Roots Culture

Free Software Vibrations "inna Babylon"

ARMIN MEDOSCH

In this article I want to focus on free software as a culture. My first reason for doing so is to make it very clear that there is a difference between open source and free software, a difference that goes beyond the important distinction made by Richard Stallman.[1] His ideas have grown legs and now the notion of free software (with 'free' as in 'freedom') has been taken further in ways he could not have imagined. Second, I want to show that at least a specific part of the free software scene shows all the traits of a culture; this is understood by protagonists of the scene and is made explicit through the way they act. With software development rooted in culture, it becomes a discipline distinct from engineering, and is invested with social and cultural values.

Rasta Roots and the 'Root' in Computing

The first part of the title, 'Roots Culture', is designed to resonate with the hacker pride of being 'root' on a Unix system, and with Rastafarian reggae 'roots' culture. In a file system, root is the uppermost directory, the one from where all other sub-directories originate. In Unix-style operating systems (including GNU/Linux), 'root' is also the name of the super-user account, the user who has all rights in all modes and who can set up and administrate other accounts. Roots reggae is a specific type of reggae music with heavy bass lines and African rhythmical influences.

Roots reggae originated in Jamaica, and is closely associated with Rastafari. This is sometimes described as either a sect/religion, or a subculture, but neither of these definitions can fully do justice to the diversity of this phenomenon. Therefore it is better to follow Paul Gilroy who suggests that Rastafari be understood as a popular movement whose "language and symbols have been put to a broad and diverse use".[2] It originated in Jamaica in the 1930s, and took some inspiration from the black nationalism, Pan-Africanism and Ethiopianism of Marcus Garvey. Through Rastafari, the African Caribbean working class found a way of fermenting resistance to the continued legacy of colonialism, racism and capitalist exploitation. It is eclectic and culturally hybrid, drawing from a range of influences such as African drumming styles, African traditions in agriculture, food and social organisation,[3] and American Black music styles such as R&B and soul. The central trope of the Rastafari narrative is that the Rastas are the 12th tribe

of Judah, living in captivity in Babylon, and longing to go back to Africa, identified as a mythical Ethiopia.

Paul Gilroy (borrowing a phrase from Edward Said) describes Rastas as an "interpretive community". The ideas and stories of Rastafari "brought philosophical and historical meaning to individual and collective action".[4] Through the enormous success of reggae as a form of popular music, particularly the work of Bob Marley and the Wailers, Rastafari became popular throughout the world in the 1970s; now, many non-Jamaicans sport Rasta hairstyles and dreadlocks, and dedicate themselves to the music and the activity of *ganja* smoking. In the UK, versions of Rasta culture now span all ages and ethnicities;[5] it is probably, by consensus, the most popular subculture in Britain today. Aspects of it have been heavily commercialised and roots reggae has therefore been unfashionable for a while. It has, however, made a strong comeback recently. The reason for this can only be that it is more than a music style or a fashion (not everybody with dreadlocks is a Rasta and not every Rasta wears 'dreads'): it is a culture in a true and deep sense (the meaning of which I will come back to later). 'Roots' influences can now be found in hip-hop, jungle, drum & bass, 2Step and other forms of contemporary urban music.

Both notions, the 'roots' in computing and in Rastafari, are not to be understood in any literal or narrow meaning, but as points of association and affinity. Knotted together, the two narrations form a crucial potential point of departure for the radical social imaginary.[6] Neither Rastafari nor hacker cultures are without problems of their own. Rastafari, for instance, is a very male culture, where homophobia is rife and women suffer a subordinated role in the midst of a supposed liberation struggle.[7] I have chosen the Rastafari theme for a number of reasons. The main one is that it has developed a language of revolution which it uses to very effectively recount, judging from the massive reception it has got so far, stories about political resistance and the struggle for freedom, peace and justice. These accounts have resonated far beyond Jamaica and the urban African Caribbean communities in the US and Britain. Roots reggae, as music and as a liberatory mythmaking machine, has a huge influence in Africa and Latin America.

Rastafari lends itself to be adopted by other communities and cultures due to its eclectic and hybrid nature. The experience of diaspora, central to the Rastafari story, is shared by many people who feel displaced and uprooted. This is understood well by some of the musical protagonists of roots music, who encourage 'togetherness' of all people who feel alienated in the societies where they live. In the words of Humble Lion from the Aba Shanti Sound System from south London: "Ultimately, people who are like us, who hold similar attitudes, will gravitate towards us, because we are aiming for the same virtues that they are, and this creates a something a lot better than what society stands for. Right now, it's obvious that our societies are controlled by money, polarised, xenophobic. The major world powers back their puppet leaders and the media sanitises, separates 'spectators' from reality. […] I have to say that now it is not only the black youths who are suffering in this land, so to me, increasingly, the true inner meaning of Rasta is not concerned with colour".[8]

Hackers, young and old, have their own reasons to feel alienated in society, one of which is the misrepresentation of their creed in the media. Originally 'hacking' meant nothing

else but feeling impassioned about writing software to the extent of pursuing this interest sometimes outside the norms, which would not necessarily imply anything illegal. The original 'hackers' such as Richard Stallman were employees of research institutions like the Massachusetts Institute of Technology (MIT) anyway, so they could hardly be seen as being outside the state system. But during the 1980s, in the course of the boom in computer science research (sponsored by the military pursuing projects such as Strategic Missile Defense and Artificial Intelligence),[9] the mood in these research ivory towers, which had been fairly liberal in the 1970s, changed. Mavericks like Stallman left, and hackers outside the state-sanctioned system were increasingly perceived as a potential threat to national security.

