

JEFFREY W. MANTZ

Improvisational economies: Coltan production in the eastern Congo

This paper examines the political economy of violence in the Democratic Republic of the Congo, a landscape marked by genocidal campaigns where residents are raped and robbed of cattle and crops, and the extent to which that terror has been abetted by the global market for columbite-tantalite, or coltan. Coltan is a dense silicate ideal for digital technologies, and an estimated 80% of the world's reserves lie in the eastern region of the Congo, where the profitability of its mining to local warlords and the frenetic pace of digital speculation have made both agricultural production and pastoralism untenable. As a result, Congolese have had constantly to improvise production systems in order to survive. This improvisation, easy to gloss over as a survival strategy or adaptation, is in fact performed by creative agents who forge elaborately devised artisanal production systems, at times dangerously against the regimes of local warlords, to meet the insatiable global demand for digital products. Coltan is thus a conductor in a dual sense: of digital capacitors for cell phones or PlayStations, but also of the broader social and political economic processes that underlie the global production of knowledge. Indeed, in both a material and symbolic sense, this ore is a veritable source of information production in the digital age. As such, coltan holds importance for understanding the conflicting and diffuse global role of the digital age, as a source hope and creativity on the one hand; and as an instrument of terror, regimentation, and routinisation on the other.

Key words Democratic Republic of the Congo, mining, political economy, violence

It was in the very remote eastern Congolese town of Minova that we¹ met Mbeni,² a smooth-spoken 21 year-old who had recently retired from several tours of military service. In 1996, at the age of 11 he was conscripted into Laurent Kabila's army and became part of the famous military incursion that a year later would traverse the Congo³ (a distance about the size of the United States east of the Mississippi River but with

- 1 This research is the product of an ongoing collaborative project undertaken with James H. Smith, Department of Anthropology, University of California, Davis, and funded by the National Science Foundation. While use of the first person plural indicates the cooperative nature of data collection, all errors and omissions in this article are exclusively my own, and should not be in any way attributed to Professor Smith's findings, results or analyses.
- 2 Geographic names are real, as are names of public figures; but all proper names of informants are pseudonyms. Minova here is a village in Territoire Kalahe, Kivu-Sud Province, in the easternmost region of the DRC, directly across Lake Kivu from Rwanda.
- 3 I use the terms Congo and DRC interchangeably to refer to the Democratic Republic of the Congo. Other terms that are sometimes used to refer to this territory include Congo-Kinshasa and the Belgian Congo (as opposed to the Congo-Brazzaville or the French Congo, which refer to the DRC's northern neighbour, the Republic of Congo). The DRC was called Zaire under the 32-year dictatorship of Mobutu Sese Seko.

only a few hundred miles of roads and negligible infrastructure) and oust Africa's most infamous dictator, Mobutu Sese Seko.⁴ The conflict did not end there. Mobutu had given refuge of the *interahamwe* (the leadership of the 1994 Rwandan genocide⁵), who have since terrorised Congolese Tutsis⁶ or suspected sympathizers. And his ouster created a political vacuum that literally sucked dozens of different interests into the region, notably enclaves of Rwandan-backed Tutsi insurgents⁷ who had committed similarly horrific reprisals. All of this agitated what has come to be known as Africa's First World War, a protracted affair directly or indirectly involving at least nine African nations.⁸ Mbeni had participated in one of the most atrocious conflicts of the 20th century; one that to date has robbed the Congo of at least 5.4 million lives (Polgreen 2008).

We had no idea to what extent as a child soldier Mbeni had engaged in so many of the activities expected of his ilk: stealing cattle, killing and dismembering unarmed civilians, the ubiquitous gang raping of rural women and girls (some to the point of fistula, a condition where the vaginal wall is torn so badly that the women is permanently incontinent), burning to the ground entire villages much like the one to which he had now returned, and even scattered incidents of cannibalism. He did not bring it up; and

4 Mobutu's 32-year (1965–1997) reign is legendary for its brutality. See footnote 18 for fuller discussion.

5 In Kinyarwanda, the national language of Rwanda, *interahamwe* means 'those who stand [or fight] together'; this is interchangeable with the French *génocidaires* (those who committed the genocide). A popular belief in the international media that these were the core group committing the genocide (much like the Nazi SS) has been criticized by some studies which have emphasized a more populist genocide, with ordinary Hutus participating *en masse* (see e.g. Gourevitch 1998; Mamdani 2002).

6 Principally the *Banyamulenge* (Congolese Tutsis who speak Kinyarwanda rather than Kiswahili, the dominant language in the Congo east of Kisangani, and thus have increasingly have become associated with invading Rwandans). This makes it seem as though this is a residual of some Hutu-Tutsi conflict from the Rwandan genocide, but that would be misleading, especially since Tutsis prior to the genocide made up a mere 13% of the Rwandan population (current figures are not available as Rwanda now bars the collection of such ethnic data), and Tutsis have lived for centuries in the eastern Congo. The actual ethnic conflicts are myriad. Apart from the Hutu-Tutsi rivalry, there are rivalries between various other 'Nilotic' and 'Bantu' groups (such as the Bantu *Lendu* in Northern Kivu, who claim that the Nilotic *Hema* are not autochthonous to the region). In Southern Kivu, the *Bafulevo*, *Barega*, and *Badembe*, and in Southern Kivu the minority *Bakano* distinguished themselves as indigenes against the *Banyarwanda* (loosely translated, people from Rwanda, but sometimes referenced only for Congolese Hutu), but each group's presence in the region is highly relative. The various permutations of conflict make the area incredibly the area extraordinarily difficult to decipher. In the end, the distinctions are historically fraught, flexible, localized, and frequently imagined.

7 Notably the *Rassemblement Congolais Pour la Démocratie* (the Congolese Rally for Democracy, or RCD). The Rwandan Patriotic Army (which retains an English acronym because it emerged as an exile force originally based in English-speaking Uganda that invaded and liberated Rwanda from its 1994 genocide) has been the official 'invasion' force from Rwanda that has operated alongside the RCD. The RCD are technically autochthonous insurgents against the DRC government, though they are commonly conflated with the Rwandan army.

