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IS: Critical Race Geography

5-12-12

The Geographies of Race, Patents and Traditional Knowledge

Introduction

The evolution of patent law, from its historic beginnings to its current hegemonic state, reveals a dichotomy between patent protection and indigenous appropriation and exploitation. The patent system continues to protect novel inventions — even those with no use — and provides a legitimizing legal facade for the appropriation of traditional knowledges of the uses of plants (TKUP). The alleged theft and exploitation of native plants by corporate institutions and states, which profit from the commercialization of biocultural resources, encourage accusations of "biopiracy" and "biocolonialism" from indigenous groups and their supporters.

The IMAX movie, *Amazon* tells the story of two medicine men — one from the Andes and another from the West {Stern, 2004 #64}. The story begins high in the mountains of the Andes where the Incan Kallawaya tribe, once the medicine men to the Royal family, continue their long tradition of healing people with magic and medicinal plants. Julio Mamani follows the healing tradition of this ancient people and reflects forlornly about the lack of a local plant that would cure his mother's ailment. He

then makes a vow to travel to the great rainforest below to find such a plant. After performing a ritual to “Akomani the god mountain of our people,” he collects the rejuvenating waters from the mountain’s melting ice to trade for an “unknown elixir that will prolong life.” Julio then follows the path of the melting ice that will lead him to the great river — the Amazon. After breathtaking scenic shots, the movie cuts to Dr. Mark Plotkin — a modern medicine man who seeks to find plant medicine that “will cure humanities’ ills.” He is rowing down the Amazon wearing a crisp Amazonian outfit, complete with pith helmet, taken from one of the many outdoorsman fashion catalogs. While examining sap from a nearby tree he muses, “virtually every medicinal or agricultural plant that has come from the rainforest was first learnt from indigenous people.” Driven by dread that unsustainable development will destroy Amazon’s plant biodiversity and possibly a plant that could heal serious ailments,he dips his paddle into the swift-flowing waters. Next, the film shows Antonio, an indigenous shaman from the Kokona tribe, guiding the western scientist through the green canopy of the Amazon. The scientist explains that friendship with the village’s inhabitants and the shamans is necessary to learn their secret knowledge of plants. While panning to Dr. Plotkin sitting around a bonfire with the indigenous community, the narrator explains, “learning the jealously guarded secrets of indigenous shaman requires genuine friendship and mutual trust.” Julio, the Andean shaman, all the while, is shown traveling by boat deep into the heart of the Amazon. The western scientist, after cataloging and storing his plants for shipment, comes across the Andean medicine man in the market. Julio managed to

trade the rejuvenating water for the plant medicine his mother needs. At one point, they look into each others eyes and recognize a kindred spirit — medicine men from two different worlds united in their search for healing plants and curing ailments.

The problem with this story, besides the stock stereotypes, is the absence of the western medicine man's actions once he returns to the West. For example, he undoubtedly brings back the plants to his lab where he analyzes the isotopes and chemicals and searches for the healing properties through a microscope. Through this exploration, and much more, he creates a patent. This patent provides him with twenty plus years of exclusionary rights to exercise his "invention" including marketing in pharmacies and clinics in the nearby South American country where it came from. Indeed, it is likely that the scientist is a highly paid bio-proprietor in the employ of a for profit pharmaceutical company, such as Pfizer, Roche, and Novartis. This story is all too similar to the colonial settlers bent on discovering and conquering large swaths of land for greater mankind — at the expense of the conquered. Both stories require the subjugation of the "other" and the misappropriation of their property — intellectual or physical. Both stories require the mobilization and imposition of the law to legitimize the exploitive relationship. Modern patent law is the international legal mechanism allowing the continued exploitation of TKUP and the infrastructure of biocolonialism.

The imposition of Intellectual Property (IP) Regimes emerges from Western nation states, which demands that the rest of the world implements these Eurocentric concepts into their own legal frameworks,

through international trade regulations such as the WTO's Trade Related Aspects of International Property Rights (TRIPS) and other international conventions. These imposed IP regimes sanction uneven capital accumulation through the geographic shift of capital from the global south to the north. In other words, the North's exploitation of plant genetic resources (PGRs) from biodiversity rich nations is a form of neocolonialism. This paper examines the relationship between TKUP, patent law, international legal mechanisms, and sites of hegemonic resistance. Part I provides an introduction to indigenous cultures, their use and development of plants, and their relation to space and place. Part II begins with how states and corporate institutions use patent law to misappropriate TKUP and how this harms indigenous tribes. This is done by showing how patent law supports and rewards biocolonialism through capitalist inculturation. Part III examines the *Convention on Biological Diversity* and TRIPS and highlights the patent protections and principles associated with each. Part IV looks to sites and techniques of resistance that work within the global IP legal frameworks. This section aims to develop a critical and useful analysis to reveal the ways in which indigenous people and their allies confront biocolonialism and biopiracy.

The need for a new drug

The phone rings. The lead drug development strategist cautiously answers the phone. He knew the companies stock was going down and the board meeting would end any minute. "Hello." On the other end was MR. Bauer — the Chair of the Science and Technology Committee. "Jerry" he says, "The board is concerned with our unsuccessful attempts to create

a new drug. Pygar, our best selling beta-blocker, has been keeping us afloat for the past 20 years, but now, its patent is about to run out. We have to find a new drug that will bring us back in the top ten. I don't care what you have to do. You can go down to the Amazon and talk to the shaymans down there for all I care. Just get it done." Click. Jerry's concerned hand slowly hangs up the phone. This isn't the first time he's gotten a call like this one, but he knows that his job is on the line if he screws this one up. He begins to research methods for drug development that don't require traveling to the Amazon...

Early in the development of biotechnology science, western drug and agricultural companies realized the profit potential of biotech, PGRs and patents. They could isolate a plant compound and create a new drug or insert a pesticide resistant molecule into a seed, for instance. The study of medicines derived from natural sources or "the study of the physical, chemical, biochemical and biological properties of drugs, drug substances or potential drugs or drug substances of natural origin as well as the search for new drugs from natural sources" is called Pharmacognosy (Rai, Acharya and Rios 2011, 1-2). Companies who invest and produce these interventions in PGRs can patent them and exclude others from their use. A burgeoning scientific field, with some of the brightest minds in science, began to explore the inner workings of PGRs. The possibilities were endless, except for the affects of industrialization, which exploited, paved over, or agriculturally homogenized the vast landscapes of the advanced industrialized countries, from which these companies arose. Realizing this lack, and the need to capitalize on this emerging biotechnology field, companies began exploring PGRs from developing countries that housed unexplored natural plant resources and indigenous medicine men who, for centuries, were the primary health care

providers for their people. Here, in the developing countries of the world began a new cycle of capitalist exploitation — biocolonialism.

PGRs are an integral component of pharmaceutical development. As of 2012, “[t]he global pharmaceuticals market is worth US$300 billion a year, a figure expected to rise to US$400 billion within three years” (WHO 2012). One study found that, “the contribution of natural products to sales in the world's top pharmaceutical companies ranged from 10 per cent to more than 50 per cent…Merck & Co, for example, natural product or natural product-derived drugs accounted for 50.6 percent” (Sarah Laird 2002b, 249). A landmark 1997 study examined the top 150 prescription drugs for their plant origins found that 57 percent of the drugs “now or once derived or patterned after compounds from biological diversity” (F. Grifo 1997). In a 2007 study, Newman and Cragg reviewed PGRs as the source of new drugs over the past 25 years and found that “of 1,010 new chemical entities, 124 were biological (peptides or proteins obtained through biotechnological means), 41 were natural products, and 232 were derived from natural products, generally with the aid of semi-synthesis. Another 310 compounds were obtained through pure synthesis” (Rai et al. 2011, 2). A 2008 study found the sources of new drugs approved from 1981 to 2007 almost half were derived from PGRs with “About one hundred compounds derived from natural products are currently undergoing clinical trials and at least another hundred similar projects are in preclinical development” (Rai et al. 2011, 3). One analyst concluded, “[u]sing a conservative estimate that a quarter of all pharmaceuticals are derived from genetic resources, the annual market for natural product

pharmaceuticals is US$75 billion" (Ten Kate and Laird 2000). When pharmaceutical companies are looking to develop new drugs, they look to PGRs for inspiration.

The development of new drugs has become an extremely expensive costing companies around $800 million per drug. "Of the millions of compounds screened for their properties, only about 5,000 will be considered for advanced pharmacological development. Of these, only one may become an effective drug. Moreover, at the phase I clinical trial stage, only one of every twelve compounds is actually marketed" (Rai et al. 2011, 17). To ensure the protection of their investment and the continued sources of PGRs multi-national corporations (MNCs) and states lobbied for national and international legal protections.

To support the state and corporate interest to expand profits and influence, a legal movement emerged to legalize appropriation of developing states' plant resources. In 1983, the Food and Agricultural Organization (FAO) of the UN in their 22nd Conference in Rome adopted the *International Undertaking on Plant Genetic Resources* which aims to ensure that "plant genetic resources of economic and/or social interest, particularly for agriculture, will be explored, preserved, evaluated and made available for plant breeding and scientific purposes" (FAO 1983). This international undertaking proceeded "based on the universally accepted principle that plant genetic resources are a heritage of mankind and consequently should be available without restriction"(FAO 1983). Professor Dutfield believes this jurisprudential jump is inherently illegal —

> Indigenous peoples have for centuries endured abuses of their basic human rights, and they still tend to be politically, economically and socially marginalized. It would therefore be naïve to suppose that it has ever been normal practice for their knowledge to be placed in the public domain and disseminated, with their prior informed consent *and* with respect for their customary laws and regulations concerning access, use and distribution of knowledge. It can plausibly be argued, then, that unconsented placement of knowledge into the public domain does not in itself extinguish the legitimate entitlements of the holders and may in fact violate them (Dutfield 2001).

