politicization and treatment as property of culture that Greene talks about are precisely the result of applying Western categories to non-Western sites. "Value" as defined by Western capitalism can be created only if indigenous culture and knowledge are converted to property, and indigenous communities all over the world are forced to employ these categories if they want to protect their knowledge. What is missing from Greene's analysis is the consequences of this process for the community. While he discusses the range of stakeholders involved in the bioprospecting arrangements, one voice is missing, and that is the voice of the people. In revealing the complexities of interactions between First World corporations, Third World governments, indigenous organizations, and NGOs, he is silent about the disparities in power among them—disparities that ensure particular outcomes while precluding others.

Greene rightly identifies the vagaries of the market and the "tenuous commitment" of the pharmaceutical sector as factors that can influence the future of indigenous involvement in bioprospecting. For instance, on

November 11, 2003, the president of the Aveda Corporation announced that it was discontinuing its indigenous product line to “demonstrate our ongoing support and respect for indigenous peoples in their efforts to protect their traditional knowledge and resources” (Conseil 2003). He also declared that the company would begin the formalities necessary to abandon any rights it might have in the “indigenous” trademark. Leaving aside the problematic question of why a multinational corporation should possess rights in an “indigenous” trademark in the first place, we can only speculate as to the motives behind the company’s decision.

If “Indigenous People Incorporated” is to be a genuine agent for promoting indigenous self-determination, significant structural barriers in the political economy will need to be overcome. The high failure rate of indigenous enterprises has as much to do with lack of access to infrastructure as with profound incompatibility with many elements of the market system. The business success of indigenous enterprises is always predicated on a separation of commerce and culture that is alien to most indigenous communities. It also denies the historical legacy of indigenous dispossession and assumes the existence of a level playing field on which indigenous communities can compete in the mining, tourism, forestry, and arts sectors of a global economy.

The indigenous economy is a hybrid economy with market, state, and customary components, all of which need to be recognized and integrated in assessing indigenous economic development (Altman 2001). Developing a sustainable indigenous enterprise implies understanding the relationships among these components. It is crucial that such a configuration be informed by an explicit social-justice agenda. The challenge for indigenous communities is to determine the best form of political and cultural mediation for delivering the economic and social outcomes they desire, and this will depend on the political, economic, social, cultural, and environmental contexts of each community.

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Greene’s article provides a much-needed case-based approach to analyzing bioprospecting arrangements. The broader global context in which he situates his detailed analysis is effective in drawing attention to some fundamental assumptions about these kinds of projects that merit further consideration.

Having also traveled to Santa María de Nieva and Lima in 2002 to interview some of the same actors about their involvement in the ICBG-Aguaruna bioprospecting project, I find that Greene has presented a fair and reasonable account. As he notes, some details cannot be reconciled because of conflicting versions of the same incident by different actors or the unavailability of documents. However, the case still offers a rich opportunity to understand

some of the political, cultural, and economic complexities that underlie international, multi-institutional, and cross-cultural bioprospecting arrangements. Such an opportunity is also rare—more typically, those involved in contentious projects tend to protect themselves from further scrutiny and criticism. In this respect, I think that the individuals who agreed to be interviewed and share redacted copies of contracts and other agreements for this case study should be commended.

Greene identifies several important contradictions inherent in indigenous self-representation, political mediation, and the legitimacy of who is speaking, for whom, and to whom. An irony exists whether it is state governments or indigenous political leaders who lay claim to cultural knowledge when they are not the traditional heirs of that knowledge. Furthermore, from a practical point of view, it seems that the more the knowledge is distanced from its traditional sources, the more likely that the scientific application of that knowledge will be assessed out of context and the less likely that it will provide drug leads—at least, leads related to the traditional use. Rather than which of the national Aguaruna organizations or regional federations is the legitimate authority to contract with Searle on Aguaruna medicinal plant knowledge, the question—on both moral and practical grounds—becomes whether these are the appropriate signatories for such a contract. The “indigenous entrepreneurship” that Greene discusses may, in fact, be based on intracultural appropriation.

Also worth noting is a fundamental challenge that is not raised by Greene but has plagued the ICBG-Aguaruna and other bioprospecting projects—communication. Not only did actors in the ICBG-Aguaruna have to overcome the geographical distances between U.S. and Peruvian institutions and Aguaruna communities (where there are no roads, let alone an Internet) but they faced challenges in translating lengthy and complicated legal documents and conducting business in three languages (English, Spanish, and the local Jívaroan language). While political agendas to some degree influenced the events that transpired, including the generation of unrealistic financial expectations (i.e., “millions of dollars”), it cannot be ruled out that communication problems leading to a genuine *lack of understanding* also contributed to some of the conflict.

Given Greene’s insightful discussion of roles, motivations, and strategies on the indigenous side of bioprospecting agreements, I was somewhat disappointed in his shallower treatment of NGOs and corporations. Since one NGO was responsible for the majority of the controversy around both the ICBG-Aguaruna and the ICBG-Maya projects mentioned and no other NGO is cited in the context of “distort[ing] claims of indigenous representation in protest of bioprospecting,” the broader generalization of this practice across NGOs seems unwarranted. With respect to corporations, the portrayal of Searle is slightly misleading in this instance, and it is unfortunate that the company’s perspective was unavailable. For example, regarding the expiration of the know-how license, Greene concludes that “after all,

business is business," which does not adequately account for the fact that Searle was, coincidentally, eliminating its natural-products program as the license term came up. Likewise, the biological screens that Searle used to test the Aguaruna plant extracts (i.e., "diabetes, cardiovascular problems, and inflammatory diseases") were, indeed, largely irrelevant to the types of diseases of primary importance to Aguaruna peoples. However, at the time of the ICBG grant application, Searle did have an infectious-diseases division, which had closed down by the time the grant was awarded.