8 Angola, Namibia, and Zimbabwe provided troops to aid the DRC government against invading Ugandan and Rwandan armies following a 1998 meeting in Harare. Chad, Libya and Sudan shortly thereafter followed suit with advisors and aid. The conflict has had the effect of 'blurring its sovereignty over major parts of its territory' (Mbembe 2000: 280). For a protracted discussion of the motivations of each nation in this conflict, see John F. Clark's edited anthology, *The African Stakes of the Congo War* (2002).

we knew better than to ask. Regardless, he appeared to us an exceedingly gentle and warm individual. One day we walked up toward the lavish Catholic Church strategically located atop a hill overlooking Minova. We plaintively gawked at this expansive rural slum, where the only signs of development were the high tension power lines installed by Belgian colonialists almost 50 years earlier to connect the eastern Congolese cities of Goma and Bukavu. A visual anomaly for this lightless 'city', their presence nonetheless conjured a curious geographic spectacle, as scores of enterprising residents clustered their domiciles directly beneath them in the hope that someday they would be well positioned to acquire electricity. An apt metaphor for 'development' (*maendeleo*) in the eastern Congo,⁹ likely all such subtechnological dwellers have thus far gained from their proximity to power (both figuratively and literally) is a host of physiological ailments. But to stop there suggests a kind of Afropessimism that underplays the symbolic importance people assign to such icons of hope and prosperity. Perhaps it was at this vantage that he felt it was time to ask a question that had obviously been on his mind for some time: 'how long will it take Minova to become like Chicago?'

His question, at first consideration, could be mistaken for a rejoinder to the absolute opposition of digital age extremes, reflecting the degree to which a seductive global city like Chicago, a locale so representative of the digital age that the cyber-action, Baudrillard-influenced film *The Matrix* was set there, differs so substantially from a forsaken, war-ravaged semi-urban abyss in Central Africa. In fact, his question reveals a more sophisticated perception, or more accurately awareness, many Congolese have about their natural resources. The Congo (the eastern region in particular) is home to considerable proportions of the world's mineral wealth: gold, diamonds, uranium, cobalt, copper, cassiterite, and coltan. Coltan (a common African abbreviation for the ore columbite-tantalite) is used as a high-charge conductor for mobile phones, digital games, microprocessors, and a variety of other products associated with digital age technologies.¹⁰ Its emergence as a globally significant commodity essential to the mass production of high technology products occurred as warlords and armies in the eastern Congo converted artisanal mining operations in small villages like Minova into slave labour regimes to earn hard currency to finance their military operations. As world demand for mobile phones and Sony PlayStations exploded in the late 1990s and early 2000s, so too did digital industries come to rely increasingly on coltan from the Congo, which is estimated to hold about 80% of the world's reserves (Moyroud and Katunga 2002: 159).¹¹ In other words, this obscure mineral has had the distinction of effectively becoming a kind of *blood diamond of the digital age*. As with other contexts plagued

9 See Smith (2008, forthcoming) for protracted discussion of the meanings of development in the east African context, particularly with respect to the meaning of the Kiswahili term *maendeleo* (commonly translated as development, but best understood as a kind of going forward; the implication is a kind of progress or action without necessarily any kind of teleology).

10 This silicate (from which the heat-resistant powder tantalum is extracted) is at present the most effective current conductor in existence, and a crucial component of the microchips found in all digital technology (cell phones, laptops, pagers, Sony PlayStation, iPods, etc.).

11 This refers to coltan reserves, not to actual global sales. The majority of documentable internationally traded coltan actually comes from Australia (there are also deposits in Canada and Brazil). Some policy and corporate analysts suggest that Congolese coltan has been rather marginal in the global tantalum market; however, as with diamonds or other minerals that are traded through surreptitious channels, it is impossible to say how much of it actually comes from the Congo. What we do know is that radical price fluctuations (a 10-fold increase in prices owing to global scarcity) in 2000 indicate that the market for illicitly traded coltan is larger than any market

by what many have come to call the ‘resource curse’ of mineral-rich nations (Auty 1993; Humphreys, Sachs and Stiglitz 2007; Sachs and Warner 1995, 1997), the Congo’s mineral affluence is balanced by a global greed for gadgets in which death becomes a currency (or in more crudely economic terms, an ‘externality’) for the efficient flow of capital to digital distributors and investors.

This *necropolitics* – to borrow Achille Mbembe’s (2003) neologism – may be news to ordinary North Atlantic citizens, but in fact Congolese are keenly aware of the value of their resources. Congolese are quick to correct (and for that matter are visibly irritated by) assertions that their country is ‘poor’; conversely they suggest that their experiences of suffering and foreign exploitation demonstrate just how rich they are. And even if Mbeni, like many Congolese, does not know precisely the range of products that coltan is used to make, he does know that finding a creative way to establish durable industries to export the product is the key to fundamentally transforming a place like Minova into an imagined urban utopia like Chicago. In asking when Minova might become like Chicago, Mbeni may have misestimated the pace and potential of industrial development in central Africa, but his question comes from a context which is all too aware of how the Congo is an essential part of the underbelly of the digital age.

I have two primary aims in this paper. First, I explain how exactly the global organization of the market for coltan has contributed to the development of a digital world, often at the expense (in lives and labour) of those who produce it. Second, I hope to provide in some rudimentary sense an understanding of how Congolese are attempting to transform this engagement with globalization through the proliferation and perfection of artisanal production techniques. In particular, I examine how it has been the ingenuity of small-scale, artisanal Congolese coltan miners in improvised production systems that hold the greatest socioeconomic hope for post-war rural Congo, while neoliberal development policy has erroneously regarded them an irritation to be eradicated.

Digital dreams/digital divides: cannibals and kings in the global economy

The British mobile telecommunications giant Vodafone, which controls a significant portion of the African wireless market, introduced a provocative marketing campaign in the Congo during the period of my initial fieldwork in 2006. Playing on Congolese cultural ideas about human interconnectedness and unity, a billboard which could be found at key intersections in the eastern cities of Goma and Bukavu featured coltan miners happily harvesting away the ore in a harmonious commodity supply chain. The slogan read ‘one nation, one network’ [*une nation, un réseau*]. The Vodafone slogan appears ordinary and unexceptional unless one is aware of the extraordinary political economic context of coltan. Of course, the idea of a networked, developing African society uniformly working to usher in communicative and technological advances plays

surveys have traditionally proposed. We also know that there is no technology at present that is capable of recycling tantalum from cell phones or other digital devices, and that Australian mining operations are largely unsustainable, meaning that whatever the share historically of Congolese coltan on the world market, it is poised for a much larger and growing market share in years to come.

on particular ideas about modernity that have increasingly had global importance. Many believe that scientific and technological advances have the potential to radically alter the world to alleviate all of our contemporary social and economic ills. Indeed, much has been made of the sociological importance of globalization. The sociologist Roland Robertson (1992) proposed that globalization involves a kind of ‘compression’ and ‘intensification of consciousness of the world as a whole’. Other scholars such as Held (1995), Giddens (2003), and Albrow (1996) similarly have expressed optimism and hope for the exchange of ideas (democracy, freedom, mutual understanding). The positions are extraordinarily varied (and I do not mean to suggest uncritical of the practice of globalization) but the underlying paradigm is the same: globalization, particularly that which marshals technological and communicative advances, creates a world where societies can no longer be isolated; where constant interaction and exchange will usher a new era of interdependence.