From the mid-1980s onwards, secret services and other law enforcement agencies started their 'war against hacking', with a compliant mass media doing their best to stigmatise hackers as criminals, or even as terrorists.[10] With the mass adoption of the Internet in the 1990s, a new breed of hacker emerged, so-called 'script kiddies', who did not have to develop deep knowledge of computers because hacking tools had become relatively easily obtainable. Script kiddies, not considered 'real' hackers but instead called 'crackers', have developed an obsession with breaking into web servers, obtaining 'root' privileges and inscribing digital graffiti on the web server's homepage. This activity served as legitimation for the strengthening of the legal regime, and allowed centrally owned mass media to continue, in full force, their denouncement of computer subcultures in general. Welcome to Babylon!

Hacker Ethics

I do not want to enter into a discussion here of what 'true' hackers are, especially since the factional infighting between hackers sometimes rages over topics such as which 'free' version of BSD is the better or 'truer' one, which seems rather pointless to the non-initiated.[11] Nevertheless, a common theme can be identified that transcends internal schisms in the hacker community. Most hackers share an ethical code in relation to computers and networks. Central to this ethical code is that hackers do not disrupt the flow of information and do not destroy data. It is not my intention to idealise hackers as freedom fighters of the information age, but it must be said that their ethics stand in marked contrast to the behaviour of the state and certain industries who do their best to erect barriers, disrupt communication flows and enclose data by various means, including threats of breaking into the computers of users who participate in file-sharing networks. This hacker ethic has been a shared commitment to a 'live and let live principle'. It is an ethos that is born out of love for the craft of hacking and the desire to let as many people as possible benefit from the sources of knowledge. Hackers do not represent one homogenous community; they are split and divided into many subgroups, but are united in that for them hacking is more than just writing code. It is a way of life, it has its own politics and it has many characteristics of a culture. Hacker culture has developed its own ways of speaking, certain types of 'geek' humour, and even some sort of a dress code. Hackers regularly meet at conventions (some highly publicised, some more subterranean) with an atmosphere more resembling a picnic of a large family or a tribe than any sort of formal 'meeting'. From this point of view, there are similarities between hackers and Rastafari.

The Hijacking of Free Software

As Ur-hacker Richard Stallman makes clear whenever he speaks in public, there is not much difference between 'open source' and 'free' software in the way the software is developed technically. Most free and open source software packages are also protected by the same licence, the General Public Licence (GPL) developed by Stallman with the support of Columbia University law professor Eben Moglen. Yet, according to Stallman, there is a profound difference insofar that 'free' software is linked with a political concept of freedom centred on freedom of speech. The term 'open source' was introduced by a group of pro-business computer libertarians in direct opposition to this political position. Eric Raymond and others proposed the use of the term 'open source' to make the idea of releasing source code and developing software collaboratively more appealing to American IT investors. This move by the proponents of open source was fantastically successful. It opened the way for IPOs of Linux companies at the height of the new economy boom, and drew the attention of companies like Sun and IBM to the existence of open source as a potential antidote to the market dominance of Microsoft.

It is easy to see how open source lends itself to be adopted by businesses much more easily than free software. Open source gained the support of the industry and of many software developers who mainly want to be able to make a living from their programming skills. Many open source developers make it very clear that they see themselves as engineers and engineers only; that they have no interest in politics and are glad to leave that to the politicians.

Since the launch of the open source bandwagon, Richard Stallman has been on a kind of a mission to remind the world that free software is about 'free' as in free speech "and not free as in beer". He also keeps reminding us that the Linux kernel could not have been written without the GNU tools and libraries, and therefore it should always be called GNU/Linux. However, Stallman's style of oratory and his evangelical zeal do not appeal to everyone. The promotion of the type of freedom that is implied with free software needs support. It benefits from being linked to other social concepts of freedom.

The Whitewash:
Hegemonic Computer and Internet Discourse and the Denial of Difference

> *"Constructions of race in the form of mental images are much more than simple indexes of biological or cultural sameness. They are the constructs of the social imagination, mapped onto geographical regions and technological sites".*[12]

The predominant social imagination of computer science and the Internet is a whitewash. This whitewash is the product of an entanglement of historical developments, the creation of certain 'facts on the ground' and a hegemonic discourse led from the centres of Western power (which in my definition includes Japan). The starting point here is the development of Western rationality and science from the early Renaissance onwards, associated with heroes of the various scientific revolutions, such as Descartes, Leibnitz, Newton. Cartesianism, with its positing of an abstract space of reasoning through which

alone the divine rules of nature can be identified, must bear the brunt of the criticism.[13] As Donna Haraway has pointed out, the rise of rationalism and the scientific worldview had, from the very beginning, negative dialectics inscribed into it:

> "…I remember that anti-Semitism and misogyny intensified in the Renaissance and Scientific Revolution of early modern Europe, that racism and colonialism flourished in the travelling habits of the cosmopolitan Enlightenment, and that the intensified misery of billions of men and women seems organically rooted in the freedoms of transnational capitalism and technoscience".[14]

Computer science has its roots in the military-industrial complex of the Cold War era. The dominant social imagination was one of containment, of separating the world into zones of influence by the United States and the Soviet Union, divided by electronic fences and locked into each other by the threat of mutual annihilation. Early computer projects received huge funding increments when it was recognised that computers could play an indispensable role in air defence and 'smart' guided ballistic missile systems.[15] The cyborg discourse of Cold War think-tanks such as Rand Corporation and research centres like the MIT generated the imaginary signification of Artificial Intelligence, a brain without a body, a sentient being that is not born, but is constructed by scientists in the laboratory. It is easy to see how archaic religious ideas live on in this 'dream' of AI that conducts itself so rationally.[16] The computer brain has a godlike omni-science. With the Internet conceived in the same laboratories of the Western scientific elite, sponsored by Defense Advanced Projects Agency (DARPA), the AI brain grows nerves that will soon stretch around the globe and, via satellite, would gain a godlike viewpoint in space, from which earth looks like a little, fragile blue ball. Omni-science plus omni-presence equals omni-potency, but only just, only maybe, and mostly in the imagination of the protagonists of this 'vision'.