I do not raise these points in defense of any NGO or corporation. Rather, I offer them as a reminder that conclusions may differ depending on the availability of facts under consideration and as an encouragement to probe beneath the generalizations that have, thus far, largely impeded our understanding of the complicated dynamics at work among the various actors in today's bioprospecting arrangements. Overall, Greene makes an important contribution toward a deeper understanding in this regard.

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A decade and more has passed since the United Nations Conference on the Environment and Development in Rio de Janeiro that launched the Convention on Biological Diversity. A key objective of that convention was to create a formal regime of access to biological resources and benefit sharing from their use. This regime was envisioned as a solution to the "bio-piracy" that was perceived to result from the previous system of common heritage. The direct beneficiaries of the new regime were nation-states, which the convention recognized as sovereign owners of genetic resources. Indigenous people and other stewards of biological resources were implied beneficiaries, but their participation in the imagined benefit stream was to be mediated by the state. The decade since the convention was launched has been a disappointment. Very few countries have negotiated or implemented access and benefit-sharing regimes, the flow of genetic resources has slowed, no new drugs have resulted from bioprospecting, large pharmaceutical companies have withdrawn from the screening of plants, and the loss of biological diversity has proceeded apace. While the imagery of the "tragedy of the commons" dominated the formulation of the convention, an increasingly popular image after a decade of convention-inspired politics is the "tragedy of the anticommons" (Heller and Eisenberg 1998). Perhaps the most direct result of the convention has been to raise consciousness in governments and some social groups about the importance of biological resources, but this has been achieved by creating unrealistic expectations about the value of these resources and confusion about "ownership" of genetic resources and intellectual property.

Greene's exploration of the ICBG-Aguaruna is an insightful and important discussion of the way the idea of access and benefit sharing played out in the Peruvian Amazon. The ICBG program is an innovative effort to bring together different sectors engaged in creating, using, conserving, and studying genetic resources. Like other bioprospecting programs, ICBG projects have been most successful when community participation is minimized, but the ideal of the Convention on Biological Diversity and the ICBG has been to create reciprocal flows of genetic resources and benefits that would reach into communities to support traditional knowledge and foster biological stewardship. Greene's article expands our knowledge of the experience of these more participatory projects, and it confirms the suspicion that the difficulties experienced in the ICBG-Maya are not unique.

The logic of the convention and the framework for bioprospecting that follows it are based on the premise that the public-domain or common-heritage approach offered fewer benefits than could be realized by commoditizing genetic resources through contracts between "suppliers" and "users." The benefit stream, however, is powered by granting intellectual property rights to discoveries based on biological resources. The scope of exclusion relating to intellectual property is expanded through the contracting process that is the keystone of bioprospecting. The benefit stream from bioprospecting is defined by the contracting parties—a principle that is relatively unproblematic at the nation-state level but fraught with difficulties at the community level, where political strife within and between communities ensues from the exclusion inherent in contracting.

Greene's description of the power struggles among different Aguaruna groups confirms the observation that development projects have very different meanings for their nominal beneficiaries than for national and international participants, sponsors, and advocates who depend on local clients. It also shows us that actors at the national and international level have multiple and complicated motives and that political influence and opportunities for publicity are as important as genetic resources in the approach to local communities. The history of the Maya and Aguaruna ICBG projects would seem to suggest that future bioprospecting will eschew direct community participation. Nevertheless, the World Intellectual Property Organization is actively developing a model for the protection of "traditional knowledge" (Wendland 2002). Greene's paper is an important cautionary tale of how good international intentions can go awry at the local level. Similar political asymmetries, local conflicts, ambiguous social boundaries, broad sharing of poorly documented knowledge, and complicated agendas are numerous. If traditional knowledge and biological resources are precious but diminishing resources, we might wonder whether to pursue policies that will invite conflicts within groups like the Aguaruna. Although the architects of the ICBG believed in nonexclusivity, the program's reliance on intellectual

property produced the opposite. A policy that begins with exclusivity is bound to produce similar results or worse.

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One of the peculiarities of bioprospecting is that its champions and critics—despite their differences—both misunderstand the object of their fervour and censure. Greene's measured essay capsizes some of the verities commonly uttered in debates about the three main forms of biological prospecting (chemical, mechanical, and genetic). More specifically, he criticizes the way in which indigenous peoples are typically figured in what Hayden (2003:36) evocatively calls "the bioprospecting imaginary." His illuminating analysis of the ICBG-Aguaruna relationship in Peru shows how programmatic beliefs about bioprospecting founder on the complexities of real-life bioaccords. Embracing the sort of "situational pragmatism" that Michael Brown (1998:205) has recommended, Greene demonstrates the ambivalent potentials of attempts to reward indigenous "stewards" of material and informational biodiversity. Bioprospecting, he shows, fails to deliver on the ideal-typical aspirations of its cheerleaders while managing, simultaneously, to offer certain indigenous peoples the hope of something better. Greene thus wisely resists easy denunciations. His undogmatic approach is to see bioprospecting as a double-sided phenomenon which requires contextual evaluation.

It seems to me that Greene's principal contribution to the debate about bioprospecting and indigenous peoples is twofold. First, he urges us to resist theoretical essentialism. Bioprospecting has become an abstract signifier that is understood either through a pejorative reading of the market (among the left) or through a positive assessment of the privatizing and pricing of hitherto "open-access" goods (among liberals and conservatives). The problem here, it seems to me, is that preconceived theoretical-normative ideas become the rigid lenses through which examples of bioprospecting are viewed (Castree 2003). Determined to show that their preferred worldview is the right one, critics and fans of bioprospecting selectively assess cases in such a way that the conclusions are, in effect, known from the start. Greene's essay shows why measured empirical analysis defeats theoretical simplicities. What we have been calling bioprospecting in the singular is, he implies, really a cluster of ideas and practices whose effects are *contingent*. Bioprospecting's successes/failures on the ground cannot, as he shows, be predicted from the supposed essential character of the phenomenon.