By universalizing the ownership of PGRs and removing any restrictions on their exploitation, corporations, universities, NGO's, states, and other actors began to extract and capitalize on PGRs. This mass movement of PGRs, from the south to north, was the late 20th century's gold rush —

> The extension of the commodity form to new areas is one of the principal historical processes associated with the political economy of capitalism. It provides a way of reproducing the social relations needed if capital is to survive and grow in a particular sector. The development of the notion of intellectual property, and the articulation of intellectual property laws, is a significant moment in the self-expansion of capital, another instance of 'the relentless extension of market assumptions into areas where the market has not ruled' (Whitt 2009, 163)

The commodification of PGRs provided the rationale for extending IP, the legitimating factor of biocolonialism, into the "uncivilized" and "undiscovered" indigenous realms allowing an avenue of natural resource exploration by Western interests.

There are two basic sources for discovery and development of PGRs - *in-situ* and *ex-situ* collections. *In-situ* materials are in their natural habitats such as rainforests, savannahs, farmers' fields, etc. *Ex-situ* collections are materials held outside their natural habitats such as gene banks, botanic gardens, and culture collections. *Ex-situ* collections are the central site of PGR exploration and exploitation. These collection sites

ensure the continued availability of PGR and the reintroduction of plants to their *in-situ* sites, if necessary. Most companies utilize these collections instead of acquiring the samples themselves through *in-situ* explorations. Currently, world wide germplasm collections contain over 6 million accessions (Nagel et al. 2009, 5). The Consultative Group on International Agricultural Research (CGIAR) consists of sixteen international research centers that hold and improve seed and other plant material collected from around the world (Saftin 2004, 671). CGIAR provides PGRs free of charge to farmers, breeders, and corporations. With more than 500,000 accession, CGIAR is a prominent force in the sharing of PGRs around the world. CGIAR's 2012 budget is $784 million, and that includes significant investment in biotechnology research (CGIAR 2012). One of the more famous PGR collections is the US NCI, which has built a library of 150,000 natural product extracts and 400,000 compounds (Sarah Laird 2002b, 268). Another collection site located in Germany, one of the four largest, houses 150,000 accessions (Nagel et al. 2009, 6). Collection sites, like the one in Germany and elsewhere, were developed for the "collection, maintenance, study, and supply of genetic resources of cultivated plants and related wild species" (Acquaah 2007, 91). However, these *ex- situ* collections mainly benefited the states and corporations that utilized science to exploit the PGRs "hidden" potential. In the last decade, private companies like Monsanto, Pioneer/Dupont, Novartis/Syngenta, Advanta Seed Group, and large pharmaceutical companies, raced to acquire seed companies and profitable mergers — these trends are likely to continue (Acquaah 2007, 14). Despite the tighter control of PGRs by these MNCs,

smaller companies continue to explore alternative methods of PGR collection.

Despite the insatiable desire and hope of finding an unknown super plant deep in the Amazon, most corporations go through intermediaries such as —

> Commercial brokers and importers of material who acquire genetic resources from around the world; research institutes, gene banks, universities, botanic gardens, culture collections and other such organizations that collect in source countries abroad and maintain collections in the country where they are based; and similar organizations based in source countries themselves (Sarah Laird 2002b, 255-256).

One very successful intermediary, providing PGRs to companies since 1989, is Costa Rica's NGO National Institute of Biodiversity (InBio). InBio entered into a research collaboration agreement with the pharmaceutical corporation Merck, Sharpe and Dohme for bioprospecting activities, which have been controversial due to the inadequacies of engagement with farmers and indigenous groups and the failed attempts to receive prior informed consent from plant users (Robinson 2010, 13). This agreement is exemplary of the majority of agreements with intermediaries — the indigenous people get excluded from the arrangement. The importance of InBio, and similar conservation NGOs, to biotechnology and pharmaceutical development is InBio's discovery of over 3,000 species since their inception and their collection of over 271,000 plant species {InBio, 2009 #112}. The availability of new PGRs could be a determinant and valuable step in producing profitable medicines and bio products. The scale of sample acquisition by companies varies enormously. For

example, small pharmaceutical companies may operate focused acquisitions programs that obtain just 10 to 100 targeted samples a year (Sarah Laird 2002b, 268). At the other extreme, companies may seek in excess of 10,000 new samples a year (Id at, 264). The worldwide search for profits through PGR exploitation occurs through a variety of scales and intermediaries.

Some pharmaceuticals are cheaper to derive from the plants themselves instead of the formulaic procedures in a lab. This extraction process, especially in profitable medicines, creates sustainability issues as plants are sourced to extinction. For example —

> The production of one kilogram of taxol (an anti-cancer drug made from the Pacific Yew tree) requires 20,000 pounds of bark, or 2,500 to 4,000 Pacific Yew trees. Similarly, alkaloids like vincristine and vinblastine derived from the Madagascar rosy periwinkle and used for the treatment of childhood leukemia and Hodgkin's disease must be extracted from the plants that produce them. In this case, fifteen tons of rosy periwinkle leaves yield one ounce of vincristine. This alkaloid sold in 1991 for $100,000 per pound. As a result of the high demand for the plant, the entire native rosy periwinkle habitat in Madagascar has been depleted (Mgbeoji 2006, 72).

If a corporation acquires the means to degrade and eventually extinguish PGRs, the exploration of PGRs through *ex-situ* collections can bring about the eventual destruction of what they are trying to save — plant life. Through the processes of development, commodification and consumption, market forces determine what species of plants flourish or die out, "the indiscriminate screening of plant materials for pharmaceutical commercialization…has depleted plant species and, in some cases, driven them to extinction" (Mgbeoji 2006, 72). Allowing the

vagaries of capitalism to choose which plant species thrive ignores the long term importance of plant genetic diversity.

The asymmetrical shift of PGRs from indigenous peoples and developing nations to industrialized societies is the modern equivalent of centuries long appropriation and colonialism. Indeed, “the structure and configuration of modern global economy, human population distribution, culture, science, and international legal order” (Mgbeoji 2007, 117) is founded upon the exploitation and use of plant resources. Some examples are the global coffee trade, UK’s historical reliance on India to supply wood for the Royal Navy, the use of quinine as a malaria counter-agent for the colonial expansion in South America, and the use of cotton and sugarcane in early America. As one writer puts it — “indigenous peoples' knowledge of the uses of plants have often played critical roles in redefining, reconfiguring and altering the global balance of power and indeed, affording the locus for the interrogation and re-examination of the inner core of legality and justice in the historical age” (Mgbeoji 2007, 117).

The ways in which pharmaceutical companies can acquire PGRs for use in drug development are vast and largely in their favor. The *ex-situ* collections are excellent resources for PGR samples and house millions of accessions that could be useful for development. However, significant research and exploration of profitable PGRs has largely been concluded in those collection sites, thereby requiring other methods of acquisition. Other intermediaries, such as Inbio, provide a useful service mainly through their discovery of new species and their large storehouses of

samples and species. If these sources fail to provide the needed PGR compositions, then the company must acquire the samples themselves in the sovereign nation of their choosing.

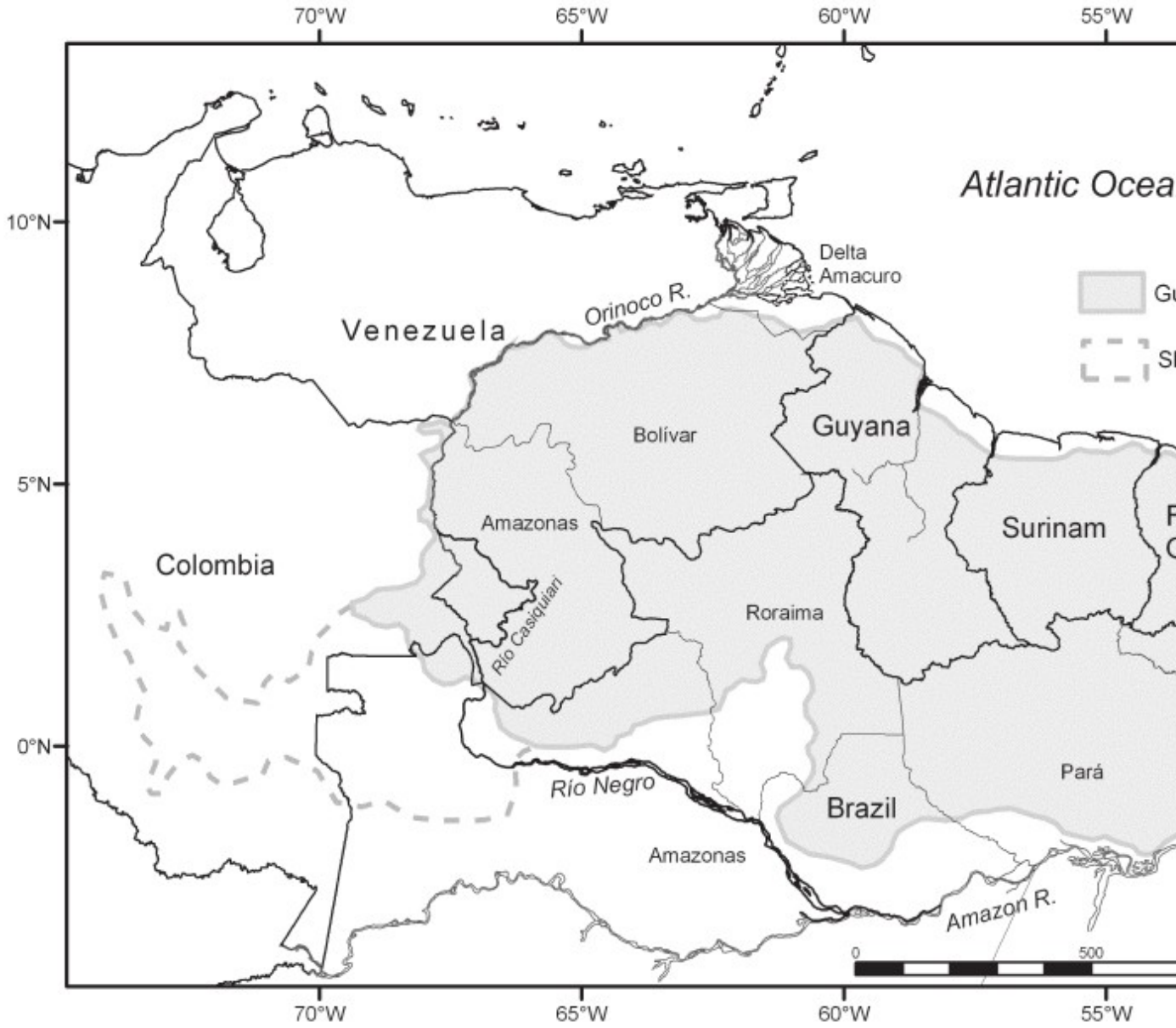
The journey to the Amazonian rainforest

After researching the companies files on drug development and promising PGR samples, Jerry realized that they would have to travel to the Amazon and speak to the indigenous medicine men. The companies last best-seller was derived from a plant the indigenous tribe used for pain relief, so his hopes are high that this could happen again. He knows there are still undiscovered tribes in the Amazon who, perhaps, use a plant that has not been researched for its medicinal qualities. Jerry calls a meeting with two researches who wrote their dissertation on indigenous tribes and their knowledge concerning the use of plants. Jerry wants to know more about the indigenous peoples in the Amazon before he sets off in search of a powerful healing plant.