Some perspectives border on the utopic in their anticipation of the progressive future, as for instance Kenichi Ohmae’s popular *The Borderless World* (1990). Others are reactive to the concomitant criticisms of global interdependence that have emerged in concert with the explosion of globalization literature over the last 15 years: economists Jagdish Bhagwati (2005) and Kent Jones (2004), for instance, have taken to writing impassioned defences of globalization and embattled organizations such as the WTO. The neoconservative movement in the US rushes fervently (albeit ineffectively) to establish democracies in the Middle East. Many in the financial community talk excitedly about the ‘death of distance’ as hyperactively as Fukuyama (1992) long ago forecast ‘the end of history and the last man’ as the end of the cold war toppled the last barriers to democracy and capitalism.

Of course, on the other side is the discontent thesis of globalization, summarized well by Saskia Sassen (1998), David Harvey (1990, 2005, 2007), Joseph Stiglitz (2002), and many, many others. In the Congo, we find the discontents of a people highly removed from (yet deeply implicated in) digital age development. Those familiar with the tragic history of the Congo will recall how it has had a recurring role in this regard, through an estimated 10 million killed under Belgian colonialism in the search for rubber and ivory, to Congo’s exploitation during the transatlantic slave trade (Hochschild 1998; Marchal and Armah 2003).

Ideas about the expending of life for economic gain have gained popularity in recent years among those concerned about the implications of technology in our new world order. *The Matrix* is here again an interesting popular culture referent: the film depicts a post-apocalyptic ‘real’ world scorched by war with artificial intelligence, one that AI seems to have won and subsequently imprisoned the balance of the human race. Immobilized and permanently unconscious humans are compliant because their brains and bodies are symbiotically attached to machines that infuse blissful images of social and economic prosperity, in a simulacrum of 21st century life, directly into their brain stems. Meanwhile, the humans are used as an energy source for the heat produced by our bodies, and when we die our bodies are recycled as liquid food for our fellow cyber-inmates. This is unbeknownst to all but a small cadre of militants who have managed to free themselves from the machines and then periodically reinsert themselves into this simulacrum¹² to liberate other humans by battling

12 The connections between Baudrillard and *The Matrix* have a beleaguered speculative life, particularly in cyberspace. The most commonly referenced connections are Morpheus’ declaration

machine-programmed avatars with a revolutionary alacrity, superhuman strength, and impressive wardrobes.

As science fiction analogues go, this one covers many of the bases in a growing body of anthropological work examining the political economy of scientific and technological innovation. Observers of the global trade in organs examine how advances in medicine drive consumption in human chop shops abroad, what Scheper-Hughes has referred to as a new cannibalism. Bioprospecting in the Caribbean and Amazon has enabled the fomenting of a multi-billion dollar pharmaceutical industry. Likewise, the mineral trade in coltan serves as an excellent entry point for understanding not only the inequities of scientific and technological access, or digital divides; but also for the creation of durable political economic structures that embed completely different human experiences. The human organ trade is a particularly apt analogy to this particular ‘cannibal economy’ in that both it and the coltan trade exemplify profit for some lives at the loss of others, to prolong life or increase the wealth or convenience of some respectively. As Nancy Scheper-Hughes has said of the organ trade, ‘we are now eyeing each other’s bodies greedily . . . as a source of detachable spare parts with which to extend our lives’ (2000: 198).

At times the ‘cannibal economy’ in the Congo has insinuated itself as much more than metaphor. The Mai Mai,¹³ composed largely of kidnapped children who at one point were estimated to number as high as 30,000, are famous for their use of cannibalism as a weapon of war. Though this militia has now been largely demobilized and transformed through electoral politics into a *partie politique*,¹⁴ they recognize that any success and standing they have obtained throughout the Northern and Southern Kivu provinces can be attributed in a large part to the way they instil fear in eastern Congolese, particularly a fear associated with the use of the occult and the acquisition of supernatural powers. So today the Mai Mai are widely equated with cannibalism, and a grisly form of it at that, in which eating the raw hearts of their victims is believed

to Neo of the ‘desert of the real’ to identify a post-apocalyptic Chicago overrun with life-force-sucking machines – a reference to Baudrillard’s line from *Simulacra and Simulations*: ‘It is the real, and not the map, whose vestiges persist here and there in the deserts that are no longer those of the Empire, but ours. *The desert of the real itself*’ (Baudrillard 1994: 1) – also referenced is Neo’s stashing of contraband technology in a copy of Baudrillard’s famous tome. To be fair, the late Jean Baudrillard (1929–2007) denied that the film had anything to do with his work.

- 13 Throughout the 1998–2003 war (and continuing after the cease-fire among small pockets and breakaway militias), the Mai Mai have been engaged in a very long struggle against the Rwandan-backed RCD. Though the RCD draws its ranks largely from Kinyarwanda-speaking Congolese Tutsis called *Banyamulenge*, the Mai Mai regard them as foreign invaders. The RCD have been directly aided by the Rwandan government, and see their mission as one of rooting out the *interahamwe* who were responsible for the 1994 genocide and since their defeat and flight into the Congo, waged war on Congolese Tutsis. To finance their military operations, Mai Mai and RCD (like most militias in the eastern DRC) have consistently enforced slave labour production regimes in coltan mines. Major coltan mines in Walikale and Masisi (in Northern Kivu), and Shibunda (in Southern Kivu) have at various times been controlled at the barrel of a gun by militias.
- 14 In travelling through eastern Congolese provincial capitals one finds the presence of party political headquarters of organizations that were have been accused of some of the worst atrocities seen in any recent war. All of these organizations – the RCD, Mai Mai, and even the *Forces Démocratique pour la Libération du Rwanda* (FDLR, the Hutu group at war against Rwanda, which includes the original members of the *interahamwe*) – as they have disbanded their armies or been absorbed into the Congolese army, have offices in Bukavu and Goma (provincial capitals of Southern and Northern Kivu, respectively).

(by Mai Mai and rural Congolese alike) to give them supernatural powers. Of course, the use of the supernatural is likewise important to establishing cohesion and loyalty within the Mai Mai militia. In addition to ritualized cannibalism, a host of magical rites, charms, and libations are deployed by Mai Mai leadership to persuade their teen and pre-teen conscripts that they are impervious to bullets.