Secondly, Greene takes us beyond the now tired debate over whether indigenous peoples stand to gain or lose from bioprospecting. His alternative is to focus on the complexities *within* the indigenous movement. This de-homogenizing move not only points up the impossibility of

a unified indigenous voice (even at the regional scale) but also highlights the precarious and shifting webs of connection that allow some indigenous peoples to be recognized as legitimate stakeholders in any and all bioaccords. The "problem of representation" is not simply that of the identification by Western biotech companies, botanical gardens, and the like of the "right" indigenous partners. It is also a problem of how different indigenous peoples step onto the political stage locally and regionally while others are marginalized or silenced. This is complicated by the role played by NGOs, national governments, and other nonindigenous institutions. As Greene shows, over time the "Aguaruna" in the ICBG-Aguaruna relationship were, variously, the Consejo Aguaruna Huambisa, OCCAAM, FECONARIN, FAD, ODECOFROC, OAAM, and CONAP. The perceived legitimacy and representativity of these organizations were, he demonstrates, contingent on their changing relationships with ICBG partners, national indigenous federations, and a host of other players.

Ultimately, as Greene notes, prospectors for novel biological resources will increasingly try to avoid the need to identify indigenous stakeholders, but his wider arguments have a longer-term purchase. The politicization and treatment as property of "culture" will continue apace, whether in the realm of the biological or elsewhere. Those of us who care about the fate of subaltern communities cannot afford to see the commodification of culture as an unqualified menace, but neither can we see it as an unproblematic means for the subaltern, at long last, to speak in their "true voice."

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The privatization of indigenous knowledge, culture, and identity is indeed an emerging problem in both the developing and the developed world. Indigenous peoples in India, Malaysia, Thailand, and many countries in South America are forming consortia working towards such privatization at the expense of other, less conspicuous or "glamorous" indigenous peoples. As in the case of CONAP and Affiliates, individual communities often challenge the authority of heads of consortia to speak on their behalf. This has occurred recently in Sabah, South and North-East India, Vietnam, the Lao P.D.R., Thailand, and China (Tibet). In Thailand indigenous organizations at the national or regional level are made up of a few dominant groups that represent all local knowledge, culture, identity, and diversity. Their representation is further enhanced and championed by NGOs and researchers who focus on select indigenous communities, thus globalizing the indigenous culture and identity across Thailand and beyond its borders to include Burmese, Laotian, and Vietnamese indigenous people. In the Sichuan District of China, for instance, nomads who are now sedentary and owners of land resources allocated by the Chinese government now speak for all nomadic pastoralists

in the region. Among the Sami of the northernmost part of Europe, including Norway, Sweden, Finland, and Russia, local Sami communities have repeatedly contested the structure of the central Sami organization as not articulating their differential needs. Regional indigenous consortia can easily lead to the monopolization and structured dilution of cultural identities.

Although the Convention on Biological Diversity explicitly champions recognition of national sovereignty and provides measures for securing “environmentally sound use,” access and benefit-sharing regimes, and acknowledgment of indigenous “groups” and their knowledge and cultural systems, few parties to it in the North have implemented detailed regulations for compliance with it (Dhillion et al. 2002). Broad-scale plans exist in many nations but are far from any clear definition. Then there are nations like the U.S.A., which have not ratified the convention but have schemes for biodiversity transfer from the South through programs such as the ICBG without regulatory regimes in place. The question arises how indigenous communities can protect themselves when the bioprospector’s state has no regulatory regime. A number of nations in the South are beginning to implement the convention’s provisions, especially in relation to access and benefit sharing, although in some parts of the South progress is very slow (see Aguilar-Støen and Dhillion 2003). Thus, given the current rather loosely woven regulatory system, there is room for flexible negotiations between consortia of indigenous groups and those interested in genetic resources, fostering corporate-like ideals with consequences for the marginalization of selected indigenous communities, distortion of cultural identity, and equity in benefit-sharing regimes. Thus in most cases there are no clear regulatory regimes or models that begin to take into account the complexities of traditional knowledge, ownership, equity, and sustainable management of the resource itself that communities can draw upon—such regimes have to be outlined to provide templates that can be built upon by all stakeholders, including communities within organizations. The growing role of the convention in constructing and influencing regulatory regimes for biological diversity and its access cannot be ignored (see www.biodiv.org and Svarstad and Dhillion 2000). There is also a growing body of good and bad cases that lessons can be learnt from.

Of relevance here, as pointed out by Greene, is the market value of the biological resource related to traditional knowledge. The current political climate with regard to the need to implement the provisions of the convention, coupled with the cropping up of traditional knowledge institutes, healers’ associations, and biodiversity resource and inventory centers, is leading bioprospectors to move away from using traditional knowledge as potential leads to new discoveries. The high processing costs associated with post-collection of the biological resource from the field are far from recognized and understood by biodiversity-rich states, let alone indigenous group organizations. Furthermore, the future of bioprospecting, like that of most economic activities, is unpredictable and dependent on biotechnological devel-

opments that appear to facilitate moving from the use of traditional knowledge to random collection. The more cost-effective the technological advances, the less the value of bioprospecting and the less will be allocated to R&D budgets on bioprospecting (Rausser and Small 2000). Although the arguments and observations in the case presented by Greene are all relevant, overestimates of expected income can play a even bigger role in influencing the continual interest of bioprospectors in indigenous cultural properties than is assumed. The monopolization of indigenous culture through organization of indigenous communities can also lead to the misrepresentation of the actual value of the biological resource, because traditional knowledge may vary widely among communities within an organization. In addition, if such organizations are to be responsible for ensuring the sustainable management of biological resources through their negotiations, then biodiversity conservation may be jeopardized.