The Amazon, a vast region located at the Equator in northern South America, extends over eight South American nations - Brazil, Bolivia, Ecuador, Colombia, Guyana, Peru, Suriname, and Venezuela. The river's drainage basin covers over 8 million square kilometers and is the largest forest ecosystem and water basin on earth (Sioli 1984). The Amazon River "carries a greater volume of water than any other river on earth" (Blouet and Blouet 2010, 45) and is the second longest river in the world.

Renowned for its biodiversity in both animal and plant species, exact figures of its diversity are unknown, due to the inaccessibility of major parts of the region and gaps in remote sensing technology, but an estimated 11,200 tree species and over 40,000 plant species make their home here (Wesselingh 2010, 1). A recent Smithsonian Institution research initiative, comprised of over 250 scientists from around the world, published a checklist of plants contained within the Guiana Shield (pictured below), which includes areas in the countries of Guyana and Surinam, French Guiana and the Venezuelan states of Amazonas, Bolivar,

and Delta Amacuro, and Brazil. A unique geographic area, the shield is composed of table-top mountains, tropical savannas, and rainforests (Funk et al. 2007, 7).



In the Smithsonian study, the scientists found and published 13, 367 unique vascular plant species in total (Funk et al. 2007). This information is housed in a database available for conservationists, scientists, biologists, and corporations. The rich diversity of plants supplies multiple benefits for both its inhabitants and the rest of the world. However, due

to export trade in dairy products, soybeans and other commodities, “[b]y 2005, accumulated deforestation in the Amazon had reached 857,666 square kilometers, which means that the vegetation cover of the region had been reduced by approximately 17 percent” (Garcia 2011, 25), resulting in the extinction of many insect, plant, mammal species, and displacing many indigenous tribes. In Brazil, the government is taking an aggressive approach to decrease illegal mining and deforestation on indigenous lands. On May 4th, 2012, Brazil deployed 8,500 troops to its porous borders with Venezuela, Suriname, and French Guiana (Romero 2012). This show of force is welcomed in the remote areas of the Amazon, but Brazil’s state policy is still firmly in-line with neoliberal development models.[1]

The headlong development model embraced by Brazil and other Amazonian states creates a future akin to areas such as the US and most of Europe — industrialized nations devoid of significant biodiversity due to exploitation of natural resources. As Ikechi Mgbeoji puts it — “[g]iven the preponderance of plant genetic resources in non-industrialized parts of the world vis-à-vis the genetic poverty of industrialized states (that have an overwhelming edge in technological prowess), it would seem that the commodification of plant life forms threatens global biological diversity and cultural diversity” (Mgbeoji 2006, 52). The patenting of PGRs is one facet of a multi-pronged development model linked with neoliberal capital accumulation and the subsequent market control over biodiversity.

[1] For more information, please see — Love, Joseph LeRoy, and Werner Baer. *Brazil Under Lula: Economy, Politics, and Society Under the Worker-President*. New York: Palgrave Macmillan, 2009.

Despite Latin America's fundamental connection with capitalism and unhindered growth, there exists, within their borders and without, a movement for sustainability and justice.

Indigenous communities are an extremely diverse group of people. One study, from an international conservation group estimated "that there are 5,000 to 6,000 distinct groups of indigenous and traditional peoples living in more than 70 countries. Their number total about 250 million, which is roughly four to five percent of the world's population" (IUCN 2001). The Amazon region is home to 498 distinct indigenous peoples (Kronik and Verner 2010, 16). The indigenous population of the Colombian Amazon alone "numbers around 100,000, consisting of 52 ethnic groups from 13 linguistic stocks and 10 isolated languages" (Kronik and Verner 2010,). In the Brazilian Amazon, the diverse indigenous tribes make up roughly 0.43 percent of the country's population – between 700,000 and 750,000 people (Heckenberger 2005). The majority of tribes migrated around 500AD as part of the Arawak great migration (Id at, 3-4). But, what exactly constitutes an indigenous community? Most conventions relating to indigenous communities provide a unique aggregate definition, but Jose R. Martinez Cobo, the Special Rapporteur of the Sub-Commission on Prevention of Discrimination and Protection of Minorities put it best —

> Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. They form at present non-dominant

> sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal system (Nations 2004).

As you can imagine, biodiversity, within the Amazon, is often at its highest where local populations are the most marginalized.

Racialization of indigenous spaces

Plant species in the Amazon, and other regions around the world, were shaped by indigenous communities. They did not simply find them, like mana from heaven. Practices dating back thousands of years testify to the influence of indigenous culture's connection with the land. Highly sophisticated agricultural, irrigation, and medicinal gardens have a place in tribal practices. Unlike the beliefs of many, the indigenous tribes we see nearly naked in national geographic and documentaries, don't exist in a hunter-gatherer reality. The common heritage myth, mentioned earlier, comes into question when we acknowledge that "space is not essential in nature but is constructed and produced" through myth, language, ritual, and use (Hubbard 2002, p. 14). The legal appropriation of PGRs, and their geographic shift from the south to the north along with their subsequent patents, reveals a racial epistemology that includes ideas concerning indigenous communities "lesser" dominion over natural resources.

Indigenous people create and live in their spaces through their social, political, and imaginative interactions and processes between themselves and outside groups. As one author observed, "spatial structures are implicated in the production and reproduction of social

relations in the sense that particular territorial forms both produce and reflect particular social processes" (Jackson 1987, p.3). The indigenous communities millennial long relationship between each other and their environment produces an evolving physical and spiritual connection with the plants and their medicinal properties. Processes of plant breeding, production, and introduction are just several ways a community would interact with their geographical space. By negating indigenous ownership rights to their own space, modern patent law legitimizes the taking of both land and the knowledge associated with it.

Geographic space cannot be understood through a merely objective lens, especially in the construction of indigenous communities. Colonial forces, both historically and contemporaneously, view the Amazon as a wild and unhindered space inhabited by heretics and ancient tribes. Instead, a subjective understanding of land use would acknowledge the unique relationship between land and indigenous peoples. An understanding of another culture's land use and juridical systems necessitates a clearer picture of that society and their spatial interactions. Attempting to understand and discover is essential to understanding their role in relation to national and international law. Arturo Escobar notes, "[p]lace is central to issues of development, culture and the environment and is equally essential, on the other, for imagining other contexts for thinking about the construction of politics, knowledge and identity" (2001, 155). The lack of Westernized development models and ideals does not imply that the land is without owner or devoid of stewardship. Invading and imposing a Western legal system of conduct obscures the importance

of communal interactivity between the indigenous community itself and the outside world.

Contemporary relations between indigenous communities and advanced capitalist countries reveals a fundamental tension that has existed for centuries. The indigenous Amazonian experience unambiguously shows that “racism is a product of specific historical geographies, varying across place according to processes such as colonialism, migration, labor markets, and built environments” (Kobayashi and Peake 2000, 392). The introduction of the global patent regime in the Amazon echoes the early colonial civilizing projects of the 16th century and the emergence of international law. Francsico De Vitoria, a spanish theologian and jurist, developed a legal theory that legitimized the taking of indian land, which went beyond the traditional approach in which the indians, being heretics, lacked all rights (Anghie 2005, 18). Sepulveda, a proponent of natural law, which believed the “perfect should rule over the imperfect” wrote in 1550 —

> Compare then those blessings enjoyed by Spaniards of prudence, genius, magnanimity, temperance, humanity, and religion with those of the little men in whom you will scarcely find even vestiges of humanity, who not only possess no science but who also lack letters and preserve no monument of their history except certain vague and obscure reminiscences of some things on certain paintings. Neither do they have written laws, but barbaric institutions and customs…They do not even have private Property… How can we doubt that these people—so uncivilized, so barbaric, contaminated with so many impieties and obscenities—have been justly conquered? (Olmos and Baudot 1996, 105-113)

Instead of imposing natural law as Sepulveda did, Vitoria recognized the indian’s own political personality, or sovereignty, which allowed the

imposition of *jus gentium* — universal law (Anghie 2005, 21). By characterizing the indian's as capable of reason, Vitoria confirmed the applicability of a system of universal norms which he presented as neutral and possessed by all people. For him, the conceptual gap between the savage and civilized is bridged through the assimilative processes of jurisprudence. By placing the indian's within the sphere of *jus gentium* signified a fundamental shift in relations between the two civilizations. Now, the indians must operate within the imposed and enlightened legal system of the Spaniards.

During this era, the legitimization of colonial land appropriation took the form of endless spanish incursions into indian territory, with any signs of resistance considered acts of war thereby justifying Spanish retaliation (Anghie 2005, 22). This, as Antony Anghie notes, "entitled the Spanish to 'defend' themselves against indian aggression and, in so doing, continuously expand Spanish territory" (Id.), thereby justifying juridical manipulation to achieve its original mandate — territorial conquest. Once marginalized through religious based legal frameworks, Vitoria brought the indians into the realm of modern civilization and international relations through a distorted sense of entitlement — it institutionalized racism.