Documented incidents of actual flesh eating were far less common than average Congolese believe, yet their symbolic role as a metaphor for the cannibalistic war economy is telling. As with Scheper-Hughes analysis of the conversion of some of the earth's poorer human beings into body part wholesalers for the affluent, there is likewise in the Congolese coltan trade a radicalization of exchange values in capitalism to include human beings (as soldiers, sex slaves, forced labour, and even as food). And one is reminded of the rumours in Rio about roving vans that kidnap favela residents, extract all their organs and leave their disembowelled carcasses rotting in ditches, ominous reminders of the simultaneous intimacy and elusiveness of global capital. And to be clear, this is hardly a new phenomenon specific to some globalization epoch concomitant with the rise of the Pentium processor, as the popular belief during the Middle Passage that white slave traders were cannibals (see Pierson 1977 for discussion) – a technically accurate accusation if you think about it – evidences.

The influence of cannibalism, in terms of both its actual practice and its aesthetic, signifies an important transformation taking place within the arrangement of labour and lives in the digital age. In the 19th century when Marx wrote about use and exchange values, it was about objects like gold and lead having arbitrary utility that generated value in exchange and told us something about how commodities were constituted; and how labour power itself was increasingly becoming quantified in an emerging capitalist era solely in terms its commodity form; and how the ubiquity of such a system in which one was required to sell one's labour power on an open wage market seemed pretty scary. Marx, in fact, was not shy about invoking the necromantic imagery (werewolves, vampires, magic more generally), to make his case; and at least one literary critic (Cvetkovich 1992) has suggested *Capital* can be read in the genre of the Victorian sensationalist novel, bearing much resemblance to Mary Shelley's *Frankenstein*.¹⁵ Of course, to the extent that human beings themselves, not only their labour but also their very corporeality, have become the instruments of global exchange, we should be concerned about the implications for a digital age that seems to thrive precisely because of their production.

The academy in recent years has rushed to make some sense of these anxieties by turning their attention of the role of the sovereign (which usually means state) in the global age. A body of scholars (not to be confused with itinerant scholarly bodies) engaging Foucault (and here I am thinking of the work of Hardt, Negri and Agamben) have insinuated that our digital desires and increased global dependency have something to do with biopolitics or biopower, a reference to the diverse ways in which the state subjugates. More preferable given the current geopolitical context I think is Mbembe's *necropolitics*, his rehabilitation of the biopolitic idea, for its conceptual intervention in rethinking rethink of the notion of sovereignty away from state-centred approaches, toward more diffuse political and economic relationships. As he notes with respect to Africa:

15 See also Robert Paul Wolff's *Moneybags Must be so Lucky* (1988), his famous analysis of satire in *Capital*.

Many African states can no longer claim a monopoly on violence and on the means of coercion within their territory. Nor can they claim a monopoly on territorial boundaries. Coercion itself has become a market commodity. Military manpower is bought and sold on a market in which the identity of suppliers and purchasers means almost nothing. Urban militias, private armies, armies of regional lords, private security firms and state armies all claim the right to exercise violence or to kill. Neighboring states or rebel movements lease armies to poor states. Nonstate deployers of violence supply two critical coercive resources: labor and minerals. Increasingly, the vast majority of armies are composed of citizen soldiers, child soldiers, mercenaries, and privateers. (Mbembe 2003: 32)

The liberalization of violence away from the state to diffuse non-state (yet at the same time no less sovereign) actors, and its multiplication in a variety of highly creative methods of coercion merits serious consideration. In particular, that death, violence, and coercion are a significant part of the emerging global world order that has abetted the rapid expansion of our digital age requires very stern reminding. The role that capital has over our lives is not merely manifest in the subtle vagaries of our communication habits, but also in the lust for its own will to power and its methods of expropriation.

Part of our attention deficit I believe can be credited to the method in which humanistic analyses of economy have turned their attention toward Simmel (1978) and away from Marx (1976), and in doing so dwell on consumerist analyses of shopping, product design, and style (e.g. Appadurai 1986; Fine and Leopold 1993; Miller 1998; for excellent analysis of these theoretical currents see Graeber 2001: 31–33; 2004: 71–72). While such studies are admittedly useful for asserting the complexities of Western economic culture (and by no means do I intend to diminish their significance), the more general intellectual turn toward introspection and reflexivity has all too often diverted attention away from the economic activities of those on the productive margins of the global economy, and the accompanying processes that in fact provide the material foundations that are necessary any deriving of meaning from any consumer products by ordinary Western subjects can emerge.

Tracing the commodity: coltan and the digital age

In contradistinction to the more Foucaultian analyses of power that have dominated recent discussion about the meanings of commodities exclusively in their consumptive domains, an analysis of coltan's role in the global market serves as an abject reminder of the necropolitical manner in which epochally significant global trade has typically thrived. This kind of approach can be traced to Sidney Mintz (1985), who examined the connection between production and consumption through a particular object (sugar), showing how tastes, ideas, sentiments and material processes (such as class and state formation) in Europe were rooted in productive processes elsewhere, namely in the Caribbean where slave labour regimes were largely responsible for this modern capitalist expansion. Writing on what Appadurai called 'social life of things' exploded in years following (see Smith and Mantz 2006: 78–80 for summary of that literature, which for the sake of space is not reproduced here). Just as sugar was significant to the growth of urban industrial centres in Western Europe in the 18th and 19th centuries, so too has Congolese coltan been pivotal to the digital revolution within which we now find ourselves.

Coltan is circulated through elaborate international channels; in eastern border cities like Goma and Bukavu, it is bought by high level middlemen (*comptoirs*, or accountants), frequently operating in collusion with local militias, who in turn typically sell to Belgian, South African, Rwandan, and other foreigners. Those intermediaries then sell to buyers in the United States, Japan and Europe who extract the tantalum powder from the ore and refine and process it. To take a random example, Swiss investor Chris Huber, through his two St. Kitts-based offshore corporations Fimining and Raremet Ltd., has allegedly purchased large quantities of coltan from Rwanda Metals (basically a front for the Rwandan Patriotic Army). Both companies are major traffickers in the Congolese coltan trade (Cross 2005: 46, citing United Nations Security Council 2002), and are believed to sell coltan to the metallurgical processing plant Ulba in Kazakhstan (one of the world's major processors of columbite-tantalite into tantalum powder). It is thought that Huber is linked to Viktor Bout, a well-known arms trafficker for several African militias (IPIS 2002: 6), who would likely have supplied the Rwandan-backed RCD in their ruthless occupation of the eastern Congo. The metallurgical plant in Kazakhstan is a former uranium processing facility (it was a weapons plant when Kazakhstan was part of the Soviet Union), an interesting postscript to the reorganization of production and exchange in the post-cold war environment. Where Mobutu's Congo had been a cold-war ally against communism in Africa, and Kazakhstan a Soviet weapons depot, both have assumed new roles in a digital economy where cell phones and gaming stations are traded for weapons, which thereby enable warlords to continue processes the reproduce the entire system of production and exchange.