The Internet, based on Western communication protocols constructed by Western males, is imagined to be populated mostly by white and relatively affluent people. This was maybe the case in 1995, when approximately 20 million people used the Internet, but certainly does not match the true demography of the Net in 2005, with its users numbering more than 600 million, and the highest growth in numbers in countries such as China and India. The whitewashed mass media discourse continues to associate the Net with a Western and particularly American worldview and an ultra-libertarian, anti-socialist political programme. The ingrained assumption of a non-gendered, non-ethnically defined cyberspace automatically makes cyberspace 'white', a colour blindness that is inherently racist.

ACADEMIC TECHNO-TOPIA

> *"Bobby Reason was born weak from typhus fever and unable to crawl away from his body of infection. He spends his time passing voltage through the pathways of least resistance to help him amplify, copy, and replay sounds. Extending his ears to where his eyes used to be, he forms lenses to put in place of his imagination. Whilst doing so he manages to split light and holds the lower end of the spectrum*

(radiation) with special tools he forged out of the Industrial Revolution to replace his hands. And after all is done, he gets out the air-freshener to replace his nose".[17]

From the early to mid-1990s, the Internet spawned an elaborate theoretical discourse about the Net in print form, and to a large extent, on the Net as well. The more mainstream currents of this discourse hailed the Net as a force that would bring about a more democratic and egalitarian world. Unfortunately, again the Net was imagined as a homogenous zone, free of connotations of gender, race and class divisions.[18] The only distinction that was identified was the existence of a 'digital divide': the realisation that the promise of the Net could not be realised until all people had equal access to it. The debate around the digital divide was well intentioned, but catalysed the proliferation of another version of Western hegemonic thinking with its polarised rhetoric of 'access': there is the Net, based on open standards, egalitarian, global, democratic, hard to censor, and 'we' have to give 'those people' down in Africa or elsewhere access to it. This unilateral, US/Eurocentric version of Internet 'freedom' did not even attempt to imagine the possibility that the Net itself could become a more diverse cultural space, and that even its technical protocols might become 'mongrelised'. The schema of the Internet, narrated as the success story of Western rationality and the scientific worldview, did not allow such digressions.

Theoretical Internet discourse very early on embraced open standards, free software and open source. The principles embodied in the Internet Protocols and the Gnu General Public Licence (GPL) would guarantee freedom of expression and communication. The discourse produced by Internet intellectuals tended towards highlighting abstract principles enshrined in code. In doing so, the discourse, by default, prioritised its own inherited values of 500 years of book culture. American cyber-libertarians even went so far to describe the space of lived reality by the derogatory term 'meatspace'. The well-meaning left-liberal discourse about the Net found itself in the classic Cartesian trap of mind-body dualism.

The Internet-left adopted Free/Libre Open Source Software (FLOSS) as a potential saviour from the corporate world, yet by doing so they followed entrenched, existent patterns of thought. Too often, only the abstract qualities of FLOSS are highlighted: the 'viral' character of the GPL, the properties of the Net of being highly 'distributed', the 'meshed network topology' in wireless networking, the importance of 'copyleft principles'.[19] What gets much less consideration is that those principles and abstract values in and of themselves don't do anything at all without human agency, without being embedded in communities who have internalised the values contained in those acronyms. The proactive making and doing by humans, in other words 'work', is once more written out of the story. The desires and passions invested in the writing of programme code get little 'air time' in FLOSS discourse. In this sense a certain type of FLOSS discourse can be understood as another prolongation of the project of modernity, with its preference for abstract reasoning and the codification of knowledge. The values and norms of society are formulated as the Bill of Rights or as the Human Rights Charter of the United Nations, so-called "inalienable" and "universal" rights and freedoms, but which *de facto* exist mainly on a piece of paper that politicians like to quote in Sunday speeches, and which are quickly forgotten overnight.

The relationship between code as programme code and as an ethical or legal code, and the importance that it is assigned by Western societies, is a very broad topic that I cannot explore in detail here. I will however assert that, generally speaking, putting one's faith in abstract[20] truth only, one that has cut its ties with lived reality and become transcendent to society, implies the creation of a form of absolutism. The divine power of God returns through the back door into 'rational' discourse. Abstract, transcendent truth takes away the individual and collective freedom of people to make their own decisions and subjects them to the rule of a truth that is already given, independent of history and the situated-ness of being.[21]

If FLOSS discourse cuts itself off from the roots of lived culture, it empties itself of all meaning. The 'free' and 'libre' in FLOSS is not given once and for all by being laid down in the GPL; it is a freedom that needs to be constantly worked out and given new meanings by being connected to situations, to concrete social struggles. The content of this freedom cannot be understood in the abstract, it needs to be created in the actuality of sensual and bodily existence, which is, by the way, the only thing that really makes 'sense'.[22] By following the default patterns of Western rationality, academic FLOSS discourse risks generating a vacuous fiction, an idealisation that lacks body, guts, feelings, pain, joy and anything else that makes life worth living.

Culture and the Social Imaginary

The term 'culture' can subsume all those human activities that are not directly utilitarian, which do not serve, in a narrow way, the goal of material survival. Yet at the same time culture is an indispensable component of human life, without which communities or societies could not survive. Culture provides the cohesive element for social groups; it motivates the actions of individuals and groups.

