WORK & CULTURE

Congo Coltan: Cellular Communication Connecting to Conflict

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*The Cellphone Project: Demobilizing,
Delinking, Disconnecting the
Commodity Chain*

Discursive formations are never singular. Discourses operate in conflict; they overlap and collude; they do not produce fixed or unified objects. (Lowe 1991:8)

The cellular telephone acts as an appropriate consumer good for the commodity chain framework because the approach attempts to visibilize the places that cell phones disconnect.[1] Global markets help erase the production places and the cultural, social and environmental conditions of global commodities. Cell phones remain disconnected from its multiple production places by being both a global commodity and as a communication device. Cellular communicators create a globalized world of instant place-less communication, calling to and from any place yet joining at being un-grounded. This paper will re-connect to cell phone production places in Congo.[2] I will explore how these hidden places that are intimately connected to global commodity chains become battle grounds of contestations over meanings of place. Often these areas of natural resource wealth become conflict zones by different actors fighting over control of the rich resources. If these places of struggle become embedded within civil war, then the dynamic shifting of alliances over control of extracting natural resources connected to cell phone production provide insight into the binary relationships between formal-informal economies, legitimate-illegitimate resource extraction, (trans-)national-local control, war-peace and trade-trafficking. Zones of conflict experiencing the "natural resource curse" help un-bundle some of these binaries because insurgency uproots political stability, a condition that global market capitalism relies upon and which we often base legitimacy on for natural resource extraction.

The theory that will frame my thesis is that positions of power become re-enforced and legitimized through appropriating global discourses, such as environmentalism and developmentalism.[3] There is a sort of hijacking or

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[1] For literature examining the commodity chain approach, please see Gereffi and Korzeniewicz 1994. For how this analysis may relate to natural resources, please refer to Gellert 2003 and Le Billon 2000.

[2] During the Mobutu regime, the country was known as Zaire. The country is now called the Democratic Republic of Congo, or DRC. In this paper, however, I will call the country "Congo."

[3] I use the terms "environmentalism" and "developmentalism" to describe the discourses of environment/conservation and development/global capitalism, respectively. I am particularly interested in how various groups in Congo espouse these discourses in order to legitimize and justify their performances which go challenged by those adversely affected. For environmentalism, please refer to Ramachandra Guha 2000, especially Chapter 6 on the "Southern Challenge" (Pp. 98-124), and the the "Bibliographic Essay" (Pp. 146-154). For developmentalism, please refer to *The Development Dictionary: A Guide to Knowledge as Power,* edited by Wolfgang Sachs (1992), especially the first three sections. Another seminal text is *The Post-Development Reader,* edited by Rahnema, M. and Bawtree, V. (1997). The part of "developmentalism" that I will focus on is the global neo-liberal structures traveling from North to South.

discourse rupture as environmentalism, developmentalism and neo-liberalism travel to and from "global-ground." The discourses do not flow but rather jump from one major actor to the next, while skipping over many marginalized groups in-between. The circulation of environmentalism and developmentalism among the Global North, the Congolese government, Hutu, Tutsi and other insurgent elites, and African activists involve jagged shifts and re-orientations to match each groups' personal agendas. This theoretical lens will enable viewing how "institutions inscribe particular forms of discourse, simultaneously creating certain possibilities and precluding others, privileging certain actors and marginalizing others" (Brosius 1999:36). The Global North/South power struggle over conservation, sustainable development and neo-liberalism become manifested in a national over local power hierarchy through state appropriation of environmentalism, developmentalism and global capitalism. The power of these discourses, once incorporated by nation-states, upholds state sovereignty over the local or indigenous "other." However, the locals, as the Congo case study will reveal, are also exploiting and contesting global modernity discourses to provide momentum for their own grassroots livelihood struggle.

One production place for cell phones is in the columbite-tantalite mines in the Ituri forests of Kivu in the northeastern part of Congo. Tantalite is the mineral or ore, and tantalum is the metallic element that becomes refined from tantalite. Coltan is only a minor source of tantalum. However, since coltan is the colloquial term used in the media, in this paper I will refer to the precious mineral as coltan from the extraction to consumer phase. Much of the world's coltan supply comes from the forested regions of the Congo along the border with Rwanda. Several reports claim that 80% of the world's coltan reserves are believed to be in Africa, and 80% of those in Congo (Bond & Braeckman 2001).[4] Australia possesses the single largest source of coltan in the world, mostly in two mines owned and operated by the Sons of Gwalia Company in Western Australia (Sons of Gwalia 2004).[5] The United States remains the largest consumer of coltan in the world, accounting for about 40% of the global demand (Essick 2001). Coltan fetches a high market price due to its numerous valuable chemical properties such as a high melting and boiling point, resistance to corrosion, superconductivity, low coefficient of thermal expansion and high coefficient of capacitance (Sons of Gwalia 2004). In 2000, about 6.6 million pounds of tantalum was used throughout the world, with about 60% being used in the electronics industry, such as for cell phones (Essick 2001). The tantalum is a metallic element used to produce tantalum capacitors, a product used to regulate the flow of current in electronic devices, such as cellular phones. About

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[4] However, other sources provide contradictory evidence, such as Kristi Essick who claims that 15% of the world's supply of coltan comes from Africa, with Australia providing 70% of the global supply of coltan (2001).
[5] The two mines in Australia providing the coltan comprise of about 35% of the world's supply (Sons of Gwalia 2004).

35% of tantalum capacitors are used by mobile phone manufacturers (Bendern 2001). Since tantalum capacitors enable the size of the cell phone to be drastically reduced, it contributes to the aesthetic of the phone and thus tied to the production of desire for cell phone consumers. Tantalum capacitors have many other applications however, such as for nuclear processing equipment, superconductor technology and military machines, all of which involve national governments and their military operations. Ceramic capacitors offer possible alternatives, but can not meet the aesthetic demand that tantalum capacitors meet due to its small dimensions (Bendern 2001). More research is being done on alternative technology that could phase out coltan and further reduce the size of the cell phone (Austen 2002). Therefore, the aesthetic of the cell phone, and its attached social status, act as one conduit that keeps the Congo coltan mines open. But the debate I wish to focus on now is not how the production of desires creates the consumer pathways opening up coltan mines, but rather the political economy versus ecology of natural resource wealth versus scarcity.