Global demand for this substance of course drives the nature of this trade in the Congo, whose vast reserves of coltan are largely unexploited. For instance, when Sony PlayStation 2 was released in 2000, Christmas demand for the product caused world coltan prices to rise 10-fold overnight, and the DRC became a logical place to fill the supply gap. The 2006 release of PS3 did not have quite the same impact on coltan prices, but it mirrored coltan's mystification. PS3s are assembled in a process unbeknownst to the swathes of teenage (mainly American) boys who insist upon its Blue-ray graphics superiority to the Nintendo Wii or Xbox, though this disconnection couldn't be more ironic. A Google search of 'PS3 Violence' yields nearly 2 million hits; most of the initial pages are devoted to news stories covering the November 2006 release of the gaming device, where a short supply (a mere 400,000 units) led to conflicts, including shootings at Best Buy stores around the US. That PS2 in 2000 was in no small way responsible for violence in the DRC, as militias vied for control over the suddenly very lucrative mines, seems to have escaped inclusion in this commodity calculus.

And while coltan's commodity chain and its relevance to our planet may be mystifying to the 14 year old kid who has been lured away from us to the seductive virtual world of Halo 3, it certainly is not to financiers who operate in the real world of global exchange. Citibank and other corporations have negotiated directly with the ruthless occupants of the eastern Congo, notably with the RCD, who forced people to mine and plundered their villages. In other words, our demand for this product; indeed, the entire hope, promise and success of our digital age, has occurred (as it did during the transatlantic slave trade, interestingly also with much 'labour' from the Congo) on the backs of somewhat discerning exploitative production and circulation systems in Africa engineered by affluent nations.

Coltan production: the emergence of the improvisation artisanal

Far from being organized and regimented systems of production for a global market, most contemporary coltan mines are by their very nature lawless and entrepreneurial. Even the 'organized' mines have tended to be controlled by regional militias, and now by the DRC government under the auspices of preferential relationships with foreign traders. At the time I was conducting research in Southern Kivu (in the small coltan village of Numbi) in 2006, Laurent Nkunda, a defected general who reconstituted a rogue division of the RCD with the stated aim of defending ethnic Tutsi Congolese from aggression by interahamwe, held an army of 4,000 a short distance away at the very profitable mine of Masisi.¹⁶ We kept our distance, not wanting to get too close to their forced labour regimes, where large quantities of coltan is extracted and sold to foreign (in Nkunda's case Rwandan) buyers to finance their military operations. Despite the attention these larger mines have attracted from buyers, governments, and the international community, the vast majority of coltan mining operations are small operations where a group of unemployed boys and young men fashion elaborate mining, water catchment, and human transport systems.

Miners (*creuseurs*) manage to accomplish the unfathomable task of getting this dense ore out of the ground, without any machinery or tools, and across vast expanses of forested land to *négociants* (low level middle men) for sale to foreign buyers. The towns adjacent to such operations are otherwise dilapidated, having been ravaged and pillaged by three or more armies over the last decade. Despite the inherent danger of the mines (deadly accidents frequent; weekly, sometimes daily¹⁷), and their attraction to roving militias, the mines provide one of the few sources of income, prosperity or hope for rural eastern Congolese. As one shop owner put it, 'without the mines, there would be nothing in this town. You couldn't even find a bar of soap'.

Within the cold calculus of a global economic formula that has largely funded what Stephen Jackson (2002) has called a 'war economy', where coltan is traded for hard currency (which in turn buys arms for itinerant warlords), improvised mining operations falling outside the influence of the war economy hold great promise for the artisans that maintain them. Assuming that a cease-fire can be maintained in any durable way for this region of Africa, mining actually represents an opportunity for the building of a sustainable economy and society. Moreover, the artisanal model is consistent with cultural ideas about the importance of creativity and improvisation in economic life. Congolese valorise the entrepreneur, and even at times the huckster, as venerable examples of self-reliance; in its most extreme form, the valuation of autonomy took the form of the deposed dictator Mobutu Sese Seko's proclamation,

16 Nkunda left shortly after we did and went to the Virunga National Park to eat gorillas and engage in a failed military incursion against the UN. He finally entered into a cease-fire agreement with the Congolese government on January 21, 2008. There remain rogue militias in the eastern Congo (notably the Rastas, a breakaway gang from the interahamwe who refused to be nationalized when the FDLR dissolved its militia in 2006), but this was the last major militia, significant in that Nkunda had achieved a fair number of military victories over the DRC Army in 2007, and were only stopped by the UN MONUC peacekeeping force.

17 Some miners are trapped inside collapsed mines; others fall from heights and if the fall does not kill them, they can suffer compound fractures (broken femurs are common), made deadly by the fact they are so remote medical attention is inaccessible, so they commonly die of gangrene or sepsis.

débrouillez-vous (fend for yourselves). The corruption of his regime¹⁸ is often held as an prototypical example of what Francois Bayart (1993; see also Bayart, Ellis and Hibou 1999) has called the ‘politics of the belly’, a symbolic device used to convey a wide range of ideas about food scarcity, prosperity, and witchcraft, one which casts material wealth (and accumulation, which the belly essentially embodies) as virtuous. At best, this set of cultural ideas has been accused of enabling a dictator like Mobutu, and complicating the viability of Western civil social institutions. At worst, it is derided as fundamentally anti-communitarian, and thus intolerable to the spirit of African social organization.

Such thinking I believe falsely bifurcates Western and non-Western people according to imagined economic orientations. The net result is that it becomes easy to gloss over improvised production systems and their entrepreneurial ethos as a ‘survival strategy’ or ‘adaptation’, despite its contribution in providing the materials necessary to meet the global demand for digital products (Smith and Mantz 2006). Without the ingenuity of elaborately devised artisanal production systems in the eastern Congo, channels which have been vital in providing cheap raw materials to meet the insatiable Western demand for digital products over the last ten years, we would not be speaking about the great promises that inexpensive digital products have for bridging communicative boundaries the world over. The innovations of the digital age have not happened in a vacuum; they are contingent upon equally important ingenuities and improvised production systems in places like the eastern Congo. As eastern Congolese commonly say, ‘you must do what comes to you’.

