Your Machines: Your Culture
Simon Yuill

YOUR MACHINES is a series of workshops and discussions introducing FOSS and its relevance to artists' practice. The first of these took place during the Machinista festival and others will come later this year. FOSS stands for Free Open Source Software. Sometimes it is also known as FLOSS, where the "L" stands for *Libre*, inserted to emphasize the notion of "free" in its political and ethical, rather than economic sense. As Richard Stallman, one of its early proponents, puts it, it's "free as in free speech". The vast majority of FOSS technology, however, is available without cost and this in itself makes it alluring for artists, media activists and non-profit groups as a viable means of providing access to software tools. Of course, you can always go down to the Barras and pick up a CD of commercial software at "competitively" reduced prices but there is more to FOSS than just saving pennies. It is much more an attitude about how software should be produced, distributed and used. Aspects of this attitude have relevance beyond software itself and, as many are beginning to realise, may have particular significance for artists wishing to work in a more autonomous way and trying to gain more control over the circumstances in which they work and how their work gets out into the wider world.

FOSS has been gathering momentum within the programming world over the past decades but many of its principles and arguments are now spilling out into other sectors such as biotechnology, education and the arts. The reason for this is that FOSS poses one of the most significant challenges to prevailing models of production and distribution, in particular those of Intellectual Property and the commodification of knowledge.

At a basic level, FOSS emerged out of the principles that the best software is made by sharing the knowledge of many programmers and that programming code operates more like a form of vernacular language—changing and evolving through daily use—rather than as a series of mechanical components or hermetic science. The simple pragmatics of this are: if someone using a piece of software developed by another person comes across a bug in it, or realises that it could benefit from additional features, given access to the code from which it is produced they can make the necessary changes and pass these benefits onto others. Corporate software, such as that produced by Microsoft, prevents such access to the code, leaving users dependent on what the company decides is best. Corporate software adopts a paternalistic attitude towards its users whereas FOSS is more communitarian, a folk science which emphasises the collective autonomy of the users. FOSS recognises that software is an inherently social medium (think of just how much email and texting play a part in our contemporary social lives) and that it is best created through a social process and, indeed, constitutes a form of social practice in its own right. One area where this dimension is brought to life is in the numerous online discussion forums that provide help and assistance to newcomers and experienced users alike. This is contrary to the logic of the intellectual property market which only sees strength in restricting and hiding knowledge rather than sharing it.

During the seventies, as computer science shifted from the University labs, where sharing knowledge was the norm, into the commercial sector, Stallman noticed that commercial software companies were actively blocking this sharing of knowledge through copyrighting code and placing their employees under non-disclosure agreements. Stallman's response was to introduce, in opposition to copy*right*, the concept of copy*left*. What makes FOSS work is a thing called the GNU General Public License (GPL for short). This is a legal document that programmers distribute with their code. It is similar to the licensing agreements that you have to click on "I accept" for when you load commercial software on your computer. Unlike the commercial licenses, which prevent you from installing multiple copies of the software or passing it on to others, the GPL encourages the distribution of the code:

"The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. [...] Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software, that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

The GPL does not preclude the possibility of charging for services in the production and distribution of software. It recognises that costs may be involved in this, but what it ensures is that the software is not exclusively commodified. As Stallman points out, software is not just code, it is also made from ideas, and even comparatively simple programs often combine a broad range of ideas and concepts in their construction. Exclusive copyright measures, and intellectual property patents, undermine this and as a result we get worse software. Given how much of the world is managed through software systems these days, the consequence of this is we also end up with a world that runs less effectively."

Extract from the GPL

Amongst some of the major innovations and success of the FOSS movement have been things like "GNU/Linux"—a free operating system that the vast majority of websites now run from, "CVS"—a means of co-ordinating software development across the internet and "wikis"—a form of open collaborative web-site infrastructure. Partly through these, the FOSS ethos has spread beyond programming, spawning developments such as "open content", or "open knowledge", and "cultural commons". These practices are developing ways in which knowledge dissemination and cultural production may be supported through similar structures to FOSS. As individuals from farmers to high level academics are realising, the logic of the intellectual property market is harmful on many levels. Absurd situations such as patents being applied to traditional crop seeds, as Monsanto and others have been doing, are resulting in traditional farming knowledge being "privatised", and farmers being placed in licensing straight-jackets which are harmful to those in both the developing and developed nations. Academic researchers are finding that the push to patent and copyright their work that has come from the commercialisation of university research is hampering rather than supporting their work.