Natural Resource Wealth Versus Scarcity

Recent academic literature on the "resource wealth curse" suggests the correlation between natural resource *abundance* and civil war (Ross 2003, Collier & Hoeffler 1998, Fearon & Laitin 2002, Fearon 2002). The curse can be summarized as countries with great natural resource wealth often become victims of their own wealth due to people fighting for control of those rich resources. Most "resource curse" scholars, like Michael Ross, and popular magazines focus on how natural resources help fund civil wars and encourage violence. Another manner in which peace-keepers have approached conflict areas rich in natural resources, however, is to explore how to promote peace through natural resources. Natural resources could be viewed as a valuable tool in encouraging enemy armies into a peaceful resolution, through which both parties would benefit. So instead of the war economy accruing greater benefits, a situation could be created where a ceasefire would allow for greater overall gain, or "economic self-interest may contribute to conflict reduction" (Sherman 2003:2). The U.N. report investigating the Congo crisis concludes, "There is a clear link between the continuation of the conflict and the exploitation of natural resources" (U.N. 2002). However, this statement does not delineate between the cause and the effect of natural resources and conflict.

Michael Ross examines the corollary between natural resources and civil war in his "incentive" mechanism for the duration of conflict. He states that "if commanding officers believe that peacetime profits would be greater than wartime profits, it could help induce them to reach a settlement" (2003:15). Thus, he says that resource wealth could facilitate a peace accord when "officers who support a peace agreement subsequently profit from – or attempt to profit from – the resource industry" (2003:16). Although a tentative ceasefire agreement was reached in the summer of 1999 in northeastern Congo, little peace actually

resulted. Even if future peacekeeping forces create a ceasefire condition by orchestrating ceasefire mining and logging concessions, this arrangement would mask the real issues that led to the war in the first place and is definitely not recommended. Ross's other hypothesis relates to the intensity of civil wars, such that "resource wealth tends to decrease the casualty rate during a civil war by causing combatants to cooperate in resource exploitation." This type of cooperative plunder would result in "wartime trade and cooperation in resource exploitation between the two sides" (Ross 2003:18). In Ross' case studies, eight of the nine cases had insurgents intermittently cooperating in exploiting the same resources they fought over. This is also the case for the Congo, as the U.N. points out, "The exploitation has resulted in the further enrichment of individuals and institutions, who are opportunistically making use of the current situation to amass as much wealth as possible" (U.N. 2004).

Natural science, as opposed to the political science models, has mostly narrowed debates within a Neo-Malthusian discourse to examine causal links between natural resources and conflict. This discourse purports that environmental *scarcity*, caused by overpopulation, aggravates socio-cultural and political factions, resulting in inter-state conflict.[6] In short, overpopulation depletes natural resources, leading to conflicts over access to limited resources.[7] Many critics argue against this depoliticized, eco-centric agenda, however. As James Fairhead, a political ecologist focusing on this debate, points out, "the crux of the 'greenwar' position is that governments are failing to concentrate on conservation as a means of defusing conflict" (2001:220). As Homer-Dixon has argued, "if environmental stress is a root cause of conflict, this makes issues of sustainability, environmental protection, and the distribution of wealth and resources central elements of peace building (Homer Dixon, pers. comm. to Robins in Robins & Pye-Smith 1997 cited in Fairhead 2001:220). According to Homer-Dixon then, governments should be investing in sustainable

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[6] These two approaches, political science and natural science, reveal an interesting phenomenon: political scientists focus on natural resource *wealth* as the problem, whereas natural scientists concern themselves with natural resource *scarcity* as the source for conflict. These two viewpoints perpetuate their respective fields: political scientist's analysis is based on nation-states, which need resource wealth to organize a government, whereas natural scientists need environmental degradation for conservation intervention.

[7] First, resource scarcity does not necessarily lead to degradation, as illustrated in Fairhead and Leach's brilliant book *Misreading the African Landscape* (1996). Despite scarce forest resources in Guinea, they convincingly showed that people actually increased forest cover near their villages. However, according to Homer-Dixon, population growth remains the single underlying explanation since increased human densities aggravate resource access, quality and quantity (1994). In Homer-Dixon's and Jessica Blit book *Ecoviolence*, their arguments are constructed such that natural resources are necessarily becoming scarce due to human activity, specifically population growth (1998:6). Homer-Dixon then connects environmental scarcity as the culprit of violence.

development in order to promote peace.[8]   These associations are not only ridiculous but also dangerous since it has the effect of depoliticizing the underlying causes of the conflict. Or, as Fairhead has noted, "Obfuscation of political causes of conflict within depoliticized environmental and neo-Malthusian explanatory frames may impede moves towards resolving conflicts" (Fairhead 2001:220).

The causal relations between natural resources and violence must be re-examined in order to include a political ecology framework. Instead of environmental scarcity igniting conflict, resource allocation, access to valuable resources, including the means to access them, and resource redistribution play significant roles in burgeoning violence. Instead of focusing on resource depletion, attention should instead be placed on the politics of natural resource extraction which transforms the natural resource base.

Kaplan also follows Homer-Dixon's path in prescribing to "greenwar" (1994). Both Kaplin and Homer-Dixon view population growth as the frontline of war. Kaplin examines scarcity, crime, overpopulation, tribalism and disease as causal links to destruction of the planet's social fabric. However, he neglects to examine state and global political economy, as well as local social systems, as possible agents. Homer-Dixon continues to debate that environmental scarcity instigates only inter-state conflicts, separate from the domain of border countries and the global economy (1994). He believes the consequences of environmental scarcity dissolve state power, wherein these weakened states encourage conflict. Therefore, according to Homer-Dixon, it is the lack of state control, not the amplification of state hegemony, which transmits bloodshed. His solution of social and technological ingenuity to deal with environmental scarcity displaces the global political-economy outside possible resolution. Leach and Fairhead, however, stress the importance of how these social and ecological dynamics intersect with the "institutions of the state and its macroeconomic and

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[8] Advocates of environmental security push past Homer-Dixon/Kaplan discourse by placing environmental degradation within a national security context. Steve Lonergan traces the periodic "waves" of this discipline: "The general discussions on the nature of security and the role of environmental degradation as a contributor to insecurity and conflict have been labeled as the 'first wave' of environment and conflict research. Subsequent research attempting to 'prove' a link between environment and conflict was considered to be the 'second wave' (2000:67). Again, the link assumed is human activity leading to resource depletion, giving way to conflict. The central tenant of environmental security, as pointed out by Barnett, is "the contention that environmental *degradation* will lead to violent conflict" (2001:50, added italics). Some authors express concern of "political instability and state collapse as a result of environmental degradation and resource scarcity" (Dalby 2000:84). However, as the Congo case study illustrates, environmental degradation occurred *due to* the political instability. In addition, the state accrues revenue at the expense of environmental degradation, which would provide for enhanced nation-state building rather than state collapse. The effect of broadening national security to include social, political and environmental issues – without changing the nation-state as the referent – is nothing more than legitimizing nationalism through drastic security measures.

environmental polices" (Leach and Fairhead 2000:40). This paper refutes Homer-Dixon and Kaplan's arguments by demonstrating that Congo, its neighbors Rwanda, Uganda and Burundi, and the coltan commodity chain remain interlocked into a trans-border political economy facilitating the extraction of natural resources and continued conflict.

