Peace, Technology and the Case of the Democratic Republic of Congo

Introduction

Does technology promote peace? The immediate response may depend on the generation of the person to whom you address the question. For those born after the Second World War and for whom the spectre of nuclear war loomed large during the years of the Cold War between the United States and the Soviet Union, images of technology and its impact on peace likely conjured images of mushroom clouds and bomb shelters. For the generations since, however, "technology" most likely means smart phones, computers, iPods and other personal communication devices. Technology has become, more than ever, the domain of the masses, easily accessible and, debatably, necessary to modern life.

There is a current decline in the instances and intensity of both international and civil conflict (Mueller), and in the 21st Century, we are enjoying an era of relative peace. It may be easy to attribute this in part to information and communication technologies (ICT), especially considering their prevalence in every-day life. In the eyes of many, these technologies have made us "global citizens" who now have access to information and news from around the world, which seemingly shrinks the geographical distances between us, and perhaps the political and cultural gaps as well. Recent examples are the international outcry against the mistreatment of women accused of adultery in Nigeria, and against the repression of protesters in Iran, as information about the plight of others is reported and accessed online and through mobile phones.

There are also many examples of how science today is being used expressly in the promotion of peace. Modern technology, in the form of geographic information systems and satellites, also allows humanitarian and other non-governmental organisations, UN agencies, and governments to track the movement of refugees, locate missing persons during and after conflicts and natural disasters, and to otherwise provide support and servcies to those in need (Cole and Crawford). ICT4Peace Project is an initiative funded by the governments of Switzerland and Norway, and supported by the United Nations, which is exploring ways that ICT can be used to assist with conflict prevention and mediation, and to help other organisations dedicated to peace and development to better collaborate (Stauffacher et al).

The Internet itself was nominated this year for the Nobel Peace Prize for its role in helping people to "challenge injustice, overthrow tyranny and build the social conditions for peace in communities around the world" (Torricke-Barton,¶ 3). Liu Xiaobo, the winner of the prize for 2010, himself praises the Internet for the "awakening of ideas among the Chinese people" (Torricke-Barton, ¶ 3). It is undebatable that the Internet has the ability to reach a wide audience and to disseminate information, and therefore to support campaigns that support peace. The free flow of information that the Internet affords is said to be capable of changing the way that people think, with the ultimate ability to challenge repressive regimes: "…the Internet has an inherently disruptive impact on regimes, institutiones, social conventions and ideas everywhere which stand in the way of progress" (Torricke-Barton, ¶ 5).

There are also a number of online initiatives to support peace education and to provide opportuntities to connect people and to enable discussion on ways to promote peace and understanding between people. One such example is the Facebook project being led by the Persuasive Technology Lab at Stanford University which promotes the use of the social network

site to encourage dialogue between historically-hostile groups, such as Jews and Muslims, Turks and Greeks, by helping them to better understand the other's perspective and generate tolerance (Jones).

But the Internet also has the potential to promote hatred - a quick visit to some of the other pages available on this particular networking site is evidence of this. In fact, some argue that the Internet can do more damage than good, as people have the tendency to express themselves through the Internet in ways that they never would were they actually speaking to someone in person (Baggini, ¶ 11). The argument is also made that like-minded people congregate on the Net as they would anywhere else, therefore making the possibility of interaction with people from different cultures and backgrounds no more likely (Baggini, ¶ 23).

Clearly then, technologies such as computers and the Internet can be used in various ways and for a multitude of purposes. But this is also the case with weapons and technologies created specifically to wage war. From the end of the Second World War until the early 1990s, technology both created the threat of war and nations' reluctance to use it and so nuclear weapons were both a threat to, and a deterrent of, war; nuclear energy also provides an alternative to oil, and can therefore reduce conflicts that occur over this resource. All technologies can be used for helpful or harmful purposes depending on the intent of the user: guns can be used to attack or to defend; bombs can be used to start wars or to end them. The Internet, radios and other communications technologies, like weapons, can be used to promote peace or to destroy it.

It is therefore a simplification to say that any technology is either good or bad, or even neutral, since all technology has a purpose for which it is invented. But another way to evaluate the societal impact of a technology is to look at its "origins rather than consequences" as "there is an ongoing process of interaction between technology and society" (Martin, 538). Technology, in other words, does not exist within a vacuum, but instead both impacts and is impacted upon by those who use it, those who provide it, and where.