I use the term motivation here not in a trivial sense, as when an athlete is asked by television sportscasters about what 'motivates' him or her. What I have in mind is closer to the German word *Leitmotif* that roughly translates as 'guiding idea'. But it would be wrong to imagine those 'motives' as something outside culture or social reality. They are at the centre of the social life of societies, anchoring it, but also giving it direction. This concept of motives is closely related to the concept of values. It would be wrong to say that something is 'based on' values, because values can be both implicit and explicit, internal and external. Here we cannot use architectural metaphors of foundation and superstructure. Culture is not the only, but clearly one of the most important forces, behind the creation of values and motivations, of 'making sense' and 'giving meaning' to our existence. Society, in a constant state of self-creation, develops social imaginary significations through cultural feedback loops. In this sense, culture is not just limited to cultural representations in various media forms, but is constantly realised in the actions and interactions of everyday life. Culture 'finds expression' in various ways, in how people dress, what they eat and how it is prepared, in social protocols and forms of behaviour. The social and cultural knowledge of a society is expressed in those forms, in both the patterns of behaviour of everyday life and in explicit cultural representations.

Unfortunately, Western society has developed a hierarchy of different forms of knowledge, with hard science at the top, social sciences somewhere in the middle and

culture *per se* at the bottom. The positivistic divide claims that what can be described in scientific language, logic, mathematics, theorems, is the only form of objective knowledge, whereas the rest is regarded as the soft underbelly, as a somehow lesser form of knowledge. Philosophers and historians of science have argued that the claims that science progresses only through rational methods and in logical steps are not true. Many other factors inform the conduct of scientific research and development: politics and the economy, cultural and sociological factors, funding and institutional structures, belief systems and tacit knowledge. Despite the well known works of authors such as Kuhn and Feyerabend, and later Latour and Haraway, and an ongoing investigation into what 'informs' science from many different viewpoints (anthropology, sociology, cultural studies, etc.), the results of techno-science are invariably presented as ideologically neutral and free of contingent forms of social knowledge.

Computer science, which is conventionally understood to be closer to engineering than to basic research, is presenting itself as a hard science. The conventional views about software development deny the link between software and culture as something that comes *before* the actual creation of the code. Yes, software is understood to facilitate the production of cultural representations and to influence culture by the tools that it makes available, but it is usually not seen to be a product of social imaginary significations.

I have tried to describe the true content of culture as a form of knowledge, as 'immaterial'. Nevertheless, culture is quite obviously also 'material' and has various economic aspects. Cultural values define which objects are desirable, what gets produced and what is left out. The production of cultural representations is of course a form of human labour and therefore always includes economic transactions, independent of the form of the exchange value, if it is based on money or other forms of exchange. The commodification of the production of culture in capitalist economies has been criticised by the Frankfurt School in the early 20th century. Now, at the beginning of the 21st century, this work, even if some of it is flawed,[23] gains heightened significance as the commodification of culture reaches unprecedented levels.

The culture industry has been re-branded as 'creative industry', and is seen by many governments of overdeveloped countries, particularly in Britain, as a central plank in government strategies for economic growth and urban development (i.e., gentrification). Problems are aggravated by the aggressive conduct of the copyright industries, and the power of media conglomerates who have become highly integrated and own production companies, distribution channels and advertising agencies. Each of these industries has become highly oligopolistic, even monopolistic, and their combined influence greatly controls what can be seen or heard, and how it is distributed. New borders have been created by various means such as copyright, patents or the gatekeeper functions of communication providers. The exchange and transmission of cultural knowledge is now in danger of being interrupted or seriously hampered by those powerful formations.[24] One could go even further into the darkness of these developments and predict a closure of the cultural production of social imaginary significations.

I have described two processes: one that excludes cultural knowledge from the official scientific body of knowledge; and one that encloses cultural knowledge in the products of

the military-entertainment complex, a.k.a the creative industries.[25] Through both, exclusion and enclosure, what could happen is a lockdown on the creation of new meanings, of new powerful significations that 'rock the world'. There are already strong signs of such a lockdown in the mass conformity that is promoted by the mass media, which could only be expected and has been going on for a long time.

It was disillusioning for many to see how the Internet has been tamed within a very short time span and risks becoming just another agent of conformity. The centralisation of Internet resources, whose content is created by its users, but whose surplus value is harvested with enormous financial gain by Google and others, plays into the hands of a further centralisation: web sites that are not ranked highly on Google appear to be peripheral; information which cannot be found easily on the symbolic battleground of the web appears to be marginal. However, I think that any lockdown can only be temporal and not total; that cultural production based on a more radical social imaginary will not cease but is currently operating at a reduced level. The combined totalities of government and large corporations, both increasingly using the same forms of bureaucratic rule and threatening to choke life out of the cities and the countryside, motivate powerful counter reactions. Many people find inspiration in the language of resistance created by African Caribbeans and African Americans and expressed in musical styles such as roots reggae, hip-hop and underground house.

Rasta Science

The Rastas have found their own way of criticising power structures, the class and knowledge systems of 'Babylon'. Rasta-inspired female dub poet Jean Breeze writes:

> Four hundred years from the plantation whip
> To the IMF grip
> Aid travels with a bomb
> Watch out
> Aid travels with a bomb
> They rob and exploit you of your own
> Then send it back as a foreign loan
> Interest is on it, regulations too
> They will also
> Decide your policy
> For you.[26]

Rejecting the language of the slavemaster, Rastas have created alternative linguistic reference systems based on Jamaican patois and Creole English. For instance, Rastas say 'overstanding' instead of 'understanding', because the latter would imply submission. The Internet, of course, becomes the 'Outernet', an interview an 'outerview'.[27]

Consistent in this critique of the West is the critique of the murderous potential of technoscience and of industrial scientific warfare in the interest of capital. Whereas some fans of Bob Marley drifted towards a hippie-esque type of environmentalism and roots

reggae lost its hegemonic grip around 1980-81 (Gilroy, 1986), the sharp edge of this critical spirit was carried on by dub poets, disc jockeys and 'toasters' working with mobile sound systems and on pirate radio.