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At the core of Greene’s detailed, thoughtful account are the questions of property and politics and the way in which the treatment of culture as property itself becomes an idiom of (political) representation. His discussion graphically illustrates some of the paradoxical effects of bioprospecting: in the harrowing twists and turns of different Aguaruna groups’ struggles to define the terms of their participation in the ICBG project, we see yet again that intellectual property and benefit sharing are chronically double-edged avenues to “inclusion” and enfranchisement. For all of its resonance with other prospecting experiments, the Aguaruna story is also a singularly important one, with CONAP’s unprecedented negotiation of a “know-how” license with Monsanto-Searle and now the possibility of a jointly owned patent with Washington University. It is telling, perhaps, that these “victories” have come not only with consequential political realignments and marginalizations in Aguaruna communities but with corporate retreat as well.

Greene is right to argue that the eventual profitability of these arrangements is only part of the picture (an undeniably important one for those who have high expectations). He also asks what these mobilizations are *about*, more broadly. In answer, he turns to wider trends toward privatizing or “incorporating” indigenous identity. While he has many useful things to say about how efforts to treat culture as property work both with and against the market, I worry that boiling it all down to the incorporation of “identity” runs the risk of resedimenting or flattening out what is clearly a dynamic, molten set of political and social processes—a series of ongoing experiments with different languages and mechanisms of recognition in which indigenous peoples, NGOs, researchers, and companies are all implicated. As we have seen here and in related work, these efforts clus-

ter strategically around a wide but not arbitrary range of idioms: “property” and “identity” join community, territorial sovereignty, and self-determination as languages of representation that sometimes stand for one another. I would thus be more inclined to keep the account *open* in the terms that Greene, in dialogue with one of his Peruvian interlocutors, productively sets out: as a question about the forms that “representativity” can take.

I cannot help thinking here of an ongoing discussion in the field of bioethics. Some ethicists have recently wondered whether the ethical protocols developed to protect indigenous and aboriginal communities involved in epidemiological or clinical research could be applicable to other kinds of collectivities, such as people with HIV, women with breast cancer, or Ashkenazi Jews. Noting the hauntingly familiar qualities associated with “aboriginal” communities in these discussions (territorial boundedness, shared customs, a common language), one critical review noted that the borrowing seemed doomed—*unless*, the authors argued, we were to jettison those definitions of community and take into account the most important feature that any group, indigenous or not, must have in order for informed consent to work: a system of legitimate political representation. This move—a reminder that in these contexts, community *is* as community *represents*—condenses much for us here.

The requirement of representativity—suffused with notions of territoriality and identity but readily stripped down to an essential political functionality (the capacity to speak for)—is certainly one of the most striking aspects of benefit-sharing agreements and the intellectual property logics to which they are pegged. One of the biggest problems with intellectual and cultural property, Greene argues, is that they assume and thus must produce “a centralized structure of representative authority . . . with which external actors can negotiate.” The effects are often jarring, as in the poetic manner in which the ICBG project defined its contract-signing “community”: the “Aguaruna People” are those “who live in the collection area,” and the “collection area” is the area “inhabited by members of the Collaborating Organizations.” This reads quite smoothly alongside the above-mentioned definition of community as a collective that “works” in political terms. There is something worth attending to here. The problem Greene identifies with the idiom of cultural or intellectual property is not a problem *limited to* or driven by property in any simple sense. The requirement for an authorized quasi-sovereign has become central to the bioscience research enterprise more generally; here, property claims and commercialization arrangements absolutely make their mark, but they also work with and alongside other idioms and mechanisms for “representing interests”—most notably, informed consent—in researchers’ and funding bodies’ (such as the NIH’s) efforts to identify and define their legitimate interlocutors. Greene’s piece gives us much to think about regarding bioscience research as a crucial site of struggle over what will count as a collective, as representation, and as a “legitimate” form of political sociality. Property is but one inflection here,

and an intriguingly volatile one at that: it seems important to note that, as indigenous peoples increasingly gain the floor with the language of intellectual property, many commentators argue that global intellectual property regimes are scrambling to hold onto some political legitimacy themselves.

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biology.wustl.edu). 18 XI 03*

Greene has provided a relatively balanced view of parts of the ICBG-Peru project during its 1994-to-2000 tenure. This is true even though he became involved in the project only in September 1999, during the last annual meeting and field collecting in the Department of San Martín, when the majority of the field research had been conducted in the Department of Amazonas. Clearly, for the initial and more controversial years of the project he has had to rely on the opinions, recollections, and hearsay of others, and this has resulted in factual inaccuracies that call for comment.

The ICBG-Peru project grant was awarded not in 1993 (in the first round, three ICBG projects were funded by NIH in 1993 and two in 1994) but on July 1, 1994. The award followed the signing of a letter of intent on April 7, 1994, by the Consejo Aguaruna y Huambisa’s chairman, Evaristo Nugkuag, Wraiz Pérez Ramírez, Jorge Fernández, director of the Ministry of Agriculture at Jaén in collaboration with the vice minister of agriculture in Lima, and the four original applicants (Searle, the UPCH, the USM, and WU). Greene refers to this five-page document as a “very simple” letter, but we disagree in the strongest way. We believe that at that time, and even now, it was a forceful and meaningful outline of a collaborative effort to conduct ethnobotanically oriented research with indigenous people. Greene points to “relatively ill-defined terms” with regard to the sharing of future royalties, but he forgets that at this point there was no license option agreement. This agreement, which established the royalty rate, was signed on June 29, 1994. Speed was critical, for without the agreement there would be no grant, and the grant had to be awarded by July 1 or be lost. What was included in the letter of intent was a clear outline of how royalties and other benefits would be shared, the one adopted from the original grant application (submitted in 1992) and the one that we adhere to today, namely, that the four parties would share benefits equally, with a total of 75% of any income returning to Peru. This remains one of the most liberal and progressive arrangements for the sharing of profits of any agreement on bioprospecting known and recognizes the major contribution of the host country in a substantial way. Other minor corrections are that two, not three, institutions participated in collecting, and in 1994 only 4 regional Aguaruna organizations were rec-

ognized officially in Lima (of which 3 were our collaborators), far from the current 13 that Greene notes.