"New Barbarism," defined as people driven to violence by overpopulation and ecological collapse, is criticized by Richards on the grounds that "war is a consequence of political collapse and state recession, not environmental pressure" (1996:124). Richards, who studied the relationship between natural resource wealth and civil war in Sierra Leone, believes that the war in Sierra Leone results from the "intellectual anger of an excluded educated elite" set on a stage of a "drama of social exclusion" and political failures (1996). Both Richards and Fairhead claim that the "greenwar" is glossed over as environmental and apolitical, and void of international political-economy. His critique centers on resource value and wealth, which includes control over valuable resources or the means making them valuable, such as trading routes. Ultimately, high land value advances conflict, *not* environmental scarcity. People fight for control over resources itself or the means to exploit it. Fairhead argues that it is not so much about resource abundance as the "struggles over the means to exploit resources," such as control over labor and capital, as well as "over the means to make resources valuable," such as means of communication and trade routes, political means to access markets, and the markets themselves (2001:222). Conflicts arise from marginalized people confronting their rights to access valuable resources and its revenue streams. In this view, natural resources and the violence over its extraction remain strongly tied to a strong global political-economy network. Therefore, a global coltan commodity chain analysis of all players involved, and the systems and discourses they operate within, is necessary to fully understand the violent situation in Congo. More attention must be focused on the "important cross-boundary patterns in the flows of resources and the politics involved in the dispossession of peoples to facilitate resource extraction" (Dalby 2000:86). As such, international or trans-border resource flows must be incorporated more fully into political ecology. The politics of global environmental change often remain omitted from discussions on environmental security, due to falling prey to the "territorial trap" with environmental change acting only within individual states (Dalby 2000:87). But ecology, and development affecting it, is without political borders. Therefore, it is impossible to discuss the political ecology of coltan in Congo without discussing the global extraction network it is embedded within.

Political History of Resource Extraction in Congo
Access and therefore extraction of the natural resource wealth in Congo have undergone drastic changes from its colonial history to present day according to which political economy network controls the resource rich

territory. The most malevolent power to control Congo's riches began in the late 19th century, when workers for King Leopold II of the Belgians began stripping central Africa of its ivory and rubber. This colonial resource extraction enforced production quotas on the locals, and caused an estimated five to eight million Congolese murders (Harden 2001). Then in the 1960s the U.S. CIA helped overthrow the first democratically elected Congo prime minister, Patrice Lumumba. In 1964 the U.S. put in place Africa's most infamous billionaire dictator Mobutu Sese Seku. From 1965 to 1991, Congo (renamed Zaire by Mobutu) received more than US$1.5 billion in U.S. economic and military aid (Drillbits and Tailings 2001). Despite an atrocious human rights record, Mobutu brought in billions of dollars of U.S. aid and handed over the country's vast mineral wealth to foreign countries, amassing great personal wealth in the process (Lappe 2001). A low level civil war endured in neighboring Rwanda in the 1990s, where the ruling Hutu government fought the Tutsi rebels. Then, in 1994 in Rwanda, Hutu extremists killed more than 500,000 Tutsis and moderate Hutus. This caused a counter-attack, with the Tutsi rebels overthrowing the Hutu government and coming to power. Out of the two million Hutus remaining, one million fled across the border into Congo in fear of Tutsi retribution. The refugees in Congo included Hutu insurgents known as Interahamwe, as well as former Hutu government soldiers. For the Tutsi Rwanda government, this acted as an obvious threat. So, in part to eliminate the Hutu threat, Rwanda in the fall of 1996 sent its army to support the uprising in the Congo led by Laurent Kabilla. According to the World Policy Institute, American Mineral Fields made the first mining deal with victorious Kabilla immediately after Mobutu's overthrow, securing a US$1 billion deal for the mining of cobalt and copper (Hartung & Montague 2001). Then in the summer of 1998, a second civil war erupted that ousted Kabilla, where the Congolese government, Uganda and later Rwanda armed rival factions in the Congo to use them as proxy forces to gain control of the wealthy Ituri region. Ceasefire arrangements were created in July 1999, but little ever amounted to this agreement. After the ceasefire, most foreign troops from the surrounding countries that had supported the rebels and the government withdrew; however, fighting among the rival rebel insurgents, local fighters and remaining Ugandan and Rwandan troops continue (Ngowi 2003). The International Rescue Committee, a New York-based aid agency, has described the Congo war scene as "perhaps worse than any to unfold in Africa in recent decades," with around 2.5 million people killed in eastern Congo alone (Harden 2001). Human Rights Watch claims that at least 10,000 civilians have been killed and 200,000 people have been displaced in northeastern Congo since June 1999 (Essick et. al 2001). The U.S. have contributed to the violence, where out of the US$19.5 million in U.S. arms and training delivered to African armed forces in 1999, US$4.8 million went to nations directly or indirectly involved in the Congo war (Drillbits and Tailings 2001).

The war has subsequently caused the Congolese central government and many multinational mining corporations to lose control of the valuable mines. The elites that have maintained their extraction network now deal with insurgents rather than with national government affiliates who lost control when the political stability lapsed. The current fighting of several insurgent factions backed by various neighboring governments have created a situation with an ever-changing web of alliances attached to the natural resource wealth in the region. Different discourses and networks collide and collude as locals insist the coltan mining offers them the only livable wage, environmentalists scream over the killing of gorillas, human rights activists cry over tragic loss of human life, and multinational mining companies argue over lost profit. These different voices become articulated in different ways, at different times, and in different places from the global to the local Congo scene, with an unfolding dynamic mosaic.

Environmentalism: Avenues of Appropriation
Control of people originates in the institutions of social control already dominating civil society, and are applied to the control of natural resources by and for the state. (Bryant 1997:216)

One voice that I would like to give considerable attention to is that of international conservationists focusing on northeastern Congo. The rhetoric that they support, or "environmentalism," can be explained as the industrialized North exerting their powerful influence over the Global South through green aid and international environmental clauses. The industrialized countries spin a new form of ecological imperialistic governance, or "environmentality," around the Global South in an attempt to capture remaining "global" resources. This then becomes appropriated by the Global South donor recipient as a means to unearned legitimacy. Green aid requires recipients to satisfy the donor countries and international financial institutions with policies that reflect considerations of conservation, irrelevant of how they are implemented and by whom. A battle ensues among the northern donors, the Congolese government, regional elites and local villagers in attempting to re-assert their position of power or challenge the opposition.