Institutional racism, both historical and contemporary, exists within our legal systems. The disparate legal recognition and protection in IP regimes, for instance, is an institutionalized form of racism. One author defines institutional racism as —

> Those established laws, customs and practices which systematically reflect and produce racial inequalities in…society. If racist consequences accrue to institutional laws, customs or practices the institution is racist whether or not the individuals maintaining those practices have racist intentions (Jones 1972, 9).

For centuries, colonial states have marginalized indigenous peoples. State sponsored violence and cultural repression, suffered by indigenous peoples, mainly aims at appropriation and exploitation of natural resources and labor. Through genocide or violent legal maneuvers, indigenous peoples of the Amazon hold a subaltern state of existence. As one author notes —

> The massive killings—in Peru alone, the pre-Columbian population of 9 million inhabitants was reduced to 600 thousand in less than a century and because of the decimation of the population, natural resources became abundantly available and the continent indeed presented itself as open and bare, a garden for utopian experiments to create civilization on the basis of natural and scientific laws" (Zwarteveen 2005, 102).

Still, despite our universalized notions of human rights, a scientific, legal, and cultural hegemony exists that believes non-western understanding of plants, agriculture and development are primitive. The advent of biotechnology in medicine and agriculture, and the disparate legal protections between western and 'primitive' sciences, evinces a not so racist hierarchy. It takes the insertion of novelty into a PGR for it to be protected through IP mechanisms. Centuries long indigenous intervention in the plant's existence does not. Indeed, their traditional involvement with the plants is considered mankind's property, that is, until a Western recognized form of ownership takes control. By viewing IP regimes through a racial lens, we can see the complexities involved in its creation, imposition and disparity.

The fair and balanced facade of law cracks under critical analysis. Critical Race Theory, “seeks to take into account many of the variables that create powerlessness, marginalization, debilitating and degrading social hierarchies and exclusion” (Mutua 2000, 848). The ‘race as a social construction’ theory holds that “race and races are products of social thought and relations. Not objective, inherent, or fixed, they correspond to no biological or genetic reality; rather, races are categories that society invents, manipulates, or retires when convenient” (Delgado and Stefancic 2001, 7). Racism shifts from outright biological understandings to more subtler forms of racism and subjugation. It “does not stay still; it changes shape, size, contours, purpose, function— with changes in the economy, the social structure, the system and, above all, the challenges, the resistances to that system” (Jackson 1987, quoting Sivanandan 1983). Examining modern IP practices through a critical lens gives texture, meaning, and a broad theoretical base to interrogate the socio-legal analysis of international law and its inequities.

The international IP regime is built upon “whiteness,” which appears as “the normative, ordinary power to enjoy social privilege by controlling dominant values and institutions and, in particular, by *occupying space* within a segregated social landscape” (Kobayashi and Peake 2000, 393). Through acknowledging the racialized nature of place and space we can examine areas of exclusion, stigmatization, and erasure from the official, in this sense legal, landscape. Seen in this way, patents reflect the white privilege of Euro-Caucasian novelty, the collection of the “hegemonic structures, practices, and ideologies that reproduce whites’ privileged

status…whites do not necessarily *intend* to hurt people of color, but because they are unaware of their white-skin privilege, and because they accrue social and economic benefits by maintaining the status quo, they inevitably do" (Pulido 2000, 15). This could be one reason why we often see academics, lawyers, and policy makers support the use of IP in the global context, especially concerning indigenous knowledge. The majority's blind insistence on the current IP regime derails any meaningful movement on the international policy scale to shift the frame of understanding to a counter hegemonic non-Western system of interrelatedness and commerce.

Place is always racialized, indeed, "racialization always has a specific geography, and all geographies are racialized" (Kobayashi and Peake 2000, 395). "Racialization is…the process by which racialized groups are identified, given stereotypical characteristics, and coerced into specific living conditions, often involving social/spatial segregation and always constituting racialized places. It is one of the most enduring and fundamental means of organizing society" (Id at 393). The inferiority of races provided the (neo)colonial expansions in Latin America with ideological and spiritual certitude. The "child like" nature of indigenous communities, in the heart of the Amazon, situates the intellectual superiority of the prospector. Indeed, the film ("Amazon") mentioned in the early pages of this article, filmed a number of shots of native subjects, entirely naked but filmed demurely from the side, like Egyptian statutes. We can imagine that the Indigenous shamans would love to share their healing magic with the world. Their 'innocent' nature prescribes the

selflessness associated with children who have not yet learned the concept of “mine.” Moreover, the tribes are isolated and inexperienced, so when push came to shove, they could not litigate their interests; lacking Western liberal concepts of property, they wouldn’t mind if I took it; we could teach them our ways so they can protect their interests the way we do. In either case, the perspective remains the same — civilized v. uncivilized, white v. brown. Even the study of these ‘primitive’ sciences are called — ethnobotany, ethnopharmacology — always delineating between that which is normal and that which is foreign or ‘ethnic.’ Scientists consider the plants themselves as “undeveloped’ requiring rigorous tests and conclusive clinical trials before they become something useful, developed. As one author notes, “[s]cience has replaced religion, and today's faith in the superiority—and universal applicability—of scientifically developed technologies and institutional models resembles yesterday's proclamation of the superiority of Western civilization” (Zwarteveen 2005, 104). These ideologies always manifest themselves in space and places.

Indigenous lands are racialized spaces of exclusion that are “legally facilitated, justified, and normalized” (Price 2010, 153). In Patricia Price’s view, “[t]o be racialized is to have one’s physical, economic, social, and political mobility curtailed and policed. To be racialized is to be denied entry into the mainstream of power and privilege” (Price 2010, 166). Indigenous ownership of property and the resources therein is hotly contested and constantly challenged by the state and corporations. Neoliberal inspired legislation passed in several Latin American countries

has claimed ownership of indigenous land and forcibly expels those who do not assimilate and migrate to the state provided camps. Not only are indigenous communities marginalized within their own country, they are so within international law. The globalized marginalization of space "is premised on Europe as the center, Christianity as the fountain of civilization, the innateness of capitalist economics, and political imperialism as a necessity" (Mutua 2000, 849). Power holders sideline, co-opt, or assimilate ideations and peoples conflicting with this narrative. Situating the global south and the Amazon as spaces located in the periphery, both in the development of law and cultural understanding, and not part of the core, merely continues this racialization process. (Aoki 2000, 925).

These spaces of exclusion and marginalization are embodied within and through the social and "are not simply *reflected* in spatial arrangements; rather, spatialities are regarded as *constituting* and/or *reinforcing* aspects of the social" (Delaney 2002, 7). Through ideological and sometimes physical subjugation, whether its racially or culturally derived, allows the top down application of a white/Eurocentric practice of IP wholly unknown to indigenous communities. The objective viewing of space by the researcher, and his concomitant interest groups, is that the land is available to all for exploitation — within legal bounds, of course. The appropriation of plants from their physical, spiritual, and mythological place highlights "the role of spatialities in the maintenance of structures of domination, subordination, and inequality, and how these are experienced in body and being" (Id at 11).

The global imposition of IP regimes, the prospecting of PGRs, and the subjugation of indigenous communities allows us to see how "[s]pace defines political boundaries as well as private property — constructing, ratifying and reproducing community and individual identities as well as pre-existing distributive inequities - and then, importantly, making those outcomes seem 'natural'" (Aoki 2000, 923). The hegemonic understanding of property conflicts with the concept of space embodied by those who live, breath and work in their space and place in the Amazon. The legalized practice of subjugation, then, signifies an exodus of not only capital, but knowledge from their origination place to the rest of the world. This knowledge is then commodified and "shared" through exclusionary IP practices conducive to capital accumulation. This shift of resources hastens the continued accumulation of capital through racial embodiment of space and its (neo)colonization. The intersection of space and race between the "third world" and the "developed world" through both the individual connection between the scientist and the shaman and the nation state and globalized world, occurs both horizontally and vertically and on different scales.

Racial and legal identities manifest themselves differently depending on these different scales. Scales can be an effective rhetorical and analytical tool because it narrows or broadens our perception depending on what we need to see. We can view the local scale and examine the implications of IP on indigenous communities, or view the national scale and examine the implications of IP on Brazil, for example. Similarly, "a given subject might be "raced" differently in the context of

national or local scales of reference" (Delaney 2002, 7-8). By analyzing the different scales of law and culture we can see how racialization and biocolonialism continually reproduce themselves and law's role in that process. Laura Pulido notes that "we can focus on a particular scale, but we must always be cognizant of its relationship to other scales of racism" (2000, 15). In short, the dialectical relationship between the different scales must be theorized and organized in such a way to fully grasp the relatedness of racism between the varying scales, such as indigenous, national and international.

The universal imposition of homogenizing law promotes "the remote idea that human development entailed a universal *ascent* from savagery to civilization" (Anderson 2002, 27). State assimilation of indigenous tribes, attempting to modernize these impoverished simple people, can come about through legal mechanisms that only honor indigenous rights through the prism of euro-centric jurisprudence. Marking indigenous realities as outside the bounds of rights recognition requires their 'ascension to modernization' through jurisdictional and epistemological impositions of socio-legal understandings. The state dismisses alternative forms of governance or legal structures, which have been in place for decades if not centuries, in favor of modern rights based legal discourse. Indigenous people must acknowledge the oppressors' rules and make them their own, so that through the oppressors system, they gain relief. The tribesman must leave the Amazon, perhaps dress in Western garb, and argue before a Western inspired court of law. Or, the tribesman is

represented on behalf of the state, in the international fora, and the state *always* has its own interests in mind.