We tend to think of spontaneity, innovation, creativity – all the characteristics that give rise to ideas like the user-friendly operating system, the iPod, or the hearing aid – as something associated with a realization of human progressive potential, a careful harnessing of intellectual energy to meet the practical needs of society as it ushers in advances in science and technology. But the acceleration of creativity in the modern and late modern eras in some ways also means its demise. Indeed, the success of capitalist mass production derives precisely from the fact that it is regimented, wrought, mechanical, and mundane. Improvisation (at least as far as material labour is concerned) is anathema to it. Spaces for creative reflection increasingly appear localized among those possessing adequate resources and the leisure time necessary for introspection,

18 General Joseph Mobutu took rose to power following Patrice Lumumba’s murder in 1961. From then until his ouster in 1997, Congolese endured continuous economic turmoil resulting from his policies, justified through actions like renaming the nation Zaire to promote ‘African authenticity’. His name is a reflection of that. He was born Joseph-Désiré Mobutu, but upon assuming power required everyone to call him Mobutu Sese Seko Koko Ngbendu wa za Banga (which is usually translated as ‘The All-Conquering Warrior Who, Because of His Endurance and Inflexible Will to Win, Will Go from Conquest to Conquest Leaving Fire in His Wake’; apparently in Lingala it literally means ‘The Cock Who Jumps on Anything that Moves’.) He outlawed neckties, Christmas and anything else foreign. And he took over any white or Indian (Indians have a historically strong physical and economic presence throughout Africa) land and businesses and turned them over to his friends, who bankrupted them, and drove them out of the country. He let the infrastructure of the Belgians (water systems, roads, electricity) all go to waste. But he was expressly anti-Soviet, so the CIA was enlisted to overthrow Lumumba (his democratically-elected predecessor) and the US backed him for 4 decades during the cold war (in the late 1970s e.g., half of the foreign aid given by the US to Africa went to Zaire). He was brutal; murdered anyone who opposed him, and tried to gain legitimacy among his people by claiming that this was ‘African authenticity’ and an assertion of autonomy from outsiders (though clearly they depended on US aid). For additional discussion see Reno 1999.

a domain of capital not inhabited by those on the production side of the commodity chain.

One should again recall Mintz's (1985) arguments about sugar and the development of Western capitalism, and how the creative activities and innovations of real people supported elaborate production systems on the ground. For instance, Caribbean slaves responded to forced sugar economies by forging new cultivation schemes for the production of their own food on marginal provision grounds adjacent to plantations (Gaspar 1991; Mintz 1995). They also developed a whole entrepreneurial system for the marketing and transfer of surplus products in elaborate regional trade systems that still survive today (Beckles 1991; Mantz 2007). Such freedoms wrestled from masters in the arena of economic activity bear resemblance to other more commonly known and discussed forms of improvisation and creativity associated with the performative domains of religion, music, and dance (see Brathwaite 1993). Similarly, in recent innovations of science, technology, and medicine lay the capacity for human beings to radically alter (for better or worse) the planet in permanent ways. And this is a phenomenon that we should not think of as localized in say, Silicon Valley. Unfortunately, both international and Congolese policymakers and planners seem to be thinking of it in precisely that way.

The state of/and artisanal mining

The tack taken by the current Kabila¹⁹ administration (and more broadly by development planners in the DRC) veers substantially from cultural mores concerning entrepreneurship and creativity in significant ways, ones that have implications for the perception and institutional tolerance of artisanal mines. Artisanal miners are monolithically perceived by the Congolese government, and most international development organizations and financiers, as a nuisance. Governmental officials have argued that such mines, in their illicitness, subvert millions of dollars in potential tax revenues; while at the same time discouraging foreign capital from investing in larger, more productive mining operations. Any workable solution to Congolese development would require, they say, a concerted government effort to close down the artisanal mines. Quoting an anonymous official, *Newsweek's* Rod Nordlund revealingly reported: 'Finding a way to solve the problem of millions of artisanal miners is going to be a real challenge for the new government . . . But they're going to have to do it if they want foreign investment, which they desperately need' (2006). It is significant that these miners, and the kind of small-scale entrepreneurial model they represent, are being conceived as a national 'problem' for national development strategy, and that it is a consolidation of mining operations into the hands of a few select investors represents the first step towards achieving an optimal exploitation of the DRC's extensive mineral resources.

19 I refer here to Joseph Kabila, who has been president of the DRC since January 2001. His father, Laurent Kabila, successfully overthrew Mobutu's government in 1997, but was subsequently assassinated. Joseph Kabila then assumed the presidency; and was successful in becoming the DRC's first democratically elected leader in 45 years during the 2006 elections. Kabila is originally from Fiza, a territory in Southern Kivu province, and is thus a Kiswahili (as opposed to Lingala, the language of the West) speaker; and is widely popular in the east of the country.

A resolution to said ‘problem’ is significantly harder to actualize than I think anyone in policy circles has considered. For one thing, the problem is erroneously localized by planners at the site of production, among poor miners who are barely earning a dollar or two on days when they actually have ore to traffic. The real slippage in tax revenues actually occurs at the level of exchange, where *négociants* and *comptoirs*, often already of non-Congolese (Belgian, South African, Rwandan, and Asian) nationality have formed regional oligopolies and monopolies over the exportation (legal and illegal) of coltan and other minerals. Of course, no Congolese public official is going to condemn these middlemen for their lack of fiduciary transparency or tax evasion, as these are often the same individuals with whom the Congolese government and provincial officials in North and South Kivu have negotiated patronage relationships. The trade is so much governed by backdoor deals that bribes are expected even when soliciting the most basic of information about the coltan trade. And the practice of paying them is extraordinarily layered and highly structured. It is also important to mention here that many public servants in the east have not been paid in years, decades in some cases, if ever at all. Extortion and bribery become an ordinary means through which one is actually able to earn an income. It is hard to imagine a tax strategy being tolerated (or more importantly, enforced) that would jeopardize these relationships, especially given that public servants in the east are well aware that development plans (especially those associated with IMF structural adjustment) often entail a radical downsizing of the public sector. Furthermore, I can say with ethnographic certainty that it would be extraordinarily unusual for a miner (*creuseur*), given their geographic and political remoteness, to be involved in a patron-client relationship of this nature. Indeed, largely what differentiates the *négociant* and *creuseur* as categories is participation in a field of elaborately networked exchange relations. The *creuseurs* we encountered in Numbi informed us that no white person has been to their village since 1973.