With the signing of the license option agreement, royalty rates were essentially established by Searle. The university researchers unfortunately had little guidance on this except for the NIH's assurance that, while the proposed rates were low, they were within the range of other proposals. Clearly this was something that could be reinvestigated later, and under time pressure the agreement was signed on June 29 despite its imperfections. New and more beneficial royalty rates along with other considerations were incorporated into the license option amendment agreement signed in September 1996, prior to any royalties' having been paid at the original rates.

Immediately after the approval of the grant, all three university parties met with the CAH's chairman and staff in Lima on July 7, 1994. At this time a \$10,000 partial (annual) up-front payment was provided the CAH for collecting privileges as agreed, along with a copy of the confidential license option agreement. No request was made for a copy in Spanish, but this was provided later, along with a copy of the original grant application of 300 single-spaced pages. It is not the case that the CAH never received a copy of the agreement. A copy was presumably provided by the CAH to RAFI, which posted it on the web without the permission of the parties to the agreement.

Following the July 7 meeting, and carrying a letter of permission from Nugkuag to interact with CAH leaders and communities, we traveled to Imazita in Amazonas, where Aguaruna representatives took us to visit a number of CAH communities along the Río Marañón. In violation of the letter of intent, however, we were not allowed to collect plant material. On our return from CAH-controlled territory, and with the full permission of the Ministry of Agriculture in Lima and Jaén and collecting permits from the ministry's National Institute of Natural Resources (INRENA), we spent two to three weeks collecting material among the mestizo communities (with their permission) and in their privately owned forests as well as on lands owned by the Peruvian government. When people were involved, the prior-informed-consent document was signed before collecting began.

Even with the adverse publicity generated by RAFI regarding the project, we learned that the CAH assembly of communities, meeting in November 1994, had at least tentatively approved it.

In January 1995, with CAH concurrence, the WU team returned to Peru to discuss a formal agreement to extend the content of and replace the letter of intent and to engage in a long-term collecting expedition in collaboration with the CAH. All aspects of the letter of intent and the license option agreement were discussed by the researchers representing the three universities and the CAH chairman and staff between January 5 and January 18, 1995. A number of issues were agreed to, such as the maximum amount of collecting per year, collecting areas, assistance in the field, and security, but the single most important concern was the royalty rate. There was

consensus that the rate was too low, and for the sake of all parties WU agreed to challenge Searle and negotiate a more favorable value. Unfortunately, there was no representative of Searle at the meeting, and therefore this negotiation had to be done in St. Louis, with counsels present. We requested permission to collect in the CAH controlled territory as planned and then, on our return to St. Louis, to open a dialogue with Searle on the question of royalties. To our surprise, on January 18 the meeting was abruptly terminated by the CAH, and although Nugkuag was to call Lewis that afternoon to arrange the next meeting, no further contact was made despite repeated attempts by the latter. Another CAH agenda had obviously intervened.

The multiuniversity team left for the Imazita region on January 24, 1995 (not late 1994) to collect again in mestizo and government regions and also to make contact with members of OCCAAM, whose headquarters at Yamayakat is immediately across the Río Marañón from Imazita. This Aguaruna federation is often described as small and isolated, but its major community is the most readily accessible of all federation communities in the entire Upper Marañón, and it had 27 registered communities and annexes and a population at that time of about 2,150. Renewed contacts were made with its leaders, and on February 26, 1995, an initial agreement was signed in Lima.

During this month-long period many collections were made strictly in the mestizo/*colonos*/ government areas of the Departments of Cajamarca and Amazonas with full permission, plus a few collections around Yamayakat with OCCAAM Aguaruna informants. No plant collections were made in the CAH communities, and our field collection notes, with full data on precise locality, habitat, informants if applicable, and dates clearly attest to this fact. Greene's statement that during this time from January 26 (first collection in Cajamarca en route to Imazita) to February 23 (last collection well beyond the Aguaruna at 25.6 km north-northeast of Bagua Chica in Amazonas) of 1995 "It is impossible to verify exactly how and where the ICBG team collected" is incorrect.

A few months later (April 1995), RAFI wrote the NIH a letter replete with errors, and later a similar letter was sent to WU's chancellor, which after a thorough examination was rejected by the university. The non-CAH federations in the Río Marañón rallied against this attack on the project, and after an NIH investigation of the "charges" full funding of the project was restored following the new round of discussions (December 1995 and May 1996 in St. Louis with all parties and counsels present) and agreements (September 1996) outlined by Greene. Thereafter, with the assistance of CONAP (the umbrella organization for the four collaborating Aguaruna federations and many other indigenous groups), headed by César Sarasara, and with the full collaboration of the four federations, field research was completed successfully in 1999, to be followed by continued research at the universities. As noted by Greene, Searle withdrew from the consortium that year (although it never cancelled the know-how license agreement as he reports). Regarding the intellectual property shared by

the four parties equally as part of a utility patent submitted to the U.S. Patent and Trademark Office in 2003, the portion (25%) assigned to CONAP was accepted solely on behalf of the four collaborating federations—OCCAAM, FAD, FECONARIN, and OAAM.