The appropriation of global environmentalism and developmentalism by the Mobutu and current regime displaces politics from the domain of "environment" and "development." It is the same process which Ferguson refers to in describing development as an "anti-politics machine" (1994). This same argument, then, can be applied to "conservation" in the Congo. In this way, environmentalism and developmentalism, and the implied global capitalism, can act as an apparatus to displace politics to make way for entrenched state power and control.

The Congolese government re-directs global environmentalism into a nationalistic conduit, promulgated by overt and structural violence, for personal profit. Instead of the international environmental and development "institution" re-shaping the lives of the Congolese government and its citizens, the government regime replaces that struggle within its own national fight for power. Goldman in his analysis of "'Environmentalism' World Bank-style" comments that "newly imported concepts such as conservation, biodiversity, sustainable development, and watershed management have material effects when they become translated and concretized into new regulatory regimes, state agencies, and large-scale capital investments" (2000:3). In this manner, environmentalism becomes appropriated by the institution with the authority to implement the green policies. For each institution, the discourse becomes re-configured into a knowledge that upholds the new possessor.

The "authoritative green knowledge" under the scientific-technical standards of multilateral aid conditionalities creates the drive for Congo to position itself within this rich discourse (Goldman 2000:4-5). Although Goldman refers to World Bank green-knowledge generation, the "green" development process inherent in the knowledge acquisition by the World Bank and other lending aid agencies also generates a green image in its beneficiaries. This, in turn, encourages a state to greenwash its political-economic policies, in hopes of projecting a green government image. International conservation organizations transform "green" into money, granting states substantial financial assets, and thus augment state hegemony.

Conservation and Coltan in Congo

Global environmentalists claimed that "bloody tantalum" is killing the mountain gorillas that Diane Fossey made internationally famous. The coltan mines are located in the vicinity of two nature protected areas, Kahuzi-Biega National Park and Okapi Wildlife Reserve, both UNESCO World Heritage Sites, which provide a sanctuary for the gorillas at the expense of the indigenous pygmies that were forcefully relocated to create the national park. Both were created in cooperation with international conservation organizations *prior* to fighting in the region in the 1980s. However, this was done when the country, then named Zaire, was under the authoritarian control of Mobutu. UNESCO, with support from the U.N. Foundation, has promised almost US$3 million over four years to five World Heritage Sites in Congo, including the Kahuzi-Biega and Okapi (Plumptre et al. 2000). My argument is that conservation projects provide an apolitical means to re-territorialize land rich in natural resources to not only promote biodiversity conservation, but also provide justification for heightened political territorial control (see Bryant 1996, Peluso 1993). This can especially be of concern if the national government uses its military to achieve such goals. Nancy Peluso has shown how a militarization of the resource conservation process employs militaristic management techniques suitable to force

communities to comply with state agendas supported by conservation rhetoric, i.e., "coercive conservation" (1993:199).

Since the fighting began, gorillas have been killed as bush meat to feed the migrant miners, rebel troops and Hutu refugees that have ambushed national park guards in order to settle within the protected area along the Rwanda border. The wildlife, especially the Eastern lowland gorilla (Grauer's gorilla or *Gorilla beringei)* and elephants, are being killed to provide bushmeat for hungry troops and refugees within the vicinity of the park. According to conservationists, the wildlife is especially vulnerable because military leaders have disarmed the park guards, leaving them unable to patrol the park borders (Vogel 2000). The U.N. report claims that in the Kahuzi-Biega National Park, only two out of 350 elephant families remained in 2000 (U.N. 2002). David Sheppard, IUCN's Head of Programme on Protected Areas, offered a statement regarding the Congo situation: "Mining, together with the presence of so many people looking for food, is severely impacting on the ecology of these sites, and is in flagrant violation of World Heritage principles" (IUCN 2001). One article tells a story about the national park guards heroic efforts to try to keep patrolling the park despite being shot at, their family members killed, their lodgings and offices burned down, and living in the forest eating only plants (Schmidt 1999). One Japanese scientist who has regular contact with the area has reported that more than half of the 240 gorillas known in one study section have been killed by poachers (Vogel 2000). In the lowland areas of the Kahuzi-Biega National Park the gorilla population has dropped from 8,000 to just 1,000 individuals during the span of the five years of the war thus far (Raghavan 2003).[9] The degradation of the national parks also highlight the inherent problem of creating protected areas closed off from human populations. When political stability and the funds to create the static park boundaries fail, then the rich resources previously guarded become a treasure waiting to be over-exploited. People-less parks had to kick out the indigenous pygmies originally living within them who protected the resources for their own use; now they are being savaged by everyone except the indigenous communities.

The Congo war simultaneously protects the coltan from further entrenchment of global market networks, yet kills gorillas. Other case studies have shown that war is usually bad for wildlife and the logging industry, but good for forest cover and limiting resource extraction (Draulans and Krunkelsven 2002). The national park actually creates a hide-out for refugees and insurgents, where although the forest acts as a protective cover from enemies, the gorilla becomes threatened as a source of food. So the conservation areas switched from a gorilla to a human refuge. To protect the gorillas from poachers several conservation organizations have negotiated with rebels who intermittently control eastern Congo to re-arm the park guards. Despite having

[9] One scientist, however, stressed that these alarmist reports may not be entirely accurate, as cautioned by Michael Worobey, a graduate student at Oxford University (Vogel 2000).

to go against military leaders mandate to un-arm park guards and collaborate with rebel factions, the International Gorilla Conservation Program in Nairobi, Kenya is working with the German development agency Deutsche Gesellschaft fur Technische Zusammenarbeit to fund the guards and make sure they have weapons to make the parks a haven for gorillas again (Vogel 2000). These same sentiments are expressed by two scientists studying the impact of war on Congo's forests, who suggest an international "green force" to protect the biodiversity, where "such a force would need strong fighting capabilities" (Draulans and Krunkelsven 2002). Sue Savage-Rumbaugh of Georgia State University even claims that the best deterrent to poachers is the presence of researchers, such as herself; she soon realized, however, that her research station had been looted (Vogel 2000). Despite the apparent disregard for the national park, rebel leader Jean-Pierre Bemba has expressed interest and support for conservation projects and invited researchers back to his territory his troops control (Vogel 2000). Although the researchers do not want to collaborate with rebel groups, the opportunity to continue their dedicated gorilla research trumps these concerns. In addition, the Front for the Liberation of Congo (FLC), which is supported by the Ugandan government and controls most of the northeast Congo, has declared that it "favors a sustainable exploitation of natural resources and a politics of systematic reforestation of destroyed places" (Draulans and Krunkelsven 2002). Environmentalism, then, becomes expressed on two different levels: one by the rebel groups who espouse a military-conservation allegiance in order to access funds and gain increased legitimacy for their green militia, and another on the part of the researchers for their apolitical conservation. The international apolitical environmentalism often espoused by dedicated international conservation researchers becomes framed as such: "The civil war might take several more years…we cannot just sit and wait, because bonobos might not have that long" (Vogel 2000). The rebels appropriate this apolitical rhetoric to gain international legitimacy, national justification for their continued territorial control, and green funds to help support their insurgency. The (re-)appropriation of global discourses becomes re-contextualized based on the political aspirations of the groups. The traveling of discourses from global origins to local places causes environmentalism to become re-shaped into these new co-forms.