But it's not only the issue of exchange of information that FOSS addresses, it also provides access to different possibilities of representing and constructing information. The interfaces through which you read a word document, browse the web, manipulate sound and image files are all essentially metaphorical models which structure what information you can access and how you can manipulate it. The idea of a "desktop" as your main interface is also such a metaphor deriving from computing's close links to office culture and the emphasis upon the computer as a work tool rather than a plaything. This extends deeper than merely surface dressing, however, right down into the ways in which information is structured and filtered in codes and data systems. With proprietary software, those metaphors are always chosen for you by someone else and you have to work within the paradigms such companies consider appropriate to the tasks you wish to do. With FOSS there is the possibility to adopt and change those metaphors, often both at the surface level and at the deeper level, and of course, also to grow your own. In place of an homogenised digital monoculture FOSS encourages diverse vernaculars of multiple digital cultures. Whilst this might raise the fear of a digital Tower of Babel, FOSS in fact, through its central emphasis upon exchange, has also fostered a culture in which the formats for information exchange are openly standardised and published. Documents produced through FOSS technologies are generally far more easy to transfer between different softwares and systems than proprietary ones.

The "cultural commons" is an extension of FOSS principles into a broader cultural paradigm. It recognises that many areas of cultural practice are under similar threats from the logic of Intellectual Property. It adopts the idea of the "common land", land set aside from private ownership for the use of the community, and makes the claim that we must ensure similar such common rights to cultural produce, rights which were once widespread but now with the expansion of Intellectual Property market are swiftly vanishing. "Creative Commons" is an organisation which has been set up to support cultural producers through adapting the principles of the GPL to other media and practices.

Stallman is a bit of an old hippy. He has long unkempt hair, frequently goes around barefoot and is often pictured playing a wooden flute alongside his computers. Like the faint smell of patchuoli oil in an unwashed kaftan, there is an aroma of hippy ethos imbuing FOSS. As Francis McKee has pointed out, there is much in common between aspects of the FOSS movement and the anti-capitalist activities of groups such as the Diggers. He also draws comparison to the Grateful Dead's practice of encouraging their fans to make their own tape recordings of their concerts. But FOSS emerged in the late 1970's and there is also a great deal of the punk DIY ethic at play here too. The front cover of the first issue of Sniffin' Glu fanzine depicted the diagrams for three guitar chords accompanied by the words: "learn these, now form your own band". This carried over into the development of self-publishing and distribution networks, merging with the anarchist press in many cases, such as groups like Crass facilitated. The GPL is, in many ways, a programmer's equivalent to the "PAY NO MORE THAN 1.00 FOR THIS RECORD" that many bands printed on their record sleeves.

Attend any FOSS developers convention, or scan a selection of FOSS sites on the web, however, and you will see that it is not just old hippies and and angry anarchists who are supporting it. Apple's new operating system, OS X, is built on top of FOSS technologies and you can run just about any FOSS application on it. IBM are also steadily pushing the FOSS operating system GNU/Linux in place of Microsoft. This has raised a mixture of alarm and celebration amongst FOSS communities depending on how they view the involvement of big business. This is a big area of debate within the FOSS world, but one of the main reasons big companies like Apple and IBM are adopting FOSS is simply because the software works and it works extremely well. In India, China, Mexico, Brazil, and now many European countries, FOSS technologies are also being adopted by governments and major institutions. In a world in which governments are largely managed through IT systems, a government run on Microsoft is, in some ways, a government run by Microsoft, choosing FOSS technologies in this context not only prevents vast sums of public money going into the hands of a single private corporation but also raises many issues around the relationships between governance and private business. As the pro-FOSS lawyer Lawrence Lessig has argued, Open Source code is inherently democratic, it maintains the knowledge of how things work in the public domain. Whether the adoption of FOSS in these sectors will lead to more fundamental changes or be co-opted back into restrictive practices remains to be seen, but we are currently in a situation where a sizable crack has been made into the realms of proprietary-based governance.

The first two YOUR MACHINES events were a discussion, held at Mono Cafe, and a workshop on wireless networks at the CCA. The discussion included three speakers: Bob Kerr from the EdLUG (Edinburgh Linux Users Group), James Wallbank from Lowtech in Sheffield, and Lawrence Liang, a lawyer from the Alternative Law Forum in Bangalore. The wireless workshop was presented by members of the group TAKE2030 who had performed at Machinista.