The patent system is unique in its civilizing project. The dominant argument contends that IP, and patents in particular, promotes innovation for the good of all. The shamans themselves occupy a primal world incapable of utilizing, appropriately, the plant to cure ailments afflicting a larger population. Proper exploitation of the plants healing properties requires modern science and concomitant legal protections. Retaining and protecting their traditional knowledge of the use of plants is selfish. There is a whole world in need of healing. If the indigenous people are unwilling or unable to inhabit the world of modern IP law, then another party must exploit their knowledge for the good of all. This involuntary sacrifice, as Derrick Bell put it, diminishes the rights and interests of the indigenous in favor of some greater good of others better situated, but still afflicted, groups. The common heritage IP regime provided the avenue for corporations and entrepreneurs to claim global benefit until a profitable product was created, then the patent was assigned and excluded all other users from its benefit, unless they could pay. Patents 'civilizes' through coercion. If indigenous tribes do not protect their knowledge in a way that is understood in modern IP law, then appropriation blatantly occurs with the imprimatur of the civilized's international law.

Jurisprudential arguments seek to envelope TKUP into IP regimes while simultaneously dispossessing their knowledge by marginalizing their position within the IP regime — they lack protection from the very source

where their supposed protection is derived. Self-serving legal concepts such as *Terra Nullius*, which legally and morally legitimized the imperial taking of indigenous land, play a comparable role to the public domain concept of late capitalism (Whitt 2009, 162). Western companies mobilized the use of public domain to legitimize their taking. Additionally, "The extension of the commons concept to these resources and the related traditional knowledge about their uses is a scheme crafted by the industrialized biotechnology countries to confine to the public domain some valuable resources that are found in other states but pivotal for their own biotechnological development" (Onwuekwe 2007, 34). While formal recognitions in international IP regimes support an evolving understanding of TKUP and IP, the inclusionary/exclusionary legal tactics continue to dispossess indigenous communities. Patents reward the "modification" or the "discovery" practices of Western societies instead of the trangenerational practices that created TKUP.

The civilizing mission proceeds today as global institutions, dominated by Western interests, impose universal jurisprudential concepts —

> What the world has witnessed in the last five centuries is the universalization of an international law that is particular to Europe and seeks not universal justice, but an international legal order that erects, preserves and embraces European and American domination of the globe. It is impossible to provide any other reading for the racialization of international law by its chief authors, the Europeans and the Americans (Mutua 2000, 850).

The international jurisprudential framework appeals to policy makers by providing a neutral and universal basis for promoting a navigable legal

terrain — if the rules are followed, then everyone wins. Any other system of property or embodied understanding becomes marginalized and outcaste. In this fashion, IP provides the legitimating rationale for the acquisition and exploitation of indigenous plant resources and associated knowledge — "[t]he dominant conceptual framework is held to have certain features that indigenous frameworks lack, and which render it superior. Such alleged superiority…justifies the assimilation of those frameworks and cultures to it" (Whitt 2009, 163). This rationale is imposed over time until we lose the ability to imagine the world in any other way. We have become assimilated, disciplined and homogenous. The hegemonic IP practices sharpens the veneer of a legal global harmony. Yet, this system originates in Western colonial machinations of capital accumulation. Institutional inequities surface by critiquing the foundations of the system that we are told is inherently "fair." But, fair for whom?

A visit to the lawyer

Jerry returns home after several months in the Amazon. The company rented out a six bedroom house built exclusively for millionaires and corporate excursions not far from some the richest biodiversity in the world. Jerry would, once a week, take day long excursions guided by a well paid indigenous entrepreneur who would share the secrets of his tribe — for the right price. The guide showed Jerry the amazing regenerative power created by fashioning a paste from the leaves of the areas tallest tree. He applied the paste on a young child who burned herself while cooking and within days the burn was gone. Eureka! This is what is company is looking for! If the company could market a regenerative cream for use with burn victims, skin diseases, and anti-aging creams, the company would be back on top. Jerry collects several kilos of the leaf and takes off back to the States. Before researching the properties of the leaf,

Jerry goes to the corporate counsel and asks him about the possible intellectual property issues.

Bioprospecting is the exploration of native habitats for commercially valuable genetic resources (Sarah Laird 2002b, 244). This exploration encompasses the search for knowledge and resources, its acquisition, and the intention to commercialize the product. "Research only becomes biodiversity prospecting once the researchers spot the commercial potential and conduct their investigations with this in mind" (Id at 245). IP law characterizes itself as protecting the little guy from the interests of industrialized corporations and states. Yet, this is not how it often turns out. Investment and research in biotechnology IP are "disproportionately focused on developed-world markets. Furthermore, an estimated 95% of the patents and plant breeders' rights in force today are issued in and assigned to inventors in developed countries" (Phillips and Onwuekwe, 8). Bioprospecting and the development of medicines and agricultural plants continues to change the face of biodiversity throughout the world. The bioprospecting procedure attempts to strike a balance between the actors own self interest and the interest of the indigenous community. However, when this process is done illegally, it becomes biopiracy.

Biopiracy revolves around the patenting of TKUP and the plants themselves by foreign institutions and other actors without consent. Built on the premise that biological resources are not public goods, biopiracy holds that certain stakeholders have a proprietary interest over them (Miguel Alexiades 2002, 3). Pat Mooney, the creator of the term defined biopiracy as, "the appropriation of the knowledge and genetic resources

of farming and indigenous communities by individuals or institutions who seek exclusive monopoly control (patents or intellectual property) over these resources and knowledge" (Etc 2012). Vandana Shiva, an early proponent against biopiracy defines it as, "the use of intellectual property systems to legitimize the exclusive ownership and control over biological resources and biological products and processes that have been used over centuries in non-industrialized cultures" (Shiva 2001, 49). While it may seem common sense that an actor should not take a valuable plant from the Amazon, patent it, and realize a profit without compensating its sources, this is the widespread practice. The Convention on Biological Diversity (CBD), with many signatories, for the first time provided sovereign protection over biological resources. Still, many believe that any commercial use of genetic resources is biopiracy because the legal and political environment cannot adequately ensure the rights and benefits of indigenous communities (Sarah Laird 2002b, 243). For example —

> local farmers in Nigeria developed an insect-resistant cowpea. Needless to say, those local farmers did not "publish" their findings or their results in a "reputable journal" reviewed by their "peers." However, on a trip to West Africa, Angharad Gatehouse, a scientist at the University of Durban, obtained some of these seeds. Using "formal" techniques, he identified in "scientific language" the genetic mechanism that causes the locally developed cowpeas to be insect-resistant. As Buchanan notes, "he [the scientist] promptly left the university and joined Agricultural Genetic Company of Cambridge and they proceeded to apply for a patent on their 'invention.'" The practical result was that local farmers were short-changed by the inter- play of patent systems, which erased their hard work and intellect simply because they failed to "publish" their observations in written form. (Mgbeoji 2006, 14).

This example illustrates how patents render invisible the non-Western forms of invention, so that appropriation can occur legally. Subsequently, the company then requires compensation from the communities to buy pharmaceuticals (or food) derived from their local plants. This circular capitalization resembles extortion or ordinary theft.____

Geertrui Van Overwalle questions whether the contribution of TKUP to a pharmaceutical product can be the sort of contribution that meets patentability standards. She notes four distinct barriers to the patenting of TKUP. First is the understanding that indigenous peoples do not view their heritage as property at all, but as a communal and individual responsibility (Overwalle 2007, 359). This common association between indigenous peoples and a monolithic view of property does not take into account the diverse views on property and the "internal protocols" used by indigenous communities to protect their knowledge. While many still do believe "[t]he concept of excludability, which is one of the hallmarks of the liberal idea of property ownership, is absent in the traditional communal property paradigm" (Phillips and Onwuekwe, 12), and perhaps rightly so, it would be naive of us to believe that all indigenous communities are included with this statement. Second is the principle of patent law that presumes it incentivizes inventiveness and creativity, commercialization and distribution, by offering the patent holder a period of exclusive rights and that indigenous communities have no interest in the commercialization of the TKUP (Overwalle 2007, 359). However, this romanticized view of indigenous peoples interests as being stuck in time

and pre-capitalism ignores the dynamic and evolving shape and substance of TKUP (Balick 2007).

Third, is the novelty requirement of patents. TKUP is commonly understood as "transgenerational, communally shared and considered to be in the public domain and, therefore, unprotectable" (Overwalle 2007, 359). However, WIPO conducted a fact-finding mission, crossing multiple continents, on TKUP and concluded that definitions, "must reflect the internal cultural cognitive categories of the particular community and must necessarily be developed on a case-by-case basis. It would be incorrect to assume that all indigenous communities are homogenous" (WIPO 2001, 211). The report also recognized "vast differences among indigenous communities across valleys, let alone across continents…[and] there are diverse interests in ownership/exclusion on the one hand versus openness to all on the other hand… and the differing desires to commercialize versus maintaining secrecy of such knowledge." (WIPO 2001, 213). Another question relating to patentability is the publication of TKUP by ethnobotanists and ethnopharmacologists that negates the requirement of novelty. Van Overwalle notes "that patents applied for often do not concern the precise use undertaken by the indigenous community" (2007, 359). For example, a plant used for burns by the indigenous community becomes scientifically formulated for asthma in Western societies − the patent will be for asthma not burns. An issue exists because the indigenous community led the researcher to the plant, but the patent or publication would not negate the novelty requirement. This systematic organization of IP means that "[i]ndigenous knowledge

and generations of indigenous labor – mental and physical – are discredited. All that is credited is the "chop-shop" labor of individual corporate and academic scientists who interject "novelty" into what they have taken" (Whitt 2009, 162). The fourth barrier is the notion of the inventor in patent law being an individual not a group of individuals (Overwalle 2007, 360). This area of IP is hotly contested as the Eurocentric notion of individualism is not readily accepted in the global south where a majority of indigenous groups hold property in common.[2]

This returns to the terrain of a monolithic indigenous community that ignores the dynamism and complexity of the global indigenous peoples. The diversity of indigenous communities cannot be understood by Western epistemological practices that seek to contain or understand that which is "indigenous." Indigenous communities, even those yet undiscovered, have undergone numerous changes over time based on their relation to place and space. For this reason, "there can be no single, 'traditional' response to the physical and spiritual world that surrounds a particular group. Knowledge is therefore not a belief system that is somehow fossilized or unchanged – locked in some romantic time warp of a recreated past" (Ross 2011, 25). Therefore, any attempt to create a grandiose meta-jurisprudence that seeks to assimilate TKUP and the indigenous communities will ultimately fail.