Second, such an interest in formalizing mining reifies typical development precedents (in the DRC and elsewhere), in that it suggests a fiat to this ‘problem of artisanal miners,’ one that fails to consider their propensity to be risking their lives and limbs in mines in the first place. For that matter it assumes a commitment in these local communities to the state as an acceptable economic entity (even if their participation in elections potentially suggests a shift in their perception of Kinshasa’s political legitimacy). None of these mining communities view the DRC government as affording them any security against murder, rape, kidnapping and extortion by local militias (even with regard to the UN, whose peacekeeping forces there constitute the largest contingent in the world, their attitudes are varied). The fact is that most of the miners dig because it is the only secure income-earning endeavour in which they can engage. Farming on any scale beyond small-scale gardening has been decimated by war where harvests were, (and for that matter continue to be), typically appropriated by roving militias. Land has fallen fallow, and conflict and a cessation in agricultural ventures have taken a toll on human capital, as an increasingly youthful population knows little of more sophisticated farming techniques. Pastoralism has suffered tremendously, as cattle raiding has ripped apart herding communities economically as well as socially. Agriculture and pastoral herding both require a capital investment that has proven unsustainable over the last decade, since militias could enter any village at any time and quite literally rob the fruits of one’s labour.

But on the ground mining has come to have a completely different social meaning. While the capital investments in mining are tremendous, and what is produced is

just as vulnerable to theft or extortion from local militias, minerals like coltan are so abundant that even a major loss of revenue can be, in relative terms, easily replaced. Until there emerges a faith that the era of institutionalized kleptocracies (which easily stretches back well beyond Mobutu's reign in the early 1960s to King Leopold II in the late 19th and early 20th centuries; and arguably even before that), the imagined community of eastern Congolese voluntarily participating in some government-instituted policy initiative aimed at formalizing mining and reinvigorating farming is completely farcical. The simple fact of the matter is that eastern Congolese are a long way from perceiving any national or international entity as fulfilling its end of any social contract.

Thirdly, efforts to impose larger economies of scale on the mining industry (to the extent that these have already been tried in places like Masisi or Walikale, where what effectiveness they do have is owed largely to the fact that they are militarized), neglects the geographic and social realities of the DRC. Absent massive infrastructural investments (to wit, building an entire road, rail, and shipping network through a region the size of Western Europe) the terrain is largely oriented to small-scale operations. In fact, many of the artisanal mines are hit and run ventures carved out along roadsides, where a small amount of ore is extracted and the mine abandoned after only a few weeks. Furthermore, nearly four decades of social fragmentation under the Mobutu regime, manifest in a government policy of *débrouillez-vous* followed by the disorder of a decade-long conflict has tended not to produce the kind of social organization that would need to be in place to transcend self-fashioned production in favour an ostensibly utopic construct like the state.

To put it plainly, all the lessons of political economy come to bear on the situation in the DRC. For how can we expect economic rationalities that have hitherto been non-existent to become socially embedded (Granovetter 1985) overnight? Though it has been for decades a major goal within economic anthropology and sociology to emphasize how economic decisions are shaped by myriad factors beyond material self-interest, increasingly scholars coming from what could be considered traditionally to be more ontologically rigid perspectives (neoclassical economics, for instance), have similarly turned to the explanatory power of sociocultural ideas and institutions. For instance, many in recent years have criticized the ineffectiveness of shock therapy and other neoliberal economic policies in the post-cold war context for their inability to grasp how basic economic institutions rely on basic social relationships taken for granted in many Western societies, such as trust in the financial sector. And those lessons are prescient in the case of the DRC as well. Beyond its history of institutionalized kleptocracy, the DRC has also suffered from the destruction of much of its social civil institutions. Cattle theft is particularly significant here, in that cattle are a significant form of investment in this part of Africa, and further are typically the instrument of exchange used in bridewealth arrangements. The institution of marriage has further suffered from what the Congolese regard as the ruination of women through the extensive use of rape as an instrument of warfare. An in addition to institutionally unstable (and culturally novel) households becoming increasingly dominant, the role of elders has been attenuated by their relative absence. Average life expectancy has edged precipitously downward, and frequent internal migration to flee violence or find a bearable living has led to the proliferation of multi-ethnic communities, particularly around mining areas.

Summary

Choosing mining over agriculture is not just about the security of participating in a commodity-based economy. It is also about all of the symbolic things that mining entails, such as prosperity, durable futures, and the introduction of consumer goods (which constitute a durable form of insurance, e.g. having soap or rice or canned goods introduces choices; forms of security). This is an essential issue to keep in mind, especially insofar as the meanings of the digital age are concerned. In this sense, it is important to remember that the ore these miners carve precariously out of the earth is the material bedrock on which the entire digital age, and everything associated with it, is founded. The entire promise of an interconnected world arguably has as its precondition this commodity and its particular qualities (of density and relative accessibility, for example), as well as the labour relations, trade conditions, and internal fragmentation that have made this commodity available to the world.

Jeffrey W. Mantz
Department of Sociology and Anthropology
George Mason University
4400 University Drive
MS 3G5 Fairfax VA, 22030, USA
jmantz@gmu.edu

References

- Albrow, Martin. 1996. *The global age: state and society beyond modernity*. Palo Alto, CA: Stanford University Press.
- Appadurai, Arjun. 1986. 'Introduction: commodities and the politics of value', in Arjun Appadurai (ed.), *The social life of things: commodities in cultural perspective*, 3–63. Cambridge: Cambridge University Press.
- Auty, Richard M. 1993. *Sustaining development in mineral economies: the resource curse thesis*. London: Routledge.
- Baudrillard, Jean. 1994. *Simulacra and simulation*, trans. Sheila Faria Glaser. Ann Arbor: University of Michigan.
- Bayart, Jean-François. 1993. *The state in Africa: the politics of the belly*. London: Longman.
- Bayart, Jean-François, Ellis, Stephen and Hibou, Béatrice. 1999. *The criminalization of the state in Africa*. Oxford: James Currey.
- Beckles, Hillary McD. 1991. 'An economic life of their own: slaves as commodity producers and distributors in Barbados', in Ira Berlin and Philip D. Morgan (eds.), *The slaves' economy: independent production by slaves in the Americas*. London: Frank Cass & Co. Ltd.
- Bhagwati, Jagdish. 2005. *In defense of globalization*. New York: Oxford University Press.
- Brathwaite, Kamau. 1993. *Roots*. Ann Arbor, MI: University of Michigan Press.
- Clark, John Frank. (ed.) 2002. *The African stakes of the Congo war*. New York: Palgrave Macmillan.
- Cross, Tiare S. 2005. 'The challenge of war economies to peace building: a case study of coltan in the Democratic Republic of the Congo (DRC)'. MA Thesis, George Mason University.
- Cvetkovich, Ann. 1992. 'Marx's Capital and the mystery of the commodity', in her *Mixed feelings: feminism, mass culture, and victorian sensationalism*. New Brunswick, NJ: Rutgers University Press.
- Fine, Ben and Leopold, Ellen. 1993. *The world of consumption*. New York: Routledge.
- Fukuyama, Francis. 1992. *The end of history and the last man*. New York: The Free Press.
- Gaspar, Barry 1991. 'Antigua slaves and their struggle to survive' in H. Viola and C. Margolis (eds.), *Seeds of change*, 130–37. Washington, DC: Smithsonian Institution Press.