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As Greene shows, the notion of intellectual property is an unwieldy framework for conceptualizing and trading cultural knowledge, genetic information, or indigenous symbols. He asks what is at stake when indigenous authorities negotiate the market value of their peoples' knowledge and rightly emphasizes the pitfalls of inflated expectations and the problematic politics of indigenous representation. Similar dissection of the representational politics of the ICBG and other intellectual-property brokers would reveal that even more is at stake than Greene's account indicates. Contracts to trade genetic resources and related knowledge were first promoted as the model for managing "global" natural resources by means of market exchange. This strategy of selling nature to save it has since been extended to markets in carbon sequestration and other ecosystem services.

In the negotiations over biodiversity "benefit sharing" between countries and communities in the global South and nations and corporations in the North, such bilateral contracts are counterposed to alternative approaches that aim more directly at redressing past plunder and present inequalities in resource control. In UN fora in the 1980s, the mirage of windfalls from exports of genetic gold persuaded many Southern governments to drop their opposition to the patenting of medicines and crop varieties. Some are only now reviving their earlier claims that staple crops and vital drugs, many of which are derived from Southern source materials, ought to be available to everybody. In the 1990s, hopes for income from bioprospecting deals helped persuade delegates from diversity-rich states to accede to U.S. insistence that the Convention on Biological Diversity recognize intellectual property rights and that the World Trade Organization include provisions for the worldwide applicability of intellectual property to plants and microorganisms. Similar illusions of gains from genetic-information trade underlie current maneuvers by China and Brazil to exclude important food crops from the new International Treaty on Plant Genetic Resources for Food and Agriculture. This accord is significant precisely because it is a multilateral alternative to the market-contract model, one that would keep vital crop germplasm in the public domain and prevent beggar-thy-neighbor competition among communities and countries to undersell their genetic resources.

The policy discourse of biodiversity benefit sharing and bioprospecting focuses on marketable genetic infor-

mation as if organisms and genes acquired value only when privatized, removed from their unique ecological and cultural contexts, and transformed by high technology. This construction devalues the benefits that communities everywhere *already* derive from the ecosystems that sustain them materially and culturally.

In their efforts to aid their communities, legitimate indigenous representatives may be as entrepreneurial as anyone else, but claiming and selling property rights is a weak basis for economic bargaining. Contracts for trade of genetic resources and associated knowledge are dressed up as if they were economically rational exchanges based upon values (prices) objectively determined by supply and demand. What indigenous participants in bioprospecting arrangements are actually offering is legitimacy—their own in the eyes of outsiders—based on some mix of outsiders' guilt, goodwill, and perceptions of special indigenous relationships with nature. The commodities purchased are rarely related to any local knowledge; organic samples are assayed for bioactivity of interest in entirely different technological and economic contexts. Now, supply exceeds demand in what has become a bio-buyers' market. Economic and political power asymmetries ensure that, even where local knowledge leads prospectors to useful materials, substantial local returns are unlikely. Unrealistic hopes for royalties from genetic-information sales have led some to advise communities to keep knowledge secret, but hiding and hoarding are likely to speed the loss of that knowledge.

If trading cultural "property" is understood as a political negotiation rather than a market transaction, the risks and potential gains for knowledge providers can be analyzed more realistically. Indigenous and other communities can rescue, preserve, and increase useful local knowledge by documenting it in community registries and publications of resources, inventions, practices, and traditions, thus helping to establish it as "prior art" that cannot legally be appropriated or patented. They can claim collective rights to documented knowledge and negotiate know-how licenses or other terms for allowing access to it. Backed by the requirements of the Convention on Biodiversity that collectors obtain "prior informed consent," they can bargain for remuneration, with total payments specified in advance. Classification, analysis, and processing of plant samples and botanical information can add value to local resources for local purposes and for sales to others. Such arrangements can highlight continuing processes of collective invention, bring status to knowledge contributors, and strengthen group identity and organization. But selling genetic information and cultural capital has in common with selling handicrafts, forest products, crops, or ecotourism packages that export markets are rarely adequate, reliable livelihood sources. The extent to which they are helpful depends on how much they contribute to broader strategies for applying local resources and knowledge to local development objectives.

The same criterion applies to damage caused by biopiracy. Unauthorized use of genetic resources and infor-

mation does not prevent local people from continuing to use such resources. However, it can prevent them from commercializing crop varieties, medicinal plants, etc., if these are legally appropriated by competitors, as in the case of the yellow beans from Mexico patented by a U.S. bean dealer. Whether biopiracy causes material harm depends on how the resources involved fit into local strategies for cultural survival and economic development.

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Greene's paper highlights a feature of contemporary politics that invites our consideration of not only the politics of culture but also the political economy of culture-as-politics. Revolving around a sequence of bioprospecting arrangements among the Aguaruna in Peru's high forest, the paper exposes the absurdities of strategies that claim traditional local knowledge as cultural property. Obviously, Greene is not the first to question the sobriety of efforts toward copyrighting local traditional culture, whether on the part of indigenous groups or corporate interests, but his case represents a timely exposé of the implications of such efforts in terms of evoking unrealistic expectations of easy economic windfalls, creating new cleavages or aggravating existing divisions, and accelerating rates of leadership turnover within indigenous groups. Greene's presentation concedes that temporary advantages flow from the economic conjunctures implicated in the politics of culture as property, including opportunities for leadership training or funding for intellectual training related to bioprospecting and environmental conservation. However, the Aguaruna experiences also suggest a real risk of exhausting indigenous leadership resources among their own constituency or subverting the credibility and legitimacy of indigenous leaders in the eyes of the nonindigenous world.