Bob Kerr is part of the Edinburgh Linux Users Group (EdLUG). Like many such groups they provide local voluntary support for people interested in using free software. They are also increasingly active in promoting

free software usage particularly in public sector institutions. IT support has been one of the main areas where the Blairite public-private initiative has led to public money going into the profits of private enterprise. Free software is one way of reversing this abuse of public funding. Bob has recently persuaded the libraries across Scotland to lend free software cd-roms, thereby enabling people without broadband or internet access a way of obtaining the software at no cost. He has also begun a scheme of donating CD copiers to schools so that they may run off their own copies of software for pupils to use at home. During his talk he handed out copies of these cds which have "OpenOffice" on them. OpenOffice is a set of free software applications providing word processing, management and accountancy packages. It runs on GNU/Linux, Windows and OS X. It provides a viable, and free, alternative to Microsoft's "Office" applications. It is particularly suitable for small-scale non-profit groups who simply can't afford the cost of commercial software licenses, as well as schools wanting to provide software to their students so that everyone can have equal access to the tools to learn and work with. Thanks to the efforts of groups across the world contributing to it, OpenOffice also provides far superior international language support to any commercial text editor, ranging from Farsi to Gaelic.

James Wallbank spoke about the history and ideas behind Lowtech. Lowtech began life as an artist-run project utilising unwanted computers. Following the success of this (over 300 computers were donated in a space of two weeks), Lowtech evolved into a free public access media lab, which is now one of the longest running and most heavily used in the UK. The lab runs entirely on FOSS technology, using GNU/Linux on all its machines. Lowtech have also been involved in setting up similar no-cost labs for educational and community projects in Sheffield, where they are based. Their current project, "Grow your own media lab", aims to make the knowledge that has been gained from this success to be available to others.

Access to Information Technologies is a major issue in developing countries. Lawrence Liang spoke about the perspective on Free Software and Open Source from India. He pointed out that, whereas software piracy was seen as an "illegal" practice in the West, it played a significant role in enabling developing countries to compete with the frequently monopolised market policies of the Western corporations. To most people in India today "free software" means Microsoft because the only way people can get access to computing is through pirated software. Lawrence showed how the current situation regarding software should be understood in relation to the recent past history of the music industry in India. Prior to the 1980's, the music market was almost entirely monopolised by HMV who had gained this position during the colonial era. HMV's marketing policies had led to an homogenisation of Indian music. With the availability of cheap tape-to-tape copying in the 1980's, however, small, local music distributors began to emerge. They were able to get a foothold in the market through initially pirating the mainstream music produced by HMV. The profits from this, however, were able to feed into publishing more locally orientated music. This eventually toppled HMV's monopolisation of the market and enabled a more homegrown musical culture to be available to the public.

The current situation with software should be seen in a similar light. The widespread dominance of Microsoft systems within the business world means that, at present, smaller companies can only enter this arena through the use of pirate software. Lawrence's final argument was that, whilst he believed that the principles of Free Software and a digital "cultural commons" were definitely the right way forward, they were currently shaped by a purely Western model of authorship and cultural production. For these models to have significance globally they must also incorporate models of authorship and cultural production from other traditions and contexts. In many developing countries, what is stigmatised as "piracy" is often the only viable means of developing local cultural production and until this is properly appreciated, the discourse of a "cultural commons" will be inadequate to the needs of these countries.

One of the key areas of software and the use of computer systems to support social structures are networks.

Wireless networking (also known as wi-fi) utilises an area of radio bandwidth that has been made available for public use. At present this is a relatively unregulated sector. One of its advantages is that it enables independent broadband network connections to be set up at little cost. This has been taken up by groups trying to establish free, or lo-cost, internet access for communities in both urban and rural contexts for whom telecoms-based broadband is limited or expensive, or simply where people want to make access to information as free as possible. Sizeable "freenetwork" movements are active in cities such as London and Berlin, but there is growing support for them in areas such as the Western Isles and freenetwork groups exist in Glasgow and Edinburgh.

In TAKE2030's wireless workshop, Ilze Black and Shu Lea Chang presented a talk on the development of the freenetwork movement and the way in which their performance projects were trying to promote awareness of it. In the second half of the workshop Alexei Blinov explained the technology which enabled wireless networks and how simple some of this could be to build. He then went on to show the participants how to build their own antenna using the precut metal parts and some basic electrical connector components. Everyone made their own antenna, some of which were capable of producing quite strong signals. Participants in this workshop included individuals from the Glasgow freenetwork group as well as community activists from Edinburgh. People were able to take the working antenna away with them and some are now being put to use in setting up open wireless nodes.

Future workshops will provide hands-on tuition in audio and video editing with free software as well online audio-video webcast systems and tools for making interactive installation and performance works.