Conflict in the Democratic Republic of Congo

To look at the impact that modern technology has had on the Democratic Republic of Congo (DRC), we must also look at origins rather than just the consequences of technology. DRC provides an excellent example of the unintended consequences of a technology due to the process that enables that technology to exist. Most technologies, more basic than their function or whether they are intended for military or civilian use, require certain materials for their construction. These materials are often unmanufactured primary commodities, including minerals. The means by which these minerals are produced has a direct correlation to the impact that those technologies have on peace, and one that can be well-hidden from the end users of that technology.

The mining of resources in DRC to build some of the most commonly used technologies today results in a terrifying reality for many people of this African nation. Even as some claim that the Internet is worthy of a Nobel Prize nomination, Internet usage requires a computer which in turn requires a mineral called coltan. The mining of coltan in DRC and the circumstances it involves, unbeknownst to most end-users, is a direct cause of great suffering, and has helped to fuel conflict in DRC for over a decade.

DRC is one of the most resource-rich nations in the world, with stores of gold, diamonds, uranium, copper, oil, among others. It is estimated that the available wealth in DRC stands at around $24 trillion, giving it the potential to be one of the wealthiest countries in the world (Noury, 34). However, it is actually one of the poorest of the world's nations, with one of the lowest Gross Domestic Product ratings, and a Human Development Index of 168 out of 179 countries (UNDP).

These two facts, while contradictory, are not unrelated; resources do not always translate into wealth, especially for countries already plagued by instability. "The presence of primary commodity exports massively increases the risks of civil conflict. Specifically, other things equal, a country which is heavily dependent upon primary commodity exports, with a quarter of its national income coming from them, has a risk of conflict four times greater than one without primary commodity exports"(Collier, 5). This is in fact the situation in DRC, where resources have made the country attractive to looters who take advantage of the political situation and lack of governance to gain profit, creating suffering and instability for the inhabitants. "Politics and economics in the DRC have always been shaped by the exploitation of its abundant natural resources. Natural resource exploitation lay at the very foundation of the colonial state, generated much of the foreign economic interest in the colony, and shaped its links to foreign governments and global markets" (Nest, 17).

The Democratic Republic of Congo has not known stability since its inhabitants first encountered Arab slave traders in the 16th century. Following Belgium's arrival to the area in the late 1800s, King Leopold II claimed the country as his own personal colony. Under his control, an estimated 10 million Congolese were killed in the quest for ivory and rubber, and through

the slave trade (Mantz, 38). Independence, which was painfully won in the 1960s, led to a dictatorship under Joseph Mobutu, who then plundered his own country for almost thirty years.

The two successive presidents since then, Laurent Kabila and his son Joseph have continued the legacy along with the help of neighbouring countries, Rwanda and Uganda in particular. In 1994, following the Rwandan genocide, two million refugees fled Rwanda into DRC, including the perpetrators, thus destabilizing the region. This led, two years later, to Rwandan-backed Tutsi militias assisting Ugandan forces to overthrow the dictatorship of Mobutu and to install Laurent Kabila in government. Kabila, however, failing to comply with previous promises made to the Rwandese government, soon found himself under attack, and called on the governments and armies of neighbouring Zimbabwe, Namibia and Angola, prompting the worst conflict on African soil in history. Kabilia himself was assassinated by his bodyguards in 2001; his son Joseph has been president since his death.

Today, however, the wealth at question is one of the most valuable of the resources found in DRC - columbite-tantalite, otherwise known as coltan, which produces a powder that is very resistant to high temperatures when refined. Although most people will not have heard of this mineral, it is likely an integral part of their everyday lives, as it is contained in most mobile telephones and laptop computers in the form of capacitors. It is also found in stereos, video cassette recorders, video game consoles, medical devices and even in aerospace and automotive equipment. Its value comes from its "strength, high density and chemical properties" (Lalji, 35) and it "has made possible the reduction in size of many electronic devices as well as today's advanced wireless technology" (Noury, 34). Its value to the electronics industry is thus clear, and the market for coltan is enormous – 6.6 million points of tantalum (which comes from coltan) is used globally, sixty-percent of this being used in electronics (Essick, ¶ 14). DRC's

importance in the production of coltan is also apparent considering that eighty-percent of the world's supply is located in the northern and eastern regions of DRC (Tegera, 5).