Since the mid 90's, when states began to resist systematic biopiracy, new rules governing biodiversity research emerged. The

[2] In June 2005, the Inter American Court of Human Rights recognized, for the first time, a collective ownership of property in the case of Moiwana Village v. Suriname. This may be the beginning of an international legal recognition of property rights, which may extend into IP.

framework bases itself on international treaties (e.g. the CBD), national laws, and finally, self-imposed regulations of corporations and university researchers (Laird 2002, xxii). Moreover, contractual arrangements with indigenous groups and other interest groups provides another source of foundational regulation. Most biodiversity research institutions have codes of ethics and research guidelines to inform their work in the complex ethical and practical arena of biodiversity exploration. These self-regulating mechanisms attempt to address how one goes about navigating the legal terrain of research and exploitation, but "the bulk of researchers remain unaware of the new ethical envelope within which biodiversity research takes place, and the majority of codes and guidelines today remain vague and undirected" (Sarah Laird 2002a, 32). However, Sarah Laird is positive that, "through the development of an ethical culture within the research community, in part resulting from this ongoing process, will the complex and case-specific application of the principles underlying codes of ethics be possible" (2002a, 32). Reliance on the self-regulation of MNCs, whose only guideline is profit, and other self-interested actors seems misplaced. Respectable relationships to indigenous communities should not occur through the good graces of corporations, but through substantial transformations in national and international law, knowledgeable negotiations, and honest communication and benefit sharing.

The Convention on Biological Diversity

In 1992, at the Rio Earth Summit, the Convention on Biological Diversity (CBD) came into effect. As of May 2012, there are 193 parties who are legally bound by the convention (The United States is one of several who are not yet parties to the convention). The CBD represents an attempt to establish an international program for the conservation and utilization of the world's biological resources and for the "fair and equitable sharing" of the benefits arising from the utilization of genetic resources and reaffirms the state's control over their own biological resources (CBD 1992). The passage of the CBD is clearly an example of, what Derrick Bell called, interest convergence.[3] The affirmation of sovereign control establishes property interests of the *ex-situ* collections that house over six million accessions appropriated in the decades prior by the North. Now the large PGR collections have control over who accesses and uses the samples. The property interests over biological resources converged between the North and South. As you could imagine, "the single most divisive issue in the negotiations was the relationship between intellectual property rights and access to genetic resources." (Choudhary 2006, 92).

The CBD is the first international legal agreement explicitly addressing indigenous protection of their genetic resources. The Convention broadly defines "genetic resources" as "any material of plant, animal, microbial or other origin containing functional units of heredity" of "actual or potential value" (CBD 1992). However, the convention

[3] This concept holds that white elites will tolerate or encourage racial advances for blacks only when such advances also promote white self-interest.

relegates the scope to “indigenous and local communities” instead of “indigenous peoples.” Thus, “ it ignores Indigenous peoples’ status as rights-holders in international law and instead demotes Indigenous peoples to the status of ‘stakeholders’, a category that includes corporations, academic institutions, NGOs and just about any other non-governmental entity” (Harry 2011, 709). The parties to the agreement must implement the Conventions’ three principle objectives —

> (1) the conservation of biological diversity, (2) the sustainable use of its components, and (3) the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies (CBD 1992).

Indigenous peoples are not and cannot be parties to the treaty because the convention is limited to UN membership. Thus, indigenous interests are brokered through their sovereign. The CBD does not have a juridical body to enforce treaty agreements, but instead has a decision-making body the Conference of the Parties that passes recommendations. To assist in the implementation and addressing issues concerning the protection of TKUP, the CBD created an ad hoc working group in 1999 called *Working Group on Article 8(j) and Related Provisions*. Articles 8 and 15 are the primary indices of indigenous rights.

CBD Article 8(j) requires state-parties to —

> Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the

> holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices (Programme 1992).

The "subject to its national legislation" language reveals the noncommittal stance of states that did not want to be legally bound to protect indigenous rights. The lack of state accountability is troubling in states where no, little, or even limited protection of indigenous rights exists. The CBD imposes no state obligations to incorporate laws to protect indigenous rights. The ambiguous nature of the term "holders of such knowledge" complicates the approval and involvement requirements. For example, could "Jerry's" indigenous guide be considered the holder of knowledge? From here, the drug company would only need his approval and involvement in the development of the drug. This ambiguous term ignores the complicated and unique nature of indigenous interactions both within and without their community. Moreover, the "approval and involvement" requirement is substantially weaker than the international legal principle requiring "prior informed consent." As enumerated in Article 15, the CBD only requires "prior informed consent" from the state, not indigenous peoples.

Article 15 of the Convention is particularly problematic for Indigenous peoples. The text of Article 15 reads as follows, "[r]ecognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation" (CBD 1992). This negates any possibility of indigenous ownership rights. Instead, "indigenous peoples are recognized only as holders of traditional

knowledge and not as communities sovereign over natural resources found in their territories from which consent must be obtained before accessing these resources" (Schlais 2007, 615). Indeed, the state controls access and owns all genetic resources within the borders. A farmer may own a cow and plants, but the state owns the genetic makeup of that cow and plant. Moreover, as seen in current news stories and historical accounts, Latin American countries are willing to forcibly displace indigenous peoples from their land to access natural resources. Therefore, if the displacement of indigenous tribes is legitimated through coercive legal measures, then the appropriation and commodification of their genetic resources by the state is legal in international law. Despite the possibilities of exploiting this loophole, the convention does provide for the equitable sharing of benefits derived from the utilization of the genetic resources of a signatory.

The equitable sharing of benefits is highly controversial. Many indigenous groups argue the impracticality of an equitable system within international IP law. If the signatories agree to a mutually agreed term (Art. 15.4), then art Art. 15(7) requiring each Contracting Party to "take legislative, administrative or policy measures, as appropriate" and in accordance with a number of specified provisions of the Convention, "with the aim of sharing in a fair and equitable way, the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources" comes into play (CBD 1992). In other words, if a state is brokering a deal for indigenous peoples, then the state must take some

political measures to share the benefits. Unfortunately, the ambiguity of the term “as appropriate” is another loophole clever lawyers and politicians can exploit to sideline any requirements to share the benefits with indigenous peoples. Article 8(j), mentioned above, envisages the "equitable sharing" of benefits with indigenous and local communities, arising out of the use of the traditional knowledge, innovations and practices of those communities (CBD 1992). However, this Article has not impeded the continued appropriation of TKUP. In 2010, the Conference of the Parties adopted the Nagoya Protocol, which focused on equitable benefit sharing that many argued was not working.

The ad hoc Working Group on Access and Benefit Sharing, established in 2004, led the negotiations. The International Indigenous Forum on Biodiversity (IIFB), the officially recognized body with an advisory role to the CBD, were not allowed to participate, as usual practice, in the negotiations (Harry 2011, 710). Instead, several hand picked indigenous representatives were chosen to represent indigenous interests (Id). The nontransparent process of selecting the indigenous representatives and the negotiation minutes themselves reveals —

> No political will to protect Indigenous peoples’ rights to their genetic resources within their traditional territories, lands and waters, and associated traditional knowledge. Instead, parties chose to use the regime as a means to subject Indigenous peoples’ rights and resources to domestic legislation (Harry 2011, 710).

Despite the noted loopholes, the Protocol has not changed any substantive law improving indigenous rights and protections. For example, Art. 6 (Access to Genetic Resources) notes that genetic

resources and their access is the sovereign's prerogative, and any access requirements are "subject to domestic law" and must only seek indigenous consent if the indigenous people "have the established right to grant access to such resources" (Nagoya 2010). Access to TKUP (Art. 7), requires "prior and informed consent;" However, this requirement must only be "in accordance with domestic law" (Nagoya 2010). Moreover, in Article 12 we see the same, "the state *in accordance with domestic law* take into consideration indigenous and local communities' customary laws, community protocols and procedures, as applicable, with respect to traditional knowledge associated with genetic resources" (Nagoya 2010). This Article only requires the state to consider indigenous people and TKUP — not to integrate it. Oddly, the Nagoya Protocol does not apply to Art. 8(j), the equitable sharing of benefits with indigenous and local communities, mentioned earlier. Indeed, the additional protections and subsequent remedial measures in the Nagoya Protocol are only for the states.

While the CBD had enormous rhetorical and symbolic impact, biotechnology firms still threaten indigenous communities and global biodiversity. Abetted by clever lawyers that help narrow the CBDs definitions and applications, disguise ownership rights of PGRs, and exploit loopholes such as "subject to domestic law", and "established right to grant access" corporations and state interests marginalize and repress indigenous peoples interests. In situations where benefit-sharing replaces biopiracy, the indigenous peoples may be enticed to enter into the commodification stream of their TKUP. The CBD is state oriented and

does not acknowledge indigenous peoples as owners and right holders of TKUP and the PGRs within their territories. The CBD constructs indigenous knowledge holders with some economic rights when their knowledge is used by others, but refuses to require their consent before corporations, states, and individuals access their resources (Harry 2011, 709). As the CBD provides ownership rights to states, the Trade Related Aspects of Intellectual Property Rights (TRIPS) provides ownership rights to individuals.

Trade Related Aspect of Intellectual Property

TRIPS was came into force as part of the World Trade Organization (WTO) in 1995. IP, prior to TRIPS, was not covered by the General Agreement on Tariffs and Trade (GATT) the legal bedrock and precursor to the WTO. Each signatory could apply their own IP regimes in accordance with their own circumstances. With the advent of TRIPS, each member of the WTO must comply with its requirements. Its passage defined the standardized minimum IP protection that each WTO member must enforce. In the TRIPS system, the property owners are private actors who are responsible for enforcing their property rights. The state signatory is required to establish effective procedures to enforce IP rights including civil judicial procedures and remedies, injunctions, criminal sanctions, and other requirements creating a fair and equitable protection scheme (Abbott 2007, 463-4).