Global-to-Ground Political Economies

Discourses intersect in Congo to produce new forms appropriated by different groups to achieve diverse political agendas. The Congo coltan mines act as a node of intersection for these different discourses. Robbins, although referring to agro-pastoralism in India, explains the community as a "micropolitical economy where division and unity move across a constantly changing political map of social process. Similarity and difference are negotiated, hijacked, and reformed along the fault lines and schisms of local

power" (2000:196). In referring to the elite hegemony of local landholders, Robbins surmises that "although the power of these local political institutions is somewhat limited, they do control the flow of important resources into the village environment" (2000:209). In the case of the Congo elites, they both support and subvert national military and economic tactics by channeling natural resources *out* of the village and into neighboring countries and beyond. The outcome of this re-configuration of power as a result of a re-distribution and re-territorialization of resources highlights the divergent agendas and desires circulating through the region.

Donald Moore, in looking at villagization policy implemented in Zimbabwe, outlines how "micro-politics through which global development discourses are refracted, reworked, and sometimes subverted in particular localities" (1998:655). The Congolese regime must constantly re-assert its power through continual clashes with insurgents in order to maintain its hegemony. In this way we must see "hegemony not as a finished and monolithic ideological formation but as a problematic, contested, political *process* of domination and struggle" (Roseberry 1996:77 cited in Moore 1998:659, emphasis in original). The local people, regional insurgents and Congolese government constantly contest power, access to territory and control over trade. Gupta (1995) examines how boundaries between 'state' and 'society' distort as the state becomes re-imagined at the local level. The "coproduction of economic possibilities through the joint actions of people, their networks, and external intervention" holds true for the struggle among the different regional and transnational actors selling off natural resources to multinational mineral corporations (Bebbington 2000:512). Thus, the conservation and development interventions by the Congolese government and international organizations as a result of the ceasefire have contributed to the restructuring of local power relations and patterns of access to resources. However, the important question to focus on is who is co-producing the new socio-political identities, and how is this affecting natural resource access?

Patron-Client Networks: Insurgent/National Economies Emerge/Diverge

The civil war in Congo has created a situation where the proceeds of trade go more into the pockets of rebel elites than into the national Congolese economy. However, the coltan still proceeds into the global market, as evidenced from the continual selling of coltan to multinational corporations for cell phone manufacturing. An explanation for such cooperation between multinationals such as Vishay and rebel groups in the Congo is from hyper-demand for this precious ore. According to one article, in mid-2000, a coltan shortage created an opening for outside suppliers in a market usually governed by long-term agreements between mines and the companies involved in the coltan commodity chain (Fyffe 2001). Glyndwr Smith, senior VP of market intelligence at Vishay, the largest U.S. and European manufacturer of capacitors, believes that "demand was so strong I'm not sure the mines could have ramped

up quickly enough, so the processors went to the open market…I have to assume that is where the illegal ore was being offered" (Fyffe 2001). The coltan commodity chain remains shrouded in confusion, partly because coltan is not traded in a central market. The trading of coltan, unlike other precious minerals, enters a "spot market" where dealers around the world establish prices on a transaction-by-transaction basis (Hunziker 2002). Speculators are free to enter the market and capture free-flowing coltan in a complex supply chain with no central market. This market structure allow for supply to be horded in order to drive up prices even higher. The escalated price for coltan caught the attention of rebel groups in the Congo who saw coltan as an easy source of untraceable income.

Once the local miners extract the ore, local traders collect it, who then sell the coltan to larger regional traders, often located within Rwanda and Uganda. According to Judy Wickens, secretary general of the Tantalum-Niobium International Study Center (TIC) in Belgium, it is difficult to trace how it gets to the regional traders because five or six intermediaries can be involved before it reaches the larger regional traders (Essick et al 2001). According to the UN, no less than twenty international mineral trading companies import minerals from the Congo via Rwanda (Essick et. al. 2001).

National, regional and local traders have lost and gained power during the civil war to create the current war economy of coltan. Cashing in on coltan has enabled insurgent business elites to supersede enemies in order to profit from the chaos and lack of rule of law in the cross-border region. The U.N. report stressed how different factions colluded over profits: "Because of its lucrative nature the war has created a 'win-win' situation for all belligerents. Adversaries and enemies are at times partners in business, get weapons from the same dealers and use the same intermediaries. Business has superseded security concerns" (2002). During the confusion and political instability the multinational, state, regional and local elites have brought their business into the insurgent economy, thus becoming further entrenched into the informal war economy. A contradictory logic unfolds, then, with political coziness between battlefield enemies in order to further their own personal benefits. The incumbency advantage, or utilizing rents to strengthen patronage networks, espouses Congo's natural resource extraction economy for its frontier areas.

The civil war in Congo appears to have created conditions where more marginalized sections of Congolese society are able to access resources and integrate them into a peripheral insurgent economy. Le Billon outlines a similar process in Cambodia where the marginalized lose economic maneuverability during the "political ecology of transition" (2000:801-802). He states, "The illegal character of logging shaped this ordering and reduced the share of profits for many of the less powerful groups, as people in positions of power – high ranking officials and military commanders – were able to extract large benefits for turning a blind eye, protecting, or even organizing these activities" (2000:791-

792). For Congo, the political ecology of ceasefires elucidate this transition from "anarchy" to "order" and how this relates to a corresponding shift from marginal participation to their exclusion in natural resource access. However, after the fighting has resumed during the second war outbreak, it appears that more local insurgent economies can thrive again at the expense of stability and national government and multinational profit.

Some factions within the Congolese government may not be entirely interested in formalizing natural resource revenue to feed into the national economy because this would diminish the ability of economic elites to give and withhold patronage. William Reno coined the term "shadow state" in referring to corruption and warlords in Sierra Leone to describe the situation where "state officials choose to exercise political control through market channels, rather than pursuing politically risky and materially costly projects of building effective state institutions" (2000:44). In this instance, Congo represents a "shadow state," in that local and regional elites are re-orienting the local coltan economy through their networks in order to siphon off resource rents. These actions are only made possible by the disintegration of political stability in the area and the loosening of Congolese government control.