The 'dub' style created in the early 1970s by King Tubby and Lee 'Scratch' Perry introduced a technological element into reggae music, keeping the 'roots', but working with echo, tapes, noises, reverb and other special effects. Music making became a 'science'[28]; in the 1980s this was reflected by the names of dub artists such as Mad Professor and The Scientist. Besides the critique of Western capitalist science as producer of weapons of mass destruction, a frequent theme during the nuclear arms race in the 1980s, dub artists created their own 'science', for instance the *African Arkology* of Lee 'Scratch' Perry:

> "I am the first scientist to mix the reggae and find out what the reggae really is".
> "The recording studio was my spaceship that was polluted by the dreadlocks in the moonlight".[29]

The culture of sound systems playing out in the open or at cultural centres (almost never in regular clubs) introduced another 'scientific' element into roots culture: the optimisation of a system of speakers, special effect boxes and amplifiers for the specific needs of roots reggae and dub. The effect of such systems can only be translated into English by a poet. Linton Kwesi Johnson wrote:

> Thunder from a bass drum soundin'
> Lightnin' from a trumpet and a organ
> Bass and rhythm and trumpet double up
> Keep up with drums for a deep pound searchin'
>
> Ridim of a tropical, electrical storm
> Cool doun to de base of struggle
> Flame ridim of historical yearnin'
> Flame ridim of de time of turnin'
> Measurin' de time for bombs and for burnin'[30]

Sound systems have allowed roots and dub reggae styles to survive in times when they were less popular. Reggae dances in the UK were stigmatised by the press as notoriously violent, so that either Thatcher's police shut down venues or the venues cancelled raves because they feared raids by the police. Sound system culture also highlights a number of other important aspects. Sound systems usually have a community that follows them wherever they play. The music played is often commercially not available, except on cheap cassettes or nowadays on home-burned CDs sold at the gigs. The DJ's play 'dub plates', specially cut vinyls that exist only in small numbers. The music can be heard best on the sound system and is not really for home consumption. By thus keeping the music rare, sound system events have aspects of cathartic rituals, an experience of love, strength and unity. Despite attempts to commercialise sound systems, this spirit is still very much alive

at the annual Notting Hill Carnival in London and other carnivals around the country, the flame kept burning by sound systems such as Aba Shanti. At this year's Carnival, a carnival of anniversaries (40 years of Notting Hill Carnival, 170 years of abolition of slavery), Aba Shanti showed that they have lost nothing of their political edge, rocking a crowd of thousands with thunderous bass rhythms, and lyrics about the war in Iraq.

The collective identification with roots culture leads also to another interesting phenomenon, the importance of the 'Riddim'. The riddim is the instrumental track of a record, stripped off the vocals. It is still normal today in Jamaica that certain riddims are especially popular at a certain time, so that often hundreds of interpreters record versions with their own lyrics on top of one of the popular riddims. This shows a direct relationship with the 'copyleft' principle in free software.

SOFTWARE AS CULTURE

> *"This software is about resistance inna Babylon world which tries to control more and more the way we communicate and share information and knowledge. This software is for all those who cannot afford to have the latest expensive hardware to speak out their words of consciousness and good will".*[31]

A number of artists/engineers have started to bring software development back into the cultural realm, and they are infusing culture into software. But 'they' are a very diverse collection of people and it would be wrong to categorise them as a movement or a group. I will focus on a few specific individuals and projects. As tempting as it always is for writers to extract abstract common properties from a social phenomenon, I will also try to control this impulse because I think it is much too early for any kind of a more systematic approach.

One of the earliest works in this area, to my knowledge, was carried out by a group called Mongrel, which was founded in 1996 in London. The group consists of Graham Harwood, Matsuko Yokokij, Matthew Fuller, Richard Pierre Davis and Mervin Jarman. Coming from different ethnic and cultural backgrounds (Irish-English, Japanese, West Indian), they choose to call themselves 'mongrel', a term that is highly loaded with resonances towards a more open racism when it is applied not to dogs but to humans. Their inquiry started with the realisation that software tools are not neutral but charged with social significations.

In their earlier work they focused on laying bare those significations. A re-engineered version of Photoshop would become a construction kit for ethnic identities; a spoof of a popular search engine would react very sensitively to certain search terms. If somebody was searching for "sex", they would be directed to a website which at first appeared like a genuine porn website but subsequently revealed itself as a work about the construction of gendered identities. Racist search terms such as 'Aryan' would lead to similar results, bringing up aggressive, but in a certain way also subtle, anti-racist web pages.

Mongrel never went the easy way of reproducing the clichés of Western educated liberalism. Their work attacked the 'tolerance' of the middle classes as much as anything else. The name is the programme. By calling themselves 'mongrels', they claim a distance

from the norms of polite society. The aggressive 'mongrelisation' of popular software programmes and search engines made race an issue at a time when the Internet hype was getting into full swing and everybody was meant to forget that such problems still existed, or made to believe that the Internet would somehow, magically, make them disappear. One particular work, mainly created by Mervin Jarman, put the spotlight on the death of Joy Gardner, a Jamaican woman, in police custody at Heathrow airport. The free flow of information was contrasted with border technologies, i.e., the techniques designed to control the influx of people. The investigation into the social content of software was carried further by group member Matthew Fuller who wrote a seminal essay about MS Word in which he showed how the software contains a flurry of social significations: assumptions about the usage people would make, what they would try to do, what kinds of people would want to use the software, etc. He revealed a deep universe of meanings inscribed into what was originally a 'text processing' software.