Developing countries that did not provide patent protections for the subject matter presented in TRIPS were granted a 10-year transition

period; however, pharmaceutical and agricultural patents must be accepted during this time and reviewed after the transition period concludes (Abbott 2007, 461). . Some government infrastructure requirements included the passage of IP laws in their national legislatures to comply with TRIPS and the creation and funding of patent and trademark offices, which require a substantial commitment of resources and expertise draining poorer countries of already scant resources (Gollin 2008, 43). The minimum term of a patent under the TRIPS Agreement is 20 years from the filing of the application.

The IP system formalized in the TRIPS agreement is Eurocentric and replaces any prior innovation systems in signatory's state. A fundamental principle of the TRIPS agreement is the most favored nation treatment that "obligates each Member to extend the same IP privileges and immunities granted to nationals of one Member to nationals of all other Members" (Abbott 2007, 454). This provides a "fair" trade and IP system where each state can rely on the other to protect their IP interests. The near universalization of the TRIPS IP regime mark it as the dominant system. TRIPS also provides a dispute resolution regime, unlike the CBD. Many nations had no choice in signing TRIPS if they wanted to be active members in the hegemonic international trade regime. Signing onto the WTO affected developing countries current IP regimes.

The passage of TRIPS exacerbated issues facing indigenous peoples. Prior to TRIPS, many countries did not allow the patenting of life forms, PGRs and TKUP (Lea 2008, 265). This all changed. Article 27.1, which defines patentable subject matter, proclaims "patents shall be available

for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application" (WTO 1994). Article 27.3(b) states that member states may exclude patentability of the following —

> plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof (WTO 1994).

The *sui generis* exception allows for a "one of a kind" alternative to the TRIPS framework either through the state's own patent system, a modification of an IP system, or something wholly unique to IP law. Art. 27.3(b) does provide states an opportunity to create a system that brings in the environmental, community ownership, and human rights concerns of indigenous people (Craig 2004). However, the *sui generis* systems can cause conflicts between states and lead to disputes. Despite 27.3(b) the *sui genereis* system must be created by the sovereign. TRIPS itself does not provide any protections for indigenous peoples.

There are several significant disparities in the TRIPS agreement. First, patent or IP right holders can exclude others from making or selling plants or PGR products; second, there is no provision for seeking prior informed consent from governments or communities; third, there is no provision requiring patent or IP holders to share benefits with the country or communities that are the source of diversity; and, there is no provision to protect biodiversity — on the contrary — nothing should impede free trade (Choudhary 2006, 96). Clearly, TRIPS preserves corporate power to

appropriate PGRs without consent and without repercussions. While the CBD does provide protections that TRIPS does not, TRIP members will fall in-line with the WTO because of its benefits and enforcement mechanisms. As one author notes —

> "[a]t its worst, TRIPS legitimizes the transfer of exclusive ownership and control of biological resources and traditional knowledge from indigenous innovators to western ones, with no recognition, reward or protection for the contributions of the indigenous innovators. (Bratspies 2006, 327)

TRIPS influence concerning the commodification and commercialization of PGR and private ownership has inspired large biodiversity plans in Brazil. In 2007, the Brazilian government passed the Biotechnology Development Policy. In a speech announcing the policy, President Lula stated, "by holding twenty percent of all global biodiversity and vast forests, Brazil stands out as an important country in this new development vector. The goal of the Biotechnology Policy is to fully exploit this potential so that in the next ten to fifteen years, Brazil will rank among the five greatest research, services and biotechnological production centers in the world" (Octaviani 2010, 80). Brazils' national policy moves away from the supplier of raw materials to the global market, but will now exploit their materials in-house with hopes to position the country as a world leading biotech center. The recent Biotechnology Development Policy will be funded by a federal government endowment of US$3.5 billion in public funds, hopes to have an additional US$2 billion in private funds, and will be guided by the National Biotechnology Committee — composed of researchers and civil society (Octaviani 2010,

82). In 2008, “nearly 200 life science companies in the country were identified, 40% of which were classified as biotechnology companies” (Octaviani 2010, 90) which means that significant amounts of state funded and private corporations are circulating within Brazil. The biotechnology industry activities are shaped by the dominant IP regime, which in Brazil’s case, is highly influenced by TRIPS (Octaviani 2010, 91). TRIPS in turn, is highly influenced by the commercialization of IP. As evident by President Lula’s address, biodiversity exploitation is both a political and economic issue.

Both the CBD and TRIPS are the dominant IP frameworks concerning indigenous peoples. The CBD prefers state ownership while TRIPS prefers the individual. Both legal frameworks have loopholes and ambiguities easily exploited by clever lawyers. Both legal frameworks do not provide the necessary protections to markedly decrease incidents of indigenous appropriation.

Spaces of resistance

After speaking with the lawyer, Jerry believes they will not have a problem with patenting or enforcing their patent rights in both national and international courts. He thinks this drug will help thousands, maybe millions, of people around the world and it would be a shame if this knowledge was hidden and only benefitted the isolated tribe in the Amazon. However, he is worried about the backlash that may occur from indigenous groups and human rights organizations, so he calls up one of his friends who studies indigenous movements at Stanford. Perhaps his buddy can assuage his fears.

Indigenous acts of resistance to biopiracy and the patenting of culture, knowledge, and mythology occurs in a variety of spaces, each

with their own benefits and weaknesses. Kobayashi notes, “an understanding of how a variety of social processes comes together in places, as well as how certain places assume more power than others by restricting or controlling spatial access” (Kobayashi and Peake 2000, 398) is essential in developing global and local strategies of resistance on different scales. Innovative efforts to reform the socio-economic structures on the local level are fragile and vulnerable to larger fields of power, thus, local efforts cannot effectively function without major structural support (Wright 2001, 206). Through the reclaiming and reappropriation of places of power, whether they be cultural, political, or legal must be a part of any radical movement against capitalism and the commodification of TKUP (Escobar 2001, 156). Through this decolonization of space, indigenous peoples reclaim not only their control and ownership of their land, but also of their cultural identities, which predates any (neo)colonization impositions, appropriations, or assimilations. By recognizing the spatial landscapes associated with different resistance methods provides opportunities to correctly navigate those spaces. Each place requires unique insights and some places are exclusionary and require individuals with certain credentials to enter.

The nature of the global IP regime determines the organization of the resistance against it. Arturo Escobar notes, “the colonizing forms do not triumph completely; there are structures, relations and behaviours that constantly escape them and which act as means of resistance and creativity” (2005, 167). Global movements against disparate economic outcomes and commodification of TKUP is constantly growing, forcing the

global IP system to become more systemic and coercive. Advocates of change cannot limit themselves to abstract disconnected demands or criticisms, but instead should develop an integrated common agenda. Advocates for change "are pushed to formulate a global vision for society, rather than simply denounce legal dispositions or policies, and the time frame in which they plan their actions to serve longer-term objectives expands accordingly" (Krikorian 2010, 72). The networks of resistance from the local to the global and a grounded envisioning of emancipation are essential.

Social movements, that emerge from a single incident, can link with others in an ever widening network of protests and direct action. Indigenous peoples, represented by those with the legal expertise, can litigate their claims in national and international courts. Indigenous groups can form interlinked communities outside the purview of the state and capitalism. And, indigenous people can lobby and make concerted action to change legislation in their state. However, with each tactic that navigates through state systems, there is the possibility of what Reva Siegal calls "preservation through transformation." Siegal posits —

> efforts to reform a status regime do bring about change — but not always the kind of change advocates seek. When the legitimacy of a status regime is successfully contested, lawmakers and jurists will both cede and defend status privileges — gradually relinquishing the original rules and justificatory rhetoric of the contested regime and finding new rules and reasons to protect such status privileges as they choose to defend. Thus, civil rights reform can breathe new life into a body of status law, by pressuring legal elites to translate it into a more contemporary, and less controversial, social idiom (Siegel 1996, 2119).

Oftentimes, law reform has not brought about the substantive fundamental change that marginalized groups have sought. Instead, the national narrative is changed, in some superficial way, while preserving elite power and interests. This process, while theorized in the American experience, explains the preservation of corporate and state interests over TKUP and PGRs instead of ownership and cultural relativism of indigenous peoples. Combatting preservation through transformation requires the concerted critical resistance efforts of those marginalized by the global IP regime and their allies.

Resistance to the global IP regime takes many forms, but by framing the appropriation of TKUP within the legal framework itself is a critical component to its deconstruction. As Pat O'Malley observed in the Australian aboriginal experience —

> The identification of a social problem as a legal need rather than some other sort of problem altogether is dependent on the place that the law occupies in the society concerned, and especially the extent to which legalism permeates social consciousness. To identify a problem as a legal need is to make a particular judgment about appropriate solutions to that problem and then to recast the conception of the problem to accord with the nature of the proposed solution (O'Malley 1983, 104).

The harms associated with the appropriation of TKUP are the affects of global capitalism and resistance to capitalism must take form through the ways in which capitalism imposes itself upon societies. By focusing on the legal regime of IP our resistance is narrowed to a workable site of resistance. While alternatives take shape by navigating an alternative community based experience by working outside of capitalism and the state, that form of resistance is local and does not alleviate the global

harms of appropriative IP practices. By building networks of resistance, the local becomes global and indigenous peoples solidarity counters the hegemony of corporate and state controlled IP regimes. Of course, the complexity of issues are not limited to only the legal system, but through the legal system we argue that a wrong is being and has been committed. The recognition of a wrong, in the oftentimes unjust legal system, can sometimes provide legal judgements providing remedies and precedent setting victories for indigenous peoples.

Indigenous peoples themselves normally lack access to adjudicate TKUP appropriation in IP regimes such as TRIPS. Excluded from such places of power, indigenous peoples may find themselves represented by a broker class — individuals from their fold but assimilated — or represented by the state whose interest lies in capital and political accumulation (Acuna 2004). Still, the litigation of patent claims is not only expensive, but require actors educated in patent law litigation. Formal resistance to IP law in this way requires the support of outside allies, which may include the state. There is the possibility that the interest of the state and indigenous peoples can converge in an emancipatory manner that releases both groups from the coercive practices of the dominant IP regime. Yet, a strong possibility exists within law reform movements led by indigenous groups where judicial conclusions and state practices result in smaller and smaller concessions or co-optations of their social movements. This returns to the notion of preservation through transformation and requires a commitment to long-term strategies of resistance.