Formal or official implies (trans-)national elite trade relations, whereas informal economy implies local or regional insurgent trading circles that exclude the state. What is the common denominator, then, between the relationships formal-informal, national-local, and trade-trafficking? The boundary between legal/illegal and national/local natural resources breaks down further with increasing opportunities for local elites to maneuver taxes into their own network, separate from the national domain, due to civil war and thus political instability. The main economic incentive for the ceasefires is for the Congolese government to access desperately needed foreign exchange to continue to uphold the regime; some of the revenue flows into the national economy, but much also goes into elite pockets of both government officials and local/regional warlords. Therefore tension exists between local elite autonomy and national government authority along the northeastern Congo border, but which becomes loosened through profit sharing. This divide between local and national, ethnic insurgent and Congolese government, Hutu and Tutsi elites, become messy due to networks blurring during war.

So, friction exists between a regional, insurgent, unregulated and fluxing trading scheme and a centralized, regulated national political economy. Kemet promises "that they do not or will not illegally mine any tantalum material from the Congolese mines" (Kemet 2004). This implies that the national mines run by the Congolese regime act as a legitimate form of resource extraction, tied to multinational mining corporation contracts. Coltan mines opened up by insurgents, however, are considered illegitimate and off-limits to multinationals seeking legitimate profits. But the current war makes it difficult to discern illegitimate from legitimate mining operations. According to one news report,

the author claims, "It is not unusual for coltan mines to change hands many times, depending on what group happens to be in control at the time. From there, the supply chain gets blurry insofar as business relationships among suppliers and processors of coltan and, ultimately, mobile-phone makers" (Silva 2003). The insurgent economy that has taken hold in the region flourishes from the lingering trans-national resource networks in place from Mobutu's regime – an appendage from a politically stable, although authoritarian, time. This fusion of global commodity chain networks with warlords creates the scene today in northeastern Congo.

Political Economy of War
The model of a zone of peace is premised on a zone of turmoil outside. (Dalby 2000:89)

War and peace, like political economy allegiances, remain fluid, contested and unclear. Just as formal and informal economies remain difficult to separate, war and peace also remain messy categories and false binaries. David Keen, who has greatly contributed to the post-structuralist view on the political economy of war, claims that the "distinction between war and peace may be hazy, and the two may not necessarily be opposites. War can involve cooperation between 'sides' at the expense of civilians; peace can see adversaries striking deals that institutionalize violence, corruption and exploitation" (1998:11). Therefore, war is not just a breakdown or interruption to the process of development, or a "development malaise," but rather an alternative system of profit and clientism. Catherine Brown articulates the relationship between peace and violence by stating, "Conflict cannot be separated from the economic and political processes of 'peace' that generates the violence" (1999:236). In other words, violence itself is a product of those inequalities. A fine line defines the relationship between formal and informal economies, or "war economies" and "economies of peace." In addition, "Violence stems from existing power relations…the underlying causes of conflict lie in these unequal power relations and the resulting violence reinforces them" (Brown 1999:236). More research needs to be conducted, therefore, into the origins of violence to better understand how to create a peaceful scenario. Only then can development and conservation projects be successful.

The current war economy, according to Reno, acts as an "instrument of enterprise and violence as a mode of accumulation" (2000:57). The privatization and institutionalization of violence acts as an exercise of power which allows elites to access resources through relations. Thus, "economic violence" is violence which accrues profit, a system in which "elites try to privatize conflict by exploiting the civilian economy" (Keen 1998:24-5). And this act of privatizing violence becomes especially prevalent in countries without a strong state capacity in preventing elites from abusing violence for personal profit. As David Keen has noted, "part of the function of war may be that it offers a more promising environment for the pursuit of aims that are also prominent in

peacetime…keeping a war going may assist in the achievement of these aims, and prolonging a war may be a higher priority than winning it" (2001:2).[10]   In short, the material benefits of violence may outweigh those of peace. The United Nations (U.N.) became alerted to the profitable violence over coltan in Congo and wrote a report to attempt to aid the peace process.

The U.N. Report and the Displacing Blame Game: From Legitimate to Illegitimate Coltan

In October 2002 the United Nations released a report that investigated allegations that Rwandan, Ugandan and Burundian rebels had looted and smuggled thousands of tons of coltan from the Congo into their countries to export to the global market and concomitantly fund the Congo civil war. The report states that beginning in 1998, the Rwandan Patriotic Army invaded Ituri and stole about 1,000 to 1,500 tons of coltan (U.N. 2002). The accusations gain support when the coltan export data for the surrounding countries is examined. Uganda and Rwanda dramatically increased the export of coltan following their occupation of northeastern Congo. For example, Uganda reported 2.5 tons of coltan exports a year before the conflict broke out in 1997. In 1999, the volume expanded to almost 70 tons (Essick et. al 2001). The U.N. report claims the Rwandan army made at least US$250 million in an eighteen month period by selling coltan extracted by companies such as Rwanda Metals and Grands Lacs Metals (U.N. 2002). The Rwanda Metals corporation works in conjunction with the Rwanda army to export at least 100 tons of coltan per month, averaging about US$20 million per month simply by selling the coltan those intermediaries buy from the small dealers (Fyffe 2001). The report equally blames the Ugandan army and its rebel allies for profiting from illegally mining coltan (U.N. 2002). These reports all point towards various patron-client networks re-orienting after the collapse of state stability due to the onset of civil war. The local, regional and multinational networks collaborated together to create exclusive war profits, at the expense of the Congo state losing some control over coltan mines. Apparently, the lack of official state involvement creates an illegitimate natural resource sector, irregardless of the legitimacy of the Congolese government and their allies.

Mining was initially controlled by the state-owned Gecamines, which had huge joint projects with multinationals. Gecamines once generated more than half of the nation's foreign exchange ("Current Status of Mining…" 2000). In 1999, after the civil war began to disrupt corporate profits and the price for coltan skyrocketed, multinational companies, with aid from the World Bank, introduced a revised mining policy to make the Congo more "investable;" in a word, privatization ("Current Status of Mining…" 2000). Their plans involved making Gecamines service the multinationals through its connections, such that

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[10] See also Michael Ross 2003 for his hypothesis on the relationship between civil war and natural resource wealth.

"the state should not be a mining operator but a regulator ("Current Status of Mining..." 2000). Many meetings took place in 2000 to try to implement the joint ventures between Gecamines and multinational mining corporations, such as America Mineral Fields and De Beers. However, their plans remain blocked since northeastern Congo is controlled by numerous insurgents. The ethnic insurgents now controlling the mines are making the potential corporate profits shrink. In the words of one economic analyst, "the presence of the Tutsis and Hutus in Congolese territory will remain a danger to political stability of the DRC" ("Current Status of Mining..." 2000). Furthermore, the article suggests, "Whatever political solution is proposed and implemented, the country's mining sector needs assistance and the only international organization that can prove it is the World Bank. With the bank's help, the government should first clean up the mind 'cadastre' and assist Gecamines and MIBA in finding new private partners" ("Current Status of Mining..." 2000). This business-first approach also frames the impact of war on mining in terms of profits lost: "The impact of war of aggression, led against the DRC by the coalition of Rwanda, Uganda, and Burundi since August 1998, has been estimated at $4.772 billion over a period of fifteen months for the mining sector alone" ("Current Status of Mining..." 2000). Clearly, the multinational mining sector wants to work with the Congolese national government, is not overly concerned by the death toll, nor cares about the environmental damage caused.