It is these regions of DRC that continue to be mired in conflict seven years after the official end of the war that followed Mobutu's overthrow in 1996. This war raged until 2003, but continues to manifest itself especially in the east, fatalities since the beginning of the war having result in approximately five million deaths through violence, disease and starvation (Q&A:DR Congo Conflict, ¶ 2). There have been many perpetrators of the chaos that has enveloped DRC for over a decade, and all have been accused of profiting from the war through the trade in minerals and other natural resources. Various militias, of both Congolese and foreign origin, are involved in the trade of minerals from DRC and have decimated the northern and eastern region of the country through murder, rape, forced displacement of civilians, destruction of villages and decimation of farm land, and the spread of HIV. "Rebels target civilians in the surrounding villages near the border with Rwanda and Uganda and there have been reports of kidnapping, massacres and mass rapes, fuelled by the profits from minerals" (Fessy, ¶ 5). Rape is especially endemic to the areas in question; more than 500 civilians were raped in the east of the country by both Congolese and Rwandese soldiers during a period of weeks during the summer of 2010 (BBC, UN peacekeepers 'failed' DR Congo rape victims). Uncertainty and fear permeate this region, the protracted conflict and the atrocities committed by these militias having destroyed lives, homes and communities. Farmers have been driven from their lands, and as a result, agricultural production in these areas has decreased, adding food security and environmental damage to the list of problems (Essick, ¶ 4; Mantz, 46).

For those who work in the mines that produce the minerals, life is especially difficult. Most of the companies are no longer operational in this region because of the war. Therefore, it is the

local population who mine as agriculture is often no longer a viable option. Many of the people in the mines are children. In some areas, militias have taken over villages and made civilians their slaves in the mining of coltan (Mantz, 36) "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…into slave labour regimes to earn hard currency to finance their military operations (Mantz, 36). Mantz, who has travel to some of these villages, has witnessed this for himself, as have other journalists and writers who have ventured into some of these remote areas. For those who do manage to earn money by working in the mines, there is often the threat that the soldiers will steal it. Work in the mines is difficult and dangerous, but may provide the only source of income for the local people (Essick, ¶ 18-20).

The conflict in DRC lingers from a war that began largely because of ethnic divisions, but the resources in the region have been funded the war and given its perpetrators reason to continue: "While economic agendas became a prominent part of the conflict, they emerged as a function of war; war did not occur as a result of economic interests" (Nest, 31). Doubtless however, the war has created a situation that has allowed militias and rebels to profit from porous borders and lack of governance: "The conditions generated by the conflict have been responsible for one of the central features of the Congo War: the exploitation of primary commodities" (Nest, 43), which has enabled Congolese and foreign combatants "to sustain their respective war efforts in eastern DRC" (Montague, 107).

But the extraction and sale of resources is not simply a profitable side effect of the ongoing

conflict, and despite not being the impetus for the origins of the conflict, it has become a driving

force, as soldiers can profit more from continued conflict than from its resolution:

> "Compared to conflicts without great spoils, the conditions they create result in highly
> lucrative opportunities that give stakeholders more and greater incentives to maintain
> those conditions rather than to seek peace. Belligerents may consequently choose to
> "spoil" the peace by remaining armed, resisting demobilization, and continuing to use
> violence. This is because violence allows some belligerents to achieve their political goals
> and ensures their economic survival; for other belligerents, violence brings both political
> gains and, more than just survival, economic *richesses*" (Nest, 54).

This has been proven in the case of DRC and the foreign militias on its soil. Despite denial from

their governments, there is evidence that soldiers from Rwanda and Uganda have helped

generate huge revenues from the sale of coltan following their involvement in DRC since 1996:

"Uganda reported 2.5 tons of coltan exports a year before the conflict broke out in 1997. In

1999, the volume exploded to nearly 70 tons" (Essick, ¶ 8). Although Uganda's has said that its

involvement in the war was to protect its security, its forces were found 1000 km from their

own border, into DRC, and one of Uganda's main exports in the late 1990s was gold, even

though the country doesn't have its own gold reserves (Renton, 192). In addition, the increase in

demand for coltan coincided with the invasion and occupation of parts of DRC by Ugandan and

Rwandese militias; "Between 1990 and 1999, sales of tantalum capacitors used in the

electronics industry for cellular phones, pagers, PCs, and automotive electronics increased by

300 percent" (Montague, 105). Demand for coltan increased in the 1990s, reaching a peak in

2000, and although demand has since levelled off, it is still rising 10-20 percent a year (Lalji, 35),

making prolonged occupation of DRC quite profitable. The revenues then help to fund the

continuation of hostilities between the various militias and rebel groups, and the subjugation of

the local populations who live around the mines. The benefits of remaining across the DRC border are then very attractive, and contribute to the continuation of the conflict.