The Art of Listening

Mongrel later moved on from the applied critique of the social content of software to a more constructive approach: they started to write software from scratch. The social orientation of their work had led them to carry out workshops during which they tried to help young people from disadvantaged backgrounds to create their own digital representations. Doing this, they found out that no existing software provided a useful platform. The programmes were either too difficult to use, or they imposed a certain way of thinking that alienated the user. They first produced a software called 'Linker' that would allow people to put together a website full of multimedia content without having to go into the deep end of multimedia programming, or even learning HTML. But Linker, written in Macromedia Director, a proprietary software, turned out not to be the solution, merely a step towards it. Mongrel tried a radically new approach: listening to users in order to ascertain their needs. They used workshops to find out what people would want to do with and expect from such a software platform – people who had previously had relatively little exposure to digital technology and who came from a variety of backgrounds and age groups. At the same time, Mongrel taught themselves the skill of mastering the LAMP package (an acronym composed of the initials of various free softwares: the operating system Linux, the webserver Apache, the database MySQL and the scripting languages Perls, Python and HP). In a long, painstaking process they developed Nine9, an application sitting on a web server that provides a user-friendly interface for the creation of digital representations online.

Nine9 elegantly solves one of the core issues that plague many such projects: the issue of categorisation. With any server-side web application, there is always a database in the background. Computers are completely ignorant to the type of content that is stored on them. From texts, keywords can be extracted by some algorithms that can be used as meta-tags to indicate the nature of the text. But images, audio, video, don't offer this possibility. Generally the user, who uploads 'content' to the Net, is asked to categorise the content. This can be completely open, i.e., it is left up to the individual user to describe or categorise the content as he or she thinks fit; this often makes it difficult later to create a coherent and searchable database. The other option is that the creator of the database may

have already predefined the categories, and the content is to be uploaded within these. Mongrel had discovered that predefined categories usually don't work with their user group. Any system of categorisation, any taxonomy, contains so many cultural assumptions that people who don't share the same background find it hard to relate. Mongrel's solution was to leave the system completely open at the start, without any categorisation, and let the relations between different chunks of content on the server emerge slowly, through the usage. Graphically and conceptually, the system is an open and potentially (almost) infinite plane of nine-by-nine squares which can be squatted by individuals or groups and filled with content, linked beneath the surface by a sophisticated software that compares textual 'natural language' descriptions by users and tracks how people navigate this world.

SPECULATIVE SOFTWARE

"I'm in a constant state of trying to find wings that lust after the experience of transportation while being firmly rooted to the ground. I want to see people fly from present situations to other states of pleasure and pain. Out of the gutters and into the stratosphere of the imaginary".[32]

After launching Nine9 in 2002, and using it in many workshops, Graham Harwood moved on to write what he calls 'speculative software', programmes that are highly political from the very point of their conception. Each programme is like a thesis, a rendering visible of relations or truths that are normally hidden. One such software, Net Monster, sends out software search robots, a.k.a. 'spiders' or 'bots', that search the net for related combinations of two search terms (like 'Osama bin Laden' and 'George W. Bush'), download pictures and texts found through the search, and auto-assemble a picture collage out of this material. The results are aesthetically stunning, which is probably due to the fact that Harwood has always been a very good graphic artist and has now acquired considerable programming skills.

Rastaman Programmer

The art of listening has also been cultivated by Jaromil, a.k.a. Denis Rojo, a young Italian programmer with long dreadlocks, and the creator of the bootable Linux distribution Dyne:bolic. For a long time GNU/Linux was said to be very difficult to install, and this was a serious deterrent to its adoption by less technologically accomplished users. For quite a while now, there have existed graphical user interfaces (GUIs) for GNU/Linux or other Unix-style operating systems. Once the operating system is installed on a machine, the GUI enables users who had previously only worked with Macs or Microsoft Windows systems to use a machine running GNU/Linux intuitively, without encountering many problems or having to learn how to use the command shell. The concept of the bootable Linux distribution was created to allow non-programmers to use GNU/Linux, get a taste of it and maybe discover that it really is something for them. A boot CD is a complete operating system plus applications on a CD ROM. If the computer is started or restarted with the CD inside, it boots into Linux, automatically detecting the hardware configuration and initialising the right

drivers for sound and video card, and other components.

Jaromil gave the bootable Linux system a specific twist. His version, called Dyne:bolic, contains a lot of software he has written himself, that allow people to publish their own content on the Net. His applications, the most important ones being MuSe, FreeJ and Hascicam, put special emphasis on live multimedia content, live mixing and streaming of audio and video.

While the promise of the Internet revolution, that everybody can launch their own radio or TV station on the Net, might in principle be true, it is seriously impaired by the fact that most programmes that allow you to do so are proprietary. Here the standard litany about the perils of proprietary software could be spelled out again, but I will try to sum it up briefly. To obtain a licence to use proprietary software costs money. To enable live streaming, the source material of the software has to be encoded in the proprietary format. The codecs are proprietary, so the dissemination of material relies on the company strategy for future developments. It is almost as if the content is 'owned' by the software company, or at least is in danger of being enclosed by it. Because the source code is not released to the public, it might contain backdoors and Trojan functions. In short, multiple dependencies are created. Once a self-styled Net radio maker decides on a particular software, archives will be created in the associated format, which makes it harder to switch later. Also, because commercial software companies usually pay little tribute to the needs of users who are financially less privileged, they optimise their programmes for high-bandwidth connections and follow the rapid update cycles of the high-tech industries.

Jaromil's Dyne:bolic boot CD and the applications on it respond to these problems in various ways. Dyne:bolic is free software in the Stallman sense; everything on it is in accordance with the GPL. It runs on basically anything that has a CPU, doing particularly well on older computers. The source code is made available. MuSe, the main audio streaming tool, recognises the quality of a net connection and throttles the bit rate of data transmissions accordingly. Thus, on a high-bandwidth connection, it streams out top quality audio, while on a dodgy dial-up phone line connection, something, at least, is guaranteed to come out at the other end.