Despite the multinational mining corporations apparent disregard for anything beyond profits, the U.N. accusations that "cellular coltan" was supporting the Congo war applied pressure to numerous multinational corporations involved in the coltan commodity chain. Blame became displaced from phone companies, such as Motorola, to tantalum capacity manufacturers such as Kemet, to coltan-buyers, particularly Cabot and H.C. Stark. Outi Mikkonen, communications director for environmental affairs at Nokia asked their suppliers if they have used tantalum from the Congo, and insists, "All you can do is ask, and if they say no, we believe it" (Essick et al 2001). Dick Rosen, the CEO of AVX, a tantalum capacitor manufacturer in South Carolina, says, "I'm not in favor of killing gorillas...we don't have an idea where it comes from. There's no way to tell. I don't know how to control it" (Essick et. al. 2001). A&M Minerals and Metals, a UK-based trading company, buys up to three tons of coltan a month from neighboring Uganda. The managing director, James McCombie, is less sure of the company's coltan sources: "I couldn't tell you for 100% that this mineral from Uganda didn't come from the Congo. It could have been smuggled across the border" (Essick et al. 2001). Brussels-based Sogem has only vague assurance of their legitimate sales and admits that they are not 100% sure of their sources. "How can you be 100% sure of anything in life," the company asks (Essick et al. 2001).

The U.N. report accused H.C. Starck, the world's largest supplier of tantalum powder, of doing business with an ex-arms-dealer named Aziza

Kalsum Gulamali, who has established a profitable trade in illegally mined Congo coltan with the blessing of the Rwandan regime (U.N. 2002). H.C. Starck, a branch of the German Bayer AG, denied these U.N. accusations: "H.C. Starck has never dealt with Aziza Kulsura Gulamali, who is alleged to be involved in illegal trading, and only purchases raw materials from established trading companies that have worked in various African countries for a long time and have headquarters in Europe or the United States" (H.C. Stark 2003). This rebuttal, however, again questions what is deemed legitimate? If a company has its roots deep in mining African minerals, and head offices in the industrialized West, does that make it legitimate? Most multinational mining corporations began their business in the Congo region during the Mobutu regime, which was notorious for its corruption. The multinationals, such as H.C. Starck, contested the U.N. allegations, and in April 2003 the U.N. released another report stating, "The (U.N.) Panel can no longer uphold the allegations made n the Report of October 2002 against H.C. Starck" (H.C. Starck 2003). H.C. Starck also denied any cooperation with Eagle Wings, the company that deals with insurgents when buying coltan (H.C. Starck 2003). Despite H.C. Starck's and other multinationals' indignant comments, experts still believe that in 2000 15% of the tantalum that was being used came from Africa, and of that 15%, about 5% could have originated from these illegal mines (Fyffe 2001).

Although H.C. Starck is apparently not supporting the coltan conflict, their website claims that they will financially support the Diane Fossey Gorilla Fund since the Kahuzie-Biega National Park was badly damaged during the war (H.C. Starck 2003). This rhetoric matches Kemet Electronic's response to U.N. accusations of illegal buying of coltan from the Congo, where they promise to "avoid the use of tantalum ore coming from mines in environmentally protected areas of the Democratic Republic of Congo" (Kemet 2004). Motorola has said that the company "deplores the activities alleged against illegal miners in the environmentally protected region of the Congo." In addition, they also "fully support the efforts of relevant authorities to protect regions where the environment or wildlife is threatened" (Silva 2001). In these statements, there is no mention of concern over human rights abuses or local miners' rights. The companies only espouse environmentalism in order to appeal to global conservationists who apparently triggered much of the international uproar over the Congo coltan conflict in 1999 after the beginning of the second Congo civil war because of increased gorilla poaching. The companies attempt to repair their tainted image by promising to protect national parks, save gorillas and proceed with sustainable development strategies.

The U.N. report proposes an all-out embargo on the import and export of coltan from or to Burundi, Rwanda and Uganda "until those countries' involvement in the exploitation of the natural resources of the Democratic Republic of the Congo is made clear and declared so by the Security Council" (U.N. 2002). However, companies argue, if there was an all-out embargo, this

would strike against both illegitimate as well as legitimate businesses. But it remains to be seen what exactly delineates a legitimate operation from an illegitimate one. The local people trying to carve out a coltan livelihood could be hurt the most, since the coltan mines provide the only source of income in that region during the civil war.

Cellular Shifts Dampen Local Voices

For Harden, the most contradictory twist of the coltan story is just how egalitarian coltan mining is in the Congo (2001). Almost anyone can mine if they have a shovel and physical strength. In addition, the coltan mining has funneled hundreds of millions of dollars into the regional economy. Although much of the profits become siphoned off by warlords and economic elites controlling the coltan trade, and little money becomes re-invested into development programs in the area, some money fits into the pockets of local villagers. However, although many local villagers mine coltan in the area, it is not a safe environment for them. Harden describes one man's story about the hardships and human rights abuses involved in mining: "In the morning, when you get up, the Ugandans hand you a pack of cigarettes and they give you two bottles of beer. In the evening, when you finish digging, you have to pay them back with coltan. It was very expensive. One bottle of beer cost me two spoons of coltan (about $8) and cigarettes were one spoon. If you refuse to pay or if you don't have coltan, they beat you and threaten to shoot you" (Harden 2001). Most miners apparently despise this work, but have few other options to eat. One 16-year old boy said, "If I had another job I would not come here. But there are no other jobs. When this mine closes, I will go and find another one" (Harden 2001). Others claim different problems: "There is also the problem of armed bandits who steal our goods, as well as the danger of landslides and collapsing mines" (Essick et. al. 2001). Local people are in such positions because the local economy has collapsed since the civil war began. Local teachers and young male pupils have left their classrooms to mine coltan. School girls have lined up as prostitutes to service the male miners (Harden 2001). As many as 30% of school children in the northeastern Congo have left school to dig for coltan (Essick et. al. 2001). Reports claim that villages have been burned down, civilians have been shot and relocated away from mines and rebels have tortured and raped villagers (Fyffe 2001). In one town, violence erupted as part of a reprisal for attacks by local militia groups on convoys of Uganda-bound trucks stealing coltan the locals have mined (Fyfee 2001). Rebel groups often force locals and prisoners of war to mine, and become involved in the prostitution scene that has directly led to the spread of HIV and STDs (Harden 2001). In addition, the mines are not safe for miners, where children place explosives in cracks in rock to open new mine shafts, with just a few minutes to escape before detonation (Lovgren et al. 2001).