- Giddens, Anthony. 2003. *Runaway world: how globalization is reshaping our lives*. New York: Routledge.
- Gourevitch, Philip. 1998. *We wish to inform you that tomorrow we will be killed with our families: stories from Rwanda*. New York: Farrar, Straus and Giroux.
- Graeber, David. 2001. *Toward an anthropological theory of value: the false coin of our own dreams*. New York: Palgrave.
- Graeber, David. 2004. *Fragments of an anarchist anthropology*. Chicago, IL: Prickly Paradigm Press.
- Granovetter, Mark. 1985. 'Economic action and social structure: the problem of embeddedness', *American Journal of Sociology* 91: 481–510.
- Harvey, David. 1990. 'Between space and time: reflections on the geographical imagination', *Annals of the Association of American Geographers* 80: 418–34.
- Harvey, David. 1990. *The condition of postmodernity: an enquiry into the origins of cultural change*. Cambridge, MA: Blackwell.
- Harvey, David. 2005. *The new imperialism*. Oxford: Oxford University Press.
- Harvey, David. 2007. *The limits to capital*. New York: Verso.
- Held, David. 1995. *Democracy and the global order: from the modern state to cosmopolitan governance*. Cambridge: Polity Press.
- Hochschild, Adam. 1998. *King Leopold's ghost: a story of greed, terror, and heroism in colonial Africa*. Boston, MA: Houghton Mifflin.
- Humphreys, Macartan, Sachs, Jeffrey D. and Stiglitz, Joseph E. (eds.) 2007. *Escaping the resource curse*. New York: Columbia University Press.
- IPIS. 2002. 'Supporting the war economy in the DRC: European companies and the coltan trade'. An IPIS Report. Website: <http://129.194.252.80/catfiles/2343.pdf>
- Jackson, Stephen. 2002. 'Making a killing: criminality and coping in the Kivu war economy', *Review of African Political Economy* 93/94: 517–536.
- Jones, Kent. 2004. *Who's afraid of the WTO?* New York: Oxford University Press.
- Mamdani, Mahmood. 2002. *When victims become killers: colonialism, nativism and genocide in Rwanda*. Princeton, NJ: Princeton University Press.
- Mantz, Jeffrey W. 2007. 'How a huckster becomes a custodian of moral markets: traditions of flexibility in exchange in Dominica', *Identities: Global Studies in Culture and Power* 14: 19–38.
- Marchal, Jules and Armah, Ayi Kwei. 2003. *Forced labor in the gold and copper mines: a history of Congo under Belgian rule, 1910–1945*. Senegal: Per Ankh Publishers.
- Marx, Karl. 1976 [1867]. *Capital: a critique of political economy, Volume I*, trans. B. Fowkes. New York: Penguin Books.
- Mbembe, Achille. 2000. 'At the edge of the world: boundaries, territoriality, and sovereignty in Africa', *Public Culture* 12: 259–284.
- Mbembe, Achille. 2003. 'Necropolitics', *Public Culture* 15: 11–40.
- Miller, Daniel. 1998. *A theory of shopping*. Ithaca, NY: Cornell University Press.
- Mintz, Sidney W. 1985. *Sweetness and power: the place of sugar in modern history*. New York: Penguin.
- Mintz, Sidney W. 1995. 'Slave life on Caribbean sugar plantations', in S. Palmie (ed.), *Slave cultures and the cultures of slavery*. Knoxville, TN: University of Tennessee Press.
- Moyroud, Celine and Katunga, John. 2002. 'Coltan exploitation in the eastern Democratic Republic of the Congo', in Jeremy Kind and Kathryn Sturman (eds.), *Scarcity and surfeit: the ecology of Africa's conflicts*. Pretoria: Institute for Security Studies.
- Nordlund, Rod. 2006. 'Gems in a graveyard.' *Newsweek*. October 17. <http://www.newsweek.com/id/44443>
- Ohmae, Kenichi. 1990. *The borderless world: power and strategy in the interlinked economy*. New York: Harper Business.
- Pierson, William D. 1977. 'White cannibals, black martyrs: fear, depression and religious faith as causes of suicide among new slaves', *The Journal of Negro History* 62: 147–59.
- Polgreen, Lydia. 2008. 'Congo's death rate unchanged since war ended', *New York Times*, January 23.
- Reno, William. 1999. *Warlord politics and African states*. Boulder, CO: Lynne Reiner.
- Robertson, Roland. 1992. *Globalization: social theory and global culture*. London: Sage.

- Sachs, Jeffrey D. and Warner, Andrew M. 1995. *Natural resource abundance and economic growth*, NBER Working Paper #5398. Cambridge, MA: National Bureau of Economic Research.
- Sachs, Jeffrey D. and Warner, Andrew M. 1997. 'Sources of slow growth in African economies', *Journal of African Economies* 6: 335–376.
- Sassen, Saskia. 1998. *Globalization and its discontents: essays on the new mobility of people and money*. New York: New Press.
- Scheper-Hughes, Nancy. 2000. 'The global traffic in human organs', *Current Anthropology* 41: 191–224.
- Simmel, Georg. 1978. *The philosophy of money*, trans. Tom Bottomore and David Frisby. London: Routledge & Kegan Paul.
- Smith, James H. 2008. (Forthcoming). *Bewitching development: witchcraft and the reinvention of development in neoliberal Kenya*. Chicago: University of Chicago Press.
- Smith, James H. and Mantz, Jeffrey W. 2006. 'Do cellular phones dream of civil war?: the mystification of production and the consequences of technology fetishism in the eastern Congo', in Max Kirsch and June Nash (eds.), *Inclusion and exclusion in the global arena*. New York: Routledge Press.
- Stiglitz, Joseph E. 2002. *Globalization and its discontents*. New York: W. W. Norton.
- United Nations Security Council. 2002. *Final report of the panel of experts on the illegal exploitation of natural resources and other forms of wealth of the Democratic Republic of the Congo*. October 2002. S/2002/1146.
- Wolff, Robert Paul. 1988. *Moneybags must be so lucky*. Amherst: University of Massachusetts Press.