All these decisions did not come overnight and were not made automatically. Like Mongrel, Jaromil spends a lot of time listening to users or potential users. In 2002, he travelled to Palestine to find out what the people there might need or want. One of the results of this journey was that he implemented non-Latin font sets so that Dyne:bolic can be run using Arab, Chinese, Thai and many other character sets in the menus. His journey to Palestine was not out of character. Jaromil almost constantly travels. He takes his laptop with him, but he does not lead a life normally associated with software development. Sometimes he is offline for weeks, hanging out in Eastern Europe or southern Italy, socialising with squatters or music-making gipsies, sleeping on floors or outdoors. This maybe viewed as romantic, and it probably is, but the point is that it informs his practice. Jaromil writes:

"The roots of Rasta culture can be found in resistance to slavery. This software is not a business. This software is free as of speech and is one step in the struggle for Redemption and Freedom. This software is dedicated to the memory of Patrice Lumumba,

Marcus Garvey, Martin Luther King, Walter Rodney, Malcom X, Mumia Abu Jamal, Shaka Zulu, Steve Biko and all those who still resist to slavery, racism and oppression, who still fight imperialism and seek an alternative to the hegemony of capitalism in our world".[33]

Digital Culture Making Good on Its Promise

The vibrations of reggae music and a culture of resistance slowly begin to infiltrate the clean white space of hegemonic computer and Net discourse. The work that is done by free software developers such as Harwood/Mongrel, Jaromil and many others is in re-establishing the cultural roots of knowledge. This work is carried forward by a rebellious spirit, but in a very kind and civic way. No grand gestures, no big words, no sensationalism, no false promises, no shouting around, and therefore, by implication, not really having 'a career' and money to spend. This softly spoken rebellion is carried by value systems that are non-traditional, not imposed from above, non-ideological. As Raqs Media Collective put it quite beautifully, one of the major aspects of free software culture is that people 'take care', they nurse code collectively, bring software development projects to fruition by tending towards shared code that is almost like a poem, a writing of an *Odyssey* in software.[34] People involved in large free software projects don't share code because the GPL forces them to do so, but because they want to do it. This investment, however it might be motivated, mongrelises technologies and connects emotion and passion with the 'cold' logic of computers.

The developments that are being made are not coming out of some mysterious, anonymous techno-scientific progress but are based on conscious choices made by users. They develop something that they might want to use themselves, or that they see as an enriching addition to what exists. The decision what to do, in which area to make an investment, is a crucial one.

> *"I'm not sure I choose a project to code/maintain - it rather chooses me - I talk to the bloke who's fixing my boiler who's life is run by computer timings or I talk to my mum who's worried by too many phone calls trying to sell her things - I see stuff - gaps in my imagination or ability to think articulately about the experience of information and guess other people feel that as well..."*[35]

There are other significant projects under way in many places. One of them is the digital signal processing platform Pure Data, a software with a graphical programming interface used by many artists. Each programme can be stored as a 'batch' and reused by others. Real communities of users institute themselves around such projects. Their choices are expressions of cultural values. But those values are not really abstract or immaterial. They are embedded in the lived reality of the people who are involved. And so is the technology that they create. The cultural vibe of the group gives the development its meaning, its significance. Similar things could be said about individuals and groups developing free networks. For instance, at a place called c-base in Berlin, dozens of people meet each Wednesday to build antennas, optimise routing protocols or discuss strategies for connecting housing blocks and city boroughs. The place is alive with activity because it provides a sense of belonging, of identity, of direction. Work is mixed with pleasure and fun.

Digital culture is full of promises of revolutions, but usually the content of these revolutions is not specified. Discovering the roots of their cultures can help free software developers discover new meanings in the 'free' of free software, and engage with society through their work, and not just with the abstract reality of code. The language of revolution, of roots reggae and dub science, is surely not the only possible inspiration but can serve as an example for many other 'roots' still to be discovered.

NOTES

1. "'Free software' is a matter of liberty, not price". http://www.gnu.org/philosophy/free-sw.html
2. Gilroy, Paul. *There Ain't No Black in the Union Jack* (Routledge, 1997, London) p. 251.
3. African ways of living were kept alive in Jamaica by the Maroons, people who escaped from the slave plantations and survived under harsh conditions in the hills in an agricultural subsistence economy based on collective land ownership. Like the Maroons, religious Rastas are vegetarians and cultivate the smoking of *ganja* – or the herb of God – as a religious practice.
4. Gilroy, p. 251.
5. For instance, a few years ago a Raggastani movement emerged, young Asians identifying themselves as Rastas.
6. I use the term radical social imaginary in the sense of Cornelius Castoriadis. The term is quite central to his philosophy. It can be defined as the source of thoughts and ideas that society has of certain things. Used in this sense, the 'imaginary' is more than what we conventionally associate with 'imagination'. It overlaps to some degree with the collective subconscious but is not identical with it. The understanding of the term also depends heavily on Castoriadis' understanding of the 'social' and of history. He writes: "History is creation: the creation of total forms of human life. Social-historical forms are not 'determined' by natural or historical 'laws'. Society is self-creation. 'That which' creates society and history is the instituting society, as opposed to the instituted society. The instituting society is the social imaginary in the radical sense. The self-institution of society is the creation of a human world: of 'things', 'reality', language, norms, values, ways of life and death, objects for which we live and objects for which we die…" In other words, the social imaginary significations are what hold a society together. The social imaginary is the source, or as Castoriadis would say, the magma of the creation of meaning/significations/objectives. A 'radical social imaginary' is then, (and this is my interpretation) a source of new significations which overturn the already existing 'instituted' society. Cornelius Castoriadis, "The Greek Polis and the Creation of Democracy". In *Castoriadis Reader*, (ed.) David Ames Curtis (London, 1997) p. 269.
7. See for instance, *Rastafari Women: Subordination in the Midst of Liberation Theology* by Obiagele Lake (Carolina Academic Press, 1998, Durham).
8. Humble Lion in an interview with the Get Underground online magazine http://www.getunderground.com/underground/features/article.cfm?Article_ID=785
9. I am not claiming here that all AI research in the 1980s was sponsored by the military but that AI-related research in the US was given a second boost, after its original heyday in the 1950s and 1960s, through Reagan's Star Wars programme. See Paul N. Edwards, *The Closed World: Computers And The Politics Of Discourse in Cold-War America* (MIT Press, 1996, Cambridge).
10. See the book *Underground* about the 'war against hacking' in its early stages; *Underground* is published