Looking into the role of NGOs, researchers, bureaucrats, and private corporations in the process of raising indigenous claims to intellectual and cultural property in bioprospecting contexts, Greene calls attention to the tendency for naiveté on the part of prospectors as to the complexities of indigenous politics to be matched by an equally naïve idealism on the part of NGOs, legal experts, and others advocating indigenous rights to culture as property. He demonstrates how these agencies are exploited through the cunning of indigenous leaders aiming to reap whatever profits—symbolic, economic, organizational, or political, large or small—may be extracted from the situation. In this way indigenous strategies emerge as modes of appropriating sources of power from the dominant society—or from the logic of the market, as Greene has it—and working against it. This is a welcome perspective that could become revelatory of much that remains to be explored in the fissures between culture-as-historical-isolate ethnography and activism-in-

formed globalizing orientations in contemporary Amazonian research.

The paper offers the contours of a political-economic perspective on the dynamics of indigenous mobilization centered on bioprospecting arrangements and their varied effects on the shaping of indigenous political culture; with some analytical elaboration and specification the approach may lead research toward a truly productive interpretation of the interconnections and contingencies that give rise to indigenous and other strategies of converting culture into capital through a politics of culture and identity. Insofar as such strategies remain highly taxing for leadership credibility and indeed for the authenticity of indigenous identity, they are potentially subversive of indigenous culture as a resource for engagement. The phenomenon reflects its origin as a product of the localization aspect of a globalization process in which the meaning of the local is established in a global framework.

Greene rightly points out that being indigenous in our era has become a historically validated subject position tied to a conscious strategy of multiply configured identity-based political action that appears to take on world-historical proportions. Obviously, indigenous leaders are in the forefront of emergent indigenous activist institutions. Far from being innocent pawns in others' games, indigenous peoples actively engage in and influence regional, national, and transnational networks of power. If they are making history, they are making history under conditions not of their own making. The million-dollar question remains what exactly is the status of the action aspect of indigenous strategies of mobilization for or against the logic of the market. Indeed, deciphering the contradictory elements inherent in the cultural politics of propertied culture not separately as economics and cultural symbolics but *in their unity* calls for a perspective beyond a one-sided logic of the market. Yet the cultural politics of Aguaruna bioprospecting arrangements are certainly tied into market contexts; culture and the symbolics involved here reflect these links in ways that may hardly be conceived exhaustively if these contexts are not made central to the analysis. Greene brings this point home nicely.

Reply

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The author's reply in CA tends to be either a sharp countermove aimed at intellectual self-defense, a tactical circumvention of well-founded criticisms, or some combination of the two. This response will probably be interpreted no differently. The comments are in my view best grouped into four broad categories: congratulatory (Brush, Castree, Veber), complementary (Dhillon, Mc-

Afee), substantively critical and engaging (Hayden, Bannister, Lewis et al.), and absurd (Banerjee).

Brush, Castree, and Veber congratulate me on an effort that exposes the complexities of contemporary bioprospecting and indigenous cultural politics by linking them to questions related to the Convention of Biological Diversity, indigenous representation, and global political economy more generally. Dhillion and McAfee appear to be convinced by the argument as well and seek only to expand its ramifications. The former draws parallels to cases in Southeast Asia, and the latter places pharmaceutical bioprospecting in the wider context of bio-genetic engineering as a whole and the need to reconsider the local dimension of development schemes.

Hayden's and Bannister's appreciative comments are qualified by requests for clarification on key points of the argument. Hayden's main concern is that I "flatten out" the issue by "boiling it down" to the "incorporation of identity." She suggests that I should have left the argument more "open" by aligning property and identity with community, territorial sovereignty, and self-determination. I don't know what she means by "open," but I wonder if she isn't flattening me out a bit. I explicitly relate the indigenous knowledge, identity, and property issue to a social reality of shifting corporate and leadership alliances among titled, administratively autonomous communities. Likewise, I expose the mysterious reliance on the category "Aguaruna People" in the ICBG's contract negotiations, which implies an abstract ethno-political, corporate actor roughly equivalent to an Aguaruna "imagined community." In fact, as I show, these two facts explain much about why the ICBG caused such controversy and worked to legitimate exclusionary legal fictions in the first place (part of a broader problem, as the Maya ICBG and other cases suggest). Further, the introductory and concluding sections clearly articulate cultural property claims with a broader politics of indigenous recognition, self-determination, and territorial claims that have now found a reception not only in local social movements but also in international legislative forums like the UN. I even suggest that indigenous territorial claims effectively trump cultural property claims despite the increased attention to the latter in global indigenous debates.

Bannister believes that I generalize too much about the role of corporations and NGOs on the basis of the Aguaruna case. She adds some important details about Searle's participation and withdrawal but nothing that detracts from the generally accepted observation that pharmaceutical bioprospecting creates many more expectations than it does realistic possibilities for addressing, much less fulfilling, them. She is probably right that I extrapolate too easily from RAFI's role in two ICBG projects. There are other examples. The NGO Third World Network provided much of the public forum for Vandana Shiva and others' discussion of the neem seed patent case. The common conflation deployed in that case between indigenous people, Third World identity, and the Indian nation-state rely on some of the same simplistic representations I discuss in the ICBG-Agu-

aruna case. Further, it is worth reiterating that I do not merely criticize the actions of NGOs. I explicitly recognize their importance in providing support, counsel, and leverage in other instances. Indeed, the indigenous organizations in question are most often NGOs as well. The point is that all the actors mentioned, including NGOs, indigenous leaders, corporations, bureaucracies, and researchers (among them myself), are implicated in the process of distorting representations to fit exclusionary legal fictions that become legal realities through the practices and politics of indigenous incorporation and legitimation.