To make this activity worthwhile, there must be demand for those resources; the proliferation of computers and cell phones in Western countries, their increasingly disposable nature, and an escalating dependence on electronic gadgets, ensure that there is a ready market for the resources being taken from DRC. There are accusations that Western companies have also given DRC's neighbours reason to remain involved in DRC, encouraging their "economic" activities. "Western politicians knowingly encouraged Rwanda and Uganda in the looting of resources from the Congo. For example, throughout the period of greatest plunder in the late 1990s, which has been extensively documented, the British government was the main international donor to Rwanda and Uganda" (Renton, 193). This is despite the fact that these two countries have an international trade in resources that are not found within their own borders, indicating that they have been looted from DRC (Renton, 192-193). Furthermore, there are accusations that Rwanda and Uganda have worked hand-in-hand with western clients and companies to buy and sell Congolese coltan (Montague, 106).

Some companies and organizations do attempt to determine where coltan supplies have been mined before purchasing them. A number of electronics companies refuse to buy coltan that comes from the central region of Africa, purchasing instead from Australia. "Other companies, including American-based Kemet, the world's largest maker of tantalum capacitators, have specifically requested certification that the coltan they purchase is not from the Congo or bordering countries" (Laljit, 36). Research into fingerprinting tantalum has also been conducted by the Federal Institute for Geosciences in Germany (Marwaha, ¶ 23).

Even for those foreign companies who wish to know the source of the minerals and the circumstances under which they are produced, it is very difficult to determine from where the material originates. Once it is mined, it is purchased by middle-men (often working with rebels and militias) who then sell it to foreigners. They then sell it to buyers in Developed Countries who refine the ore (Mantz, 42). Also, since there are legitimate mining companies and practices in the region, the physical origin of the mineral does not guarantee that it has been mined illegally; "legitimate mining operations are frequently confused with illegal rebel operations, so the source of the coltan is usually uncertain. The coltan trading route from Central Africa to foreign markets includes many intermediaries along the way, and its exact route is often unknown" (Lalji, 35). There is also a lack of procedure or process for certifying coltan, such as has been implemented through the Kimberly Process for precious stones from Western African. Therefore, coltan from DRC "reaches the market unnoticed and unhindered" (Montague, 105-106).

Until now, however, the situation has been allowed to continue largely because many of those who could end the conflict have a vested interest in its continuation. The world's largest UN peacekeeping force is deployed in DRC – some 20,000 as of 2010 (Noury, 34) – and some members of its own force have been implicated in the illegal trade in minerals from DRC (Noury, 34; Plaut). Peace agreements have been in place since 2003, but "approximately 18,000 armed rebels remain in the North and South Kivu states, precisely where the majority of coltan in the Congo is mined" (Laljit, 36). Therefore, the fact that it is partly due to the huge demand for the product becomes difficult to question considering that "the high-tech industry's demand

for tantalum clearly has fueled an increase in coltan mining worldwide – including in the Congo region (Essick, ¶11).

Those in positions of authority in the DRC itself are not always ready to condemn this reality. Frail government structures and minimal application of the law, resulting from decades of war and instability, have weakened the ability of the Congolese government to act decisively and have made the spoils of war as attractive to politicians and civil servants as they are to foreign soldiers and governments.

A cycle of war and plunder that makes war both possible and profitable therefore continues, with a lack of authority or will to bring about its cessation. The conflict "has profoundly undermined already weak state institutions, as well as law and order more generally" (Nest, 54), and Congolese authorities themselves are complicit if not directly involved in the trade. As long as there are markets for the minerals, it is beneficial to militias, whether native to the country or not, to continue war, and therefore there are many actors for whom continuation of hostilities remains a profitable business. "The DRC government is probably unlikely to want, or even be able, to sanction commercials actors involved in the illegal exploitation of natural resources during the war" (Nest, 56).