Despite the existence of the CBD, the premier legally binding convention, biocolonialism reigns stronger than ever. Therefore, other legal methods of resistance can combat the appropriative corporate and state practices of TKUP. One method is the defensive use of patents. Although this requires the indigenous communities to integrate with the very system that dispossessed them, it still can provide protections that would otherwise not exist. The defensive approach seeks to protect the unauthorized use and acquisition of TKUP through patents or documentation in a database (Carvalho 2007). With the advent of TRIPS, each signatory must have both a patent and trademark office. By allying with NGOs, indigenous peoples can attempt to patent their medicines, thereby excluding others from its appropriation. TRIPS allows “process” patents, so indigenous peoples can apply for patents that involve preparation and plant combinations. Reiterative attempts to patent TKUP and associated plants until the patent office accepts the application could also be a fruitful practice. These patents have only one purpose — to prevent others from acquiring rights in their knowledge. The second approach to defensive patenting requires indigenous people to publish TKUP. As a result of publication, the knowledge becomes a part of the state of art. This effectively destroys the novelty requirement. All future patents based on or related to this knowledge must be denied. The defensive use of patents can be a stop gap measure to decrease the instances of appropriation, but by no means should it be considered the primary method.

Opponents against the patenting of TKUP argue that it falls outside IP protections. Fundamental principles of IP are based in labor theory and utilitarianism (David Castle 2007, 71). Labor theory first appeared in John Locke's *Second Treatise of Government.* In that treatise, we see the specter of the commons, which was colonially imposed on indigenous land, whereby the state of nature as god created it has no owner. Locke posits that a man has property in anything that is "by him removed from the common state Nature placed it in, it hath by this *labour* something annexed to it, that excludes the common right of other men" (Locke and Laslett 1988, 288). Indigenous communities would have a difficult time proving their proprietary interest using the labor theory because the knowledge is generally centuries old and already considered the commons under colonial rule and modern IP regimes. Indigenous peoples' ancestors created the medicinal use, not a current user. According to the utilinarianism argument, patents lead to inventions that will benefit society. Since TKUP and the plants themselves are already invented, granting a property right for something that has existed for years doesn't incentivize inventions. David Castle believes —

> The conclusion is therefore that neither natural property rights nor utilitarian arguments justify a property right in traditional knowledge per se. This does not mean that no traditional knowledge may become subject to intellectual property rights on the same basis as other knowledge; it simply means that the mere fact that knowledge is traditional is insufficient in itself to justify the granting of a proprietary interest. In the absence of a justification to limit freedom, we can only conclude that we are free to use traditional knowledge as we wish (David Castle 2007, 72).

Working within the legal framework of global IP that marginalizes indigenous people seems counterintuitive. However, as one author notes —

> Voicing a concern for indigenous property within a legal framework of intellectual property strategically works to alert the law to a concern to which it may have otherwise been blind. Because the challenge is set within the law's own terms of reference it must engage the challenge. Not to do so would undermine the legal narrative of 'universalism'. Thus a possibility for utilising law also depends upon recognising the emancipatory potential of property (Anderson 2009, 43).

Because the global IP regime is in favor of state and corporate interests does not mean resistance movements should abandon a potentially useful tool. By trying test cases in national and international courts, indigenous people and their allies can shift the current discourse discounting indigenous peoples identities and culture. While this strategy may rely on the maneuvers of judges and lawyers, there is still a possibility for indigenous emancipation, or at least, enforced judicial decisions.

Critics believe the strategies of IP litigation and the defensive use of patents denies the foundational principles of indigenous concepts of property and should not be the avenue of resistance. As noted earlier in this paper, the global IP regime does not recognize indigenous rights, and to do so would require a dramatic shift in conceptions of property. This shift in thinking would require the recognition of collective rights and not only property rights in individuals or states. One author puts it — "Indigenous groups thus face an unpalatable choice: either remake their traditional knowledge in the image of the rights claimed and recognized within the dominant society and break down the essence of their

traditional culture into distinct sticks of property, or deny themselves access to existing intellectual property protections" (Bratspies 2006, 333). Viewed in this way, it seems like there is no way to counter the systemic invasion of IP law into ways of being. In 1993, Erica-Irene Daes, Special Rapporteur of the Sub-Commission on Prevention of Discrimination and Protection of Minorities and Chairperson of the Working Group on Indigenous Populations declared —

> Above all, it is clear that existing forms of legal protection of cultural and intellectual property, such as copyright and patent, are not only inadequate for the protection of indigenous peoples' heritage but inherently unsuitable. Existing legal measures provide protection of limited duration, and are designed to promote the dissemination and use of ideas through licensing or sale. Subjecting indigenous peoples to such a legal scheme would have the same effect on their identities, as the individualization of land ownership, in many countries, has had on their territories - that is, fragmentation into pieces, and the sale of the pieces, until nothing remains.(Daes 1993)

Almost twenty years later and the situation has not changed. However, this has not dettered indigenous peoples struggles against this unjust and racist system.

Indigenous organizations and the UN Declaration on the Rights of Indigenous Peoples envision alternatives to the global IP regime. The 1993 *UN Declaration on the Rights of Indigenous People*s specifically mentions intellectual property rights as one of many areas in which Indigenous self determination is necessary. Part IV of the declaration enumerates —

> Indigenous peoples are entitled to the recognition of the full ownership, control and protection of their cultural and intellectual

> property. They have the right to special measures to control, develop, and protect their sciences, technologies, and cultural manifestations, including human and other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, and visual and performing arts (UN 2007).

The *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples,* passed in 1993, suggests a new way of looking at the protection of property. The Nine Tribes of Mataatua in the Bay of Plenty Region of Aotearoa New Zealand convened the meeting which brought in 150 delegates from indigenous communities around the world. The declarations recommendations are that —

> (a) Collective (as well as individual) ownership and origin-retroactive coverage of historical as well as contemporary works;
> (b) Protection against debasement of culturally significant items;
> (c) Cooperative rather than competitive framework;
> (d) First beneficiaries to be the direct descendants of the traditional guardians of that knowledge; and
> (e) Multigenerational coverage span (Mataatua 1993).

The *Declaration of Shamans on Intellectual Property and the Protection of Traditional Knowledge and Genetic Resources* signed by Indigenous groups throughout Brazil provides an alternative vision of indigenous peoples' resources. They declare —

> As traditional indigenous peoples who inhabit diverse ecosystems, we possess knowledge on the sustainable management and use of this biological diversity. This knowledge is collective and is not a commodity that may be commercialized as any good in the market. Our knowledge on biodiversity is not separate from our identities, our laws, our institutions, our system of values and our cosmological view as indigenous peoples…[and] we affirm our opposition to all forms of patentability arising out of the use of traditional knowledge and we request the creation of mechanisms of punishment to prevent the theft of our biodiversity (Brazil 2001).

Yet another example, the *Thammasat Resolution* comprising 45 representatives of indigenous, peasant, non-governmental, academic and governmental organizations from 19 countries, declared —

> We reaffirm our total and frontal opposition to the extension of intellectual property rights to life forms, be it on humans, animals, plants, microorganisms, or their genes, cells and other parts. We are also adamantly against biopiracy and the monopolisation of biodiversity-related knowledge through such IPRs…Our rights are inalienable; they existed long before IPRs regimes were established. As legal, political, economic, social and cultural rights, they are part of peoples' sovereignty and therefore part of human rights…As community/collective rights, they are indivisible and inter-generational; they include farmers' rights and apply to indigenous peoples, peasant and family farmers, fisherfolk and other local communities which derive their livelihoods from biodiversity (Thammasat 1997).

These examples illustrate the solidarity of movements around the globe and the mobilization of resistance agains the global IP regime. While these examples are not exhaustive of the myriad movements, they do provide an insight into what indigenous people around the globe are focusing their energies on. These declarations are more than a cathartic exercise. They are demands. They are the voices of the dispossessed. They stand in opposition to the dominant powers that dispossess them. Indigenous peoples involvement in legal rule-making and litigation should be considered a tool and a focal point for resistance.

Conclusion

It was only through a long process that the Western form of property became today's dominant practice. So, we must not become disheartened by the long process of deconstructing the disparate global IP regime. Instead, we must intend to remove its foundations of power

through concerted critical counter-movements. The racialization of space and the concomitant appropriation of land, culture and peoples by the (neo)colonial powers has dispossessed indigenous land and TKUP through a Eurocentric and racist IP regime that preserves and benefits state and corporate power. As one author notes —

> The very cultural heritage that gives Indigenous peoples their identity, now far more than in the past, is under real or potential assault from those who would gather it up, strip away its honored meanings, convert it to a product, and sell it. Each time that happens the cultural heritage itself dies a little, and with it its people (Greaves 1996, 25).

This movement contesting the dispossession of TKUP and PGRs does not need to be limited to arguments based on equality and inclusion into the global IP regime, but the exact opposite — the position of difference and autonomy from the global IP regime. Whether indigenous people choose to navigate within or outside disparate legal frameworks, the foundation of resistance should take advantage of the global movement against the appropriation of indigenous knowledge and culture. Debra Harry, a Northern Paiute woman from Pyramid Lake, Nevada and Executive Director of the Indigenous Peoples Council on Biocolonialism believes —

> In the long run, it will not be changes to Western law that will truly protect Indigenous knowledge and biodiversity. The only way that all aspects of our cultural heritage will survive is to ensure its continued practice by Indigenous peoples within the distinct and unique life-ways of our peoples. It must retain its communal nature and not be exploited for commercial gain. We must learn from the wisdom of our Elders that our Indigenous knowledge and cultural heritage must be lived and practised, and transmitted from generation to generation within our communities, as we have been doing for millennia (Harry 2011).

We must live and construct the reality we wish for ourselves and our children in the present, and resist the powers that wish to assimilate us or

discipline us into submission. Otherwise, our future in an increasingly fragile world is uncertain.

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