I interpret Lewis et al.'s "just the facts" response as an attempt to set the record straight. They respond directly and only to the factual basis of specific events related to early ICBG-Aguaruna negotiations. Leaving aside a few "factual inaccuracies," they believe, as does Bannister (who came to know many of the same actors), that I present a "relatively balanced view." Therefore, I must assume they do not strongly disagree with the overall argument. Lewis read an earlier version of the text before it was submitted for publication, and unfortunately many of the points of clarification are surfacing only now as the paper goes to press. This is, however, the second time that he has had to instruct me to say that Searle "withdrew" from the know-how license instead of "canceled" or "terminated" it in order to be legally correct (that is my semantic oversight entirely). They are justified in linking the original chronology of the Consejo letter of intent and the license option agreement to the difficult position the ICBG researchers were placed in as a result in round one. As they state, Searle initially unilaterally dictated the royalty rates (a point I failed to make) and made no effort to negotiate directly with Aguaruna representatives until forced to do so by the need to renegotiate in round two. They draw attention to their early intention to pursue higher royalties even while still negotiating with the Consejo Aguaruna Huambisa and clarify that the agreements signed in the second round included a royalty rate increase. Too late I realized that in one of the many attempts to shorten this piece I cut a sentence that remarked on that royalty increase (which I acknowledge only as "different").

They seem surprised that I mention 13 local Aguaruna-Huambisa organizations, 2 of which (ODECOFROC and FECONARSA) existed but were not legally recognized in the Department of Amazonas at the time of the negotiations. They would be less surprised if they related this to my broader argument about the ongoing historical shifts in Aguaruna authority, institutional legitimacy, and attempts at indigenous incorporation. It would also help if they took a clearer position on the contractual use of ethnonyms like "Aguaruna People," which is limited to a specific subset of legally recognized "collaborating" Aguaruna institutions and exclusive unless other indigenous organizations apply to CONAP and Affiliates' intent to incorporate the "Aguaruna People"). Even if we indulge in the use of such legal fictions to define contractual indigenous partners, my data (from Peruvian

public records) show that at least 9 local organizations with Aguaruna members were legally recognized at the time of the negotiations (CAH, FAD, FECONADIC, FECONARIN, Chapi Shiwag, OAAM, OCCAAM, ONAPAA, and ORIAM). Some of these organizations are from other provincial departments (Loreto and San Martín) that were initially excluded from the "collection area" in the contractual agreements, but that is my point. "Aguaruna People" does not exclusively correspond to any consortium of these organizations in this or that provincial department outside these kinds of business-model social relations and contractual negotiations.

Lewis et al. offer a clear response to the statements of Evaristo Nugkuag that I cite as evidence about the early negotiations. I commend them for clarifying their position and citing their field notes as evidence for what happened during the controversial field collections in late 1994 and early 1995. They argue that my dependence on "opinions, recollections, and hearsay" is responsible for the factual inaccuracies they identify in my account. However, I relied not just on oral accounts but also on texts from indigenous institutions and authorities. The danger here is in the implied contrast between untrustworthy local sources and scientific/legal statements portrayed as "factual." At the very least, the dialogue between history, anthropology, and politics now forces us to acknowledge that "opinions, recollections, and hearsay" are not as far from "factual evidence" as the great positivist scientists once believed. Indeed, the very impulse to separate things out into two mutually exclusive categories of discourse—"facts" versus "opinions, recollections, and hearsay"—reveals a reliance on a cultural framework that still places "science" (as factual knowledge) at the apex of a hierarchy of human knowledge types. Such an understanding fails to recognize that "opinions, recollections, and hearsay" may have their own value as legitimate knowledge in a given cultural, political, or historical context (not necessarily excluding ours) and may even be as valued there as the scientific "fact" is by the intelligentsia and lawmakers of our society. The controversial aspects of the ICBG-Aguaruna case were as much about a tremendous clash of culturally, politically, and socially defined expectations as anything else. The only possible solution to resolving such intercultural conflict entails trying to understand the role of differing expectations, how they were produced in the first place, and how history is retold (and "recollected") by different actors. This is in essence the long-term project to which anthropology is committed, but it is also of major relevance for the other actors now engaged in such highly politicized negotiations.

Ironically, Lewis et al.'s comment stands in stark opposition to Banerjee's. While Lewis et al. criticize me for letting too many indigenous sources speak, Banerjee says that "one voice is missing, and that is the voice of the people." If this is so, what are all my direct quotations from indigenous leaders (Nugkuag, Juwau, Jacanamijoy) and indigenous-produced texts that claim to speak for indigenous people? What about the citations of the work of indigenous scholars and Third World activists (Mon-

tejo, Shiva, Ewen) addressing global audiences and gaining their own "voices" at the UN rather than simply being "quoted" by the anthropologist? We live in an age when indigenous actors help bring multimillion-dollar international pharmaceutical projects to a halt, successfully revoke patents, win Nobel Prizes, prevail in cultural property law suits, and routinely meet to discuss international legislation. And yet Banerjee remains convinced that "Spivak's subaltern" (his phrase not mine; notice the possession) cannot speak and that "we are their authors." Far from being "silent about the disparities in power" and failing to "accept . . . the legacy of the colonial era," the entire article is about "disparities in power" and premised on the idea that indigenous identity is configured within a colonial legacy. Banerjee's comment stands out from the others in failing to address the actual argument of the paper or the indigenous struggles it chronicles. Indeed, I wonder if in fact his recourse to Spivak (who is more in dialogue with French poststructuralists than with any subalterns) as the relevant authority does anything more than reduce anthropology to the "bourgeoisie scratching its head," to employ one of Edmund Leach's famous phrases.

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