Interviews with Congolese people working in and around the mines that produce these minerals are horrific. Accounts of rape, prostitution, forced confinement, forced labour by militias, domestic abuse fuelled by drugs and alcohol are the stories behind mobile phones and computers (Tegera). But these issues do not only impact the mining towns – sexual violence and insecurity are endemic in eastern Congo. The political and social consequences are felt all over the northern and eastern regions of DRC, mining now being both a cause and a result of the

violence, fear and instability that plagues this part of the country and impacts the entire DRC and its neighbours. Emmanuel Kataliko, Bishop of Bukavu, said in 1999 "Foreign powers, with the collaboration of some of our Congolese brothers, organise wars with the resources of our country. These resources, which should be used for our development, for the education of our children, to cure our illnesses, in short so that we can have a more decent human life, serve only to kill us" (Renton, 172).

Coltan is therefore the "blood diamond of the digital age" (Mantz, 36). The conflict in DRC "is regarded as the worst African emergency and the worst humanitarian calamity since World War II"(Lalji, 34) and it is what fuels a large proportion of the technology used on the planet. Therefore, the technologies of mass appeal and access at this time, which hold considerable promise for peaceable uses, help to fuel one of the longest and bloodiest conflicts of our age. Primarily, and as outlined above, the mining of minerals in DRC which are used to build widely-used communications technologies around the world has prolonged a war that has already taken five million lives and which continues to kill through malnutrition, lack of access to medicines and medical care, and through the spread of HIV. It provides soldiers and militias with the funds to buy more weapons, the incentive to use those weapons, and the complicity of the Congolese Government and western companies that profit from the sale of those resources.

The demand for these technologies certainly does not bring peace to those affected both directly and indirectly by the resources required to fabricate them. It also adds to the destabilisation of the entire region, as the conflict in eastern DRC continues to impact politics in eastern and central Africa. However, the situation is rarely reported on, and receives little attention: "Despite the mounting death toll, the country receives only a trickle of aid and even less media attention. Internationally, it is recognized that the war has produced a catastrophic

humanitarian crisis, yet rebel movements have been able to successfully sustain their war efforts by plundering and looting the economic wealth of the country's mineral-rich eastern region" (Montague, 103).

The impact that the demand for these technologies has on the Congolese people, demand that is driven by people who live in other countries, has to be recognized if the situation is to improve. Multinational companies and those who trade in minerals and other natural resources must realise the tremendously negative impact their activities have on civil society, especially in regions that are already volatile (Montague 115). To avoid the imposition of conflict and suffering, the trade of minerals in DRC needs to be addressed and steps taken: "With rising demand for coltan, and a lack of attention from Western governments and NGOs, there is an urgent need to put forward the case study of the coltan trade, examine its implications, and evaluate measures that can be taken to prevent further corruption and conflict" (Lalji, 35).

Conclusion

It is clear that technology alone is not enough to prevent conflict:

> "It takes a proper social framework for the means to be useful. It takes stable institutions for democratic conflict resolution, with laws and law enforcement. Property rights must be defended. Banks and insurance companies must be available for venture capital and for providing social security. It takes infrastructure and transportation systems. It takes ample supplies of fresh water and food. Above all, it takes healthy, happy and well-educated people with access to hospitals and sanitary systems, schools and universities" (Gerholm, 585).

Technology, including ICT technologies, can help achieve these things, but must be accompanied by education, political will and broad-based and grassroots support. Peace-building in DRC requires efforts and cooperation by all involved, including the Congolese government,

multinational corporations, international financial institutions, the United Nations and foreign governments (Laljit, 37). But it also requires awareness by consumers of the implications of their choices and the impact that they can have on those in poorer nations. People must demand that the ways in which we obtain our products be done in a humane and just manner so that the very tools used to fight for justice and peace for some do not result in suffering by others.

Modern information and communications technologies, while holding great promise through their ability to improve lives through education, in the promotion of peace and democracy and the building of an "international community", also have the ability to take education, community, peace, and democracy away from others, as evidenced in the case of DRC: "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" (Mantz, 42).

Does technology promote peace? The answer is both yes and no. But that means that it *can* promote peace and it is this potential that must be encouraged. This requires, however, good intention on the part of the user through education, supported by agencies and organisations that can help monitor the use of technology, such as the International Atomic Energy Agency (IAEA). Standards and regulations such as the Kimberly Process, although far from perfect, are also important in securing peace for those who live in unstable yet resource-rich regions. And despite obstacles in certifying minerals, the fact that fair trade practices are possible for cocoa and coffee exports provides evidence of the possibility of the same for coltan. Pressure from consumers of those goods has helped to fight for fair trade practices in these industries, often

through the dissemination of information through communications technologies. It is time for

those same technologies to be employed to make their very existence equitable and fair.