online: http://www.underground-book.com/

11. A more in-depth account of the differences between 'ethical' or 'real' hackers, crackers and 'script kiddies' can be found in Medosch, Armin and Janko Röttgers (eds.), *Netzpiraten, Die Kultur des Elektronischen Verbrechens* (Heise, 2001, Hanover).
12. Graham Harwood, "Ethnical Bleaching". See http://www.scotoma.org/notes/index.cgi?EthnicBleaching, last accessed 24/09/2004.
13. I would be careful not to blame Descartes for Cartesianism, just as Marx cannot be blamed for Marxism. His writing is more original and entertaining than the school of thought he has initiated. See for instance Descartes' tract on light in Le Monde ou Traité de la Lumière (Akademie Verlag, 1989, Berlin).
14. Donna Haraway. *Modest-Witness, Second-Millennium: FemaleMan Meets OncoMouse: Feminism and Technoscience* (Routledge, 1997, London) pp. 2-3.
15. Edwards, Paul N. *Closed Worlds* (MIT Press, 1996, Boston/London).
16. See for instance Richard Barbrook's polemical "The Sacred Cyborg", in *Telepolis* (1996); http://www.heise.de/tp/english/special/vag/6063/1.html; downloaded 24/09/2004. For a proper critique of the claims of 'strong' AI, see Roger Penrose's *The Emperor's New Mind* (Oxford University Press, 1989).
17. Graham Harwood, email to the author, 31/08/2004.
18. It must be noted that there exist serious pockets of resistance to this mainstream version of Internet discourse, from the Marxist discourse of Arthur and Marie-Louise Kroker in their online magazine CTheory, to the publications of the Sarai group from Delhi, the Sarai Readers, and some of the writings published on mailing lists like Nettime. Afro-Futurism, Cyberfeminism and a whole school of writers inspired by Donna Haraway create a growing body of work that corrects the colour-blind Western-centric vision of the Net.
19. Admittedly I have sometimes said things that sounded pretty similar to mainstream FLOSS discourse. See for instance the article "Piratology" in DIVE, edited by <Kingdom of Piracy> and produced by FACT, London/Liverpool, 2004; or the article "The Construction of the Network Commons", Ars Electronica Catalogue, Linz, 2004.
20. I am not against abstractions *per se*; abstractions can be meaningful, useful and beautiful, like some abstract art or minimalistic electronic music. I am only speaking against an abstract absolutism.
21. See in this regard the remarks made by Cornelius Castoriadis in "Culture in a Democratic Society", *Castoriadis Reader*, pp. 338-48.
22. See for instance Maurice Merleau-Ponty's *The Phenomenology of Perception* (1945), which asserts that perception cannot be separated into a merely mechanical receptive organ (e.g., the eye), a transmitter (nerves), and an information processing unit (the brain). Artificial Intelligence had to learn this the hard way through 50 years of research conducted after the publication of Merleau-Ponty's book..
23. I am referring particularly to Adorno's wholesale dismissal of all products of the culture industry, based on his preference for high culture. The significance or quality of a cultural representation is not necessarily determined by the economic circumstances of its production.
24. I am keeping the critique of this process short because I assume that in the year 2004 the various frontlines of this struggle, e.g., the music industry v. file-sharing, proprietary v. free software and the role of patents etc., are highly publicised and now common knowledge.
25. The absurd dimensions of this effort to enclose popular cultural knowledge is best illustrated by the attempt of some US lawmakers to apply patent laws to fairy tales, so that grandmothers could not narrate these stories to children without obtaining a licence from Disney.

26. "Aid", by Jean Breeze. See
    http://www.nald.ca/fulltext/caribb/page63.htm.
    http://www.nald.ca/fulltext/caribb/page63.htm; downloaded 28/08/2004.
27. There is a growing body of work on the Rasta use of language in cultural studies and English literature studies.
28. Erik Davis compared the experience of aural 'dub space' to William Gibson's 'cyberspace', and referred to acoustical space as especially relevant for the "organization of subjectivity and hence for the organization of collectives", in his lecture "Acoustic Cyberspace" (1997); http://www.techgnosis.com/acoustic.html
29. Lee 'Scratch' Perry; on http://www.upsetter.net/scratch/words/index.html
30. From "Reggae Sound" by Linton Kwesi Johnson. See
    http://hjem.get2net.dk/sbn/lkj/reggae_sound.txt
31. Jaromil, a.k.a Denis Rojo, Dyne:bolic software documentation. See
    http://dyne.org/~jaromil/dynebolic-new-man/html/dynebolic-x44.en.html
32. Graham Harwood, email to the author, 31/08/2004.
33. Jaromil, Dyne:bolic manual, http://dynebolic.org/manual; downloaded 24/09/2004.
34. "Value and Its Other in Electronic Culture: Slave Ships and Pirate Galleons" by Raqs Media Collective (2003). In "DIVE", a Kingdom of Piracy project, produced by FACT (Liverpool), supported by virtualmediacentre.net and Culture 2000.
35. Graham Harwood, email to the author, 31/08/2004.