In order to open up a coltan mine, workers dig huge holes in stream beds (Galt 2003).[11] Then they strip bark off eko trees to make a trough where they can shovel the mud into (Harden 2001). Environmentalists argue that the eko tree is now becoming threatened as a result of this wide-spread practice in the forests. Once these initial steps have been completed, miners dig for many days in waist high muddy water waiting for the coltan to settle to the bottom of the trough. A strong, healthy miner can produce up to a kilogram of coltan each day, which could have been up to $80 (Galt 2003). However, with the recent decline in demand for coltan, the profits have correspondingly shrunk. For example, in the spring of 2001, the price of coltan per kilogram plummeted from $80 to $8. This situation remains the financial reality today, with miners having to work several days to produce enough coltan to just pay for meals (Harden 2001).

Aloys Tegera, who directs the Pole Institute, an NGO doing social research in eastern Congo, argues: "Coltan fuels the war; nobody can deny that. That is why we maybe will never get peace. But civilians, especially those who are organized, also are getting some money from this (Harden 2001). Some of the local villagers and NGOs in Congo contest the U.N.'s and other foreign interventions' simple solutions. Tegera feels that while millions go hungry in the Congo and coltan is helping to feed some of them, an embargo is gathering momentum among some organizations that are more worried about public-relations of killing gorillas than with killing humans (Harden 2001). Tegera retorts: "Of course, the Rwandans are pillaging us. But they are not the first to do it and they are not worse than the others. King Leopold did it. The Belgians did it. Mobutu and the Americans did it. The most sorrowful thing I have to live with is that we are incapable of coming up with an elite that can run things with Congolese interests in mind" (Harden 2001). Terese Hart, an American botanist who spearheaded the creation of Okapi Nature Reserve, has this to say about simple supposed solutions from outsiders: "The world wants to intervene from a distance and pull the strings on the puppet. The problem is that the strings are not connected to anything. When outsiders struggle to find solutions for Congo, they often assume there is some kind of government. There is no government. There is nothing. (Harden 2001). One company run by Edouard Mwangachuchu, a Congolese Tutsi, and his American partner, Robert Sussman, see the story differently: "We are proud of what we are doing in Congo. We want the world to understand that if it's done right, coltan can be good for this country" (Hardin 2001). Mwangachuchu adds, "We don't understand why they are doing this. The Congolese have a right to make business in their own country" (Hardin 2001). The local villagers' rights to mine the coltan as a livelihood source become invisiblized by the environmentalists, U.N., multinationals and rebel groups. An alternative discourse that could perhaps lend more support to local livelihoods is

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[11] Another method, although less common for low-scale local coltan mining, is to use dynamite to open up mine shafts, as described above.

one that somehow takes into account human, environmental and developmental rights for local villagers; i.e., social-environmental justice.

Human-Environment-Development Rights Nexus

Human and environmental activists recognize that "there can be no environmental protection or sustainable development without social and political justice for the people" (Smith 1994a:8). In this way, environmentalism and developmentalism becomes understood primarily as a struggle for democracy (see Guha 2000:123). Suliman Baldo, a senior researcher in the African division at Human Rights Watch, a New York-based NGO, claims "There is direct link between human rights abuses and the exploitation of resources in areas in the DRC occupied by Rwanda and Uganda" (Essick et. al. 2001).

Therefore a need exists to strengthen international protection for the rights to freedom of expression and public participation in solving environmental problems. Clearly, the foundation for human rights must be constructed first before environmental justice receives proper attention.

The 1989 Convention on the Indigenous and Tribal Peoples in Independent Countries (No. 169) of the International Labor Organization (ILO) explicitly guarantees the right of ethnic minority peoples to full representation in political, cultural or economic discussions that might affect their environment (Smith 1994a:9). It specifically safeguards (Article 15.1) the rights of people over the natural resources on their lands: "These rights include the right of these people to participate in the use, management and conservation of these resources" (Smith 1994b:103). The Special Rapporteur of the UN Sub-Commission on Prevention of Discrimination and Protection of Minorities was asked by a resolution in 1990 to investigate the link between "the preservation of the environment and the promotion of human rights" (Smith 1994a:9). Noting the special problems of violent environments, the Special Rapporteur, Mrs. Fatma Ksentini wrote:

> Human rights violations in their turn damage the environment. This is true of the right of peoples to self-determination and their right to dispose of their wealth and natural resources, the right to development, to participation, to work and to information, the right of peaceful assembly, freedom of association and freedom of expression" (*Human Rights and the Environment* 1993:38 cited in Smith 1994a:9).

At the Earth Summit in Rio de Janeiro in June 1992, agreements reached a program of environmental, human and sustainable development rights, with the Rio Declaration on Environment and Development and Agenda 21 providing a UN blueprint for "the rights of all citizens to freedom of expression, access to

information and public participation in all environmental and political affairs" (Smith 1994a:10-11). Although a semblance of stability needs to be maintained in order for these international agreements to stick, a balance could be achieved among limited state power, political stability, local determination over their livelihoods and environmental protection.

Conclusion

Thus the scene unfolds: the environmentalists are engaged in re-arming national park guards to protect the gorillas, the UN sends in peace-keeping troops and administers the UNESCO site, human rights activists remain concerned about the forced slave and child labor to mine the coltan, the rebels use the coltan as a source of funding for their struggle, locals mine the coltan to try to make a living, tantalum capacitor manufacturers and buyers invest in the coltan for profit, and cellular phone users need the Congo coltan to make cellular connections. As the cell phone industry surges forth, the battle for control over this valuable natural resource creates new conditions for struggles and meanings. These circumstances of civil war within a landscape of rich natural resources span and un-bundle the formal-informal economies, local-national-transnational networks and peace-violence dichotomies.

The coltan Congo case study clearly illustrates that the political ecology and economy interactions must be evaluated within a trans-national network framework in order to understand how coltan becomes imbedded within the global commodity chain. The discourses that travel along the global chain become appropriated by different groups in order to support their position of power. When the researcher attempts to dissect the discourses pathways, it is more clear who is influencing what and how. Environmentalism and developmentalism become re-configured from the Global North down to the local Congolese villagers, but many voices get dampened out in the process. The information about Congo coltan seems to be over-emphasizing conservation, and less concerned about human rights and local livelihoods. A sustainable solution must acknowledge local rights at the environmental-development-human rights. However, this would not only challenge state power, but also the meaning of "legitimate" natural resource extraction.

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