One of the main off-shoots from the workshop has been the establishing of contacts between the artist community in Glasgow with the Linux and community-activist groups. The Glasgow artist-run space, the Chateau, are currently setting up a medialab and open wireless node with the assistance of the Glasgow Linux community. The same people have also been assisting the Glasgow Autonomous Project set up computer facilities at their drop-in centre on Albion Street. In both cases the facilities are being equipped with recycled computer hardware, effectively meaning both groups are able to provide public access facilities for less than more established institutions spend on buying a single computer. La Chateau will be the first artist-run space to provide broadband internet access for free, and through its wireless node, make that available for others.

As the various examples outlined above demonstrate, FOSS is very much about viewing the development of technology in terms of its social and cultural contexts, and very much about how they may be supported by it. It recognises that collaborative rather than competitive practice is ultimately more effective. It also demonstrates that such principles can and do work at a practical level.

There are many ways in which FOSS is significant to artists. At one level there is the issue of tools. FOSS can provide free and powerful tools useful to a whole range of activities from producing software art, animation, audio and video work to managing your accounts and writing applications. There are specialised distributions of GNU/Linux, such as Dyne-bolic, which come ready packaged with all the tools you need. You can even run the system straight from a cdrom without having to install it over your existing operating system, enabling you to experiment with FOSS tools whilst still holding onto your old commercial software. The FOSS approach is also of benefit to artist-run groups who can cheaply equip their offices and put more of their funding income towards making and supporting art rather than managerial costs. Within arts education, if more courses teaching media-based practice were to switch to FOSS systems, their students would have access to the same software that they learn with, and be able to leave college and continue using it. Similarly, galleries running media labs could save money on license costs and put it towards the much more valuable costs of human staffing—which in turn could marginally boost an important area of income for many artists doing teaching and gallery admin.

But there are other ways in which FOSS may have benefit to artists which are less to do with the technology and more to do with working practice. One of the main achievements of the GPL is that it has enabled those who manually produce code to have control over its future use and distribution and it has sought to do this in a way that feeds benefit back to others who do similar work. The internet has provided a means of distribution that cuts out the need for marketing and management middlemen and FOSS projects generally disseminate their output more in a form of dialogue between users and developers than through marketing mechanisms. Many artists working with the internet and software art have similarly been very successful in side-stepping much of the institutional hierarchy of the artworld. Whereas the new media scene of the 1980's and '90's was heavily dominated by big institutions and corporate sponsorship, there is now a very vibrant artist-led framework within which many artists produce and distribute their work. Characteristic of this are festivals such as READ_ME, a software art festival in which those who submit define the main themes and content of the festival rather than a group of curators imposing their own criteria and definitions. This scene has developed a strong symbiosis with FOSS, with artists developing their own tools and supporting FOSS projects. Similarly within the music and audio arts scene, many artists now distribute their work online and the internet has enabled small-scale music publishers to flourish.

As Francis McKee has pointed out there are many parallels with the attitudes of FOSS developers and contemporary artists, whose main motivation is not success within the art market but rather the realisation of personal projects and interests within the context of a creative community. Artist-run spaces like the Switchspace and la Chateau have been particularly good at enabling this. We are currently facing a window of opportunity, Francis believes, in which artists could take the lead in developing and changing the systems of distribution and presentation through which their work reaches its audiences. He has initiated several small-scale projects exploring this, some, like RandomState and Agile Process, utilising new media platforms, others, like Sue Tompkins' "Country Grammar" tape, making use of older media. Given the current turn by the Scottish Executive towards commercialisation of the arts, forcing it into a "creative industries" paradigm in which we will see more public funding and public spaces going into private enterprise and management, the arts community in Scotland is realising the need to formulate more autonomous forms of organisation, production and distribution. The concept of the "self-institution" is one such model, currently being articulated by Josephine Berry and Saul Albert among others. As they have found, there is much that artists can learn from the tactics and experience of the FOSS movement.

URLS:

YOUR MACHINES - http://www.yourmachines.org
Free Software Foundation - http://www.fsf.org
Creative Commons - http://creativecommons.org
OpenOffice - http://www.openoffice.org
Dyne-bolic - http://dyne.org
Lowtech - http://www.lowtech.org
Freenetworks - http://www.freenetworks.org
Glasgownet - http://www.glasgownet.com
Glasgow Autonomous Project - http://glasgow-autonomy.org
READ_ME festival - http://readme.runme.org
RandomState - http://www.randomstate.org
Agile Process - http://www.agile-process.com
Saul Albert - http://twenteenthcentury.com/saul/
Josephine Berry - http://www.ourganisation.org