

# Engaged Autonomy: Digital Materiality, Experiential Learning & Possibility

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## Introduction

This paper briefly canvasses particular elements of hackspace skills-share events. A hackspace is any location where people with common interests, usually in computers, technology, science or digital or electronic art can meet, socialise and/or collaborate. These meeting spaces allow participants to engage in a relationship with technology on many different levels. The events revolve around accessibility and connectedness; being connected to people, to media channels, to tools and/or knowledge. The focus of this paper is how fostering a hands-on approach, utilising both online communities and physical collaboration, can enable us to radically rethink our relationship with emerging digital technologies. I propose that such a learning model is incorporated into art school studio practice.

One may ask how novel engagement with tools can metamorphose the tools themselves from standard objects into abstract signs?<sup>1</sup> Erick Raymond (2001) reminds us that ‘...any tool should be useful in the expected way, but a truly great tool lends itself to uses you never expected.’ Therefore this hands-on approach is also a metaphor, which not only maps transferences between different semantic domains – from concept to concept, but also between different ontological domains from concepts to objects. I have used Elizabeth Grosz (2001) and Katherine Hayles’ (2005) notion of material metaphor as a starting point. Grosz and Hayles define material metaphor as the instance of a metaphor where the metaphorical transference does not take place between semantic concepts, but between symbolic signs and material apparatus.

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<sup>1</sup> This difference of reality as an idea, and reality as an experience finds a parallel in the Heidegger’s (1954) distinction between how at first sight tools are fundamentally different from signs. Heidegger (1954) wrote ‘Because the essence of technology is nothing technological, essential reflection upon technology and decisive confrontation with it must happen in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it’ (Heidegger, 1954, p.33). Signs are marks able to qualify, refer to, or represent other signs and things in the world; tools are things in the world able to shape and transform other things.

Heidegger (1927) once pointed out that tools exist in order to do, their being-in-the-world always refers to the possibility of work to be done and taken up in a system of other equipment and labour. Heidegger calls a tool we just use, 'serviceability for'; it fits with the acts of our hands, and the goal in our minds. It aligns seamlessly with its function and does not call for further reflection; we do not think about a hammer, we just use it (1927, p.73). But what about when a tool does not function according to its habitus, for example when it breaks down, it suddenly becomes a strange separate object. Then it is not an iconic sign anymore but an indexical one. The person then has to reconsider their engagement with the tool as an object – repair it, replace it, or change their relationship to it and open up its possibility by extending it beyond that which it was created for.

**Case Studies:**

**ECLECTIC TECH CARNVIALS (/etc) & HACKER CAMP 'What the Hack?'**

Meeting a group of like-minded people online, via mail list chat and forum discussions and actually meeting In Real Life (IRL) is a long journey from the thought to the act.<sup>2</sup> As such, key to the functionality of hackspace events are both the online communities and the IRL meetings. In these arenas discourse and knowledge exchange are the central feature.

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<sup>2</sup> It is outside the bounds of this paper to elucidate fully upon semiotics but I base my models here from a Peircean semiotic perspective which persists that symbolic language can never fully justify the semantic meaning in action. What is significant here, is the lacunae between language and lived experience explained in the work of Peircean semiotics. Peirce describes it as a state of mind from which you can 'set out,' namely, the very state of mind in which you actually find yourself at the time you do 'set out' - as a state in which you are laden with an immense mass of cognition already formed, of which you cannot divest yourself (cited in Weber, 1987, p. 12).

GCA course Hardware & FLOSS (Free/Libre Open Source Software) in the ASCII

:::women:::  
 -->look inside a pc  
 -how it works  
 -juggling the jargon  
 -hands-on Open Source and Free Software

The transition from  
control thing to keyboard  
Should not be that hard  
but it is.

may 4, 11, 18 & 25  
 wednesday eves 19:00 - 22:00  
 javastraat 38hs  
 amsterdam

we welcome you to participate  
 2 euro. per evening.



<http://www.genderchangers.org>  
 The Gender Changer Academy (GCA) has been giving computer related courses for women and girls since 2000.

<http://www.eclectictechcarnival.org>

Figure 01: Workshop poster for 'The GenderChanger Academy' (GCA) technical skills share collective.

In Figure 01 we can see this model demonstrated in a poster for a GenderChangers Academy (GCA) event that highlights a playful multivocal and amateurish approach, even though people from all levels of knowledge attend. The specific emphasis is upon process rather than product and implicit in this is a notion of inclusivity and experiential practice that goes beyond the acquisition of a set of techniques and skills. Computer and media technology play a major role in our daily lives, but particular groups are more or less excluded from production and development of that information technology. Reminding us about the people on the periphery: the poor, young people, fugitives, the precarious elements of the social body, and giving hopeful insight into the inclusive potential of these new types of worlds, Matthew Fuller (2003) states 'Free Software is too internalist. The relation between its users and its developers is so isomorphic that there is extreme difficulty in breaking out of that productive but constricted circle.' A significant number of computer users are not aware that there are a spectrum of Operating System (OS) choices available, let alone about the GNU/Linux or Free Software Foundation (FSF), which enables

people to choose and modify the technology they use and not be restricted by economics or reductive proprietary laws.<sup>3</sup>

GenderChangers Academy is an international collective of women who deal with computers the hard way, in the sense that in workshops they open the computer hardware up and demystify the machines by cataloguing their inner parts. For the past decade they are active on almost every continent. They meet up In Real Life, through a mailing list, via webcam email, on Internet Relay Chat (IRC) and on their website that contains an interactive Content Management System (CMS). They promote a Do It Yourself/ Do It Together (DIY/DIT) approach in Information Technology (IT) and promote the use of Free Software.<sup>4</sup> The name 'genderchangers' itself is derived from a small piece of computer hardware that changes the 'sex of a computer cable' (see Figure 04). The metaphor has been chosen to start a discussion on how women and minorities are excluded from the field of IT. The GCA's customised experiential learning events challenge the more goal-orientated, vocational and teleological approaches that are so dominant in today's learning environments. Their desire is to change the dominant gender of people who use technology and this is communicated in the artwork, courses and events they produce. GCA nurture and encourage different types of people to engage with technological systems and to this end their events utilise ready-made, industrial hardware, however not in an affirmative way, but rather in an attempt to hack it and thus subvert its cultural paradigm. A crucial IRL event for the group is the yearly Eclectic Tech Carnival (/etc), a weeklong skills share event produced by the GCA in collaboration with a different international co-host each year. Figure 02 displays an example of the promotion poster for the 2005 /etc.

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<sup>3</sup> Therefore underlying the hands-on-approach to hardware hacking is a dream that one day this may spark further interest and learning in hardware & software interface design elements, so that it can more fully incorporate the voices of displaced, marginalised and exploited people by its production methods as well as its medium.

<sup>4</sup> <http://genderchangers.org> | <http://eclectictechcarnival.org> | <http://sistero.org/mdhhh/> Here are some of the portal sites where the projects exist online. Specifically skills share events are inspired by the free software movement focusing on the GNU/Linux operating system because does not deploy proprietary software, since the source code is made available for users to modify and extend. A description and an example of what Free Software is see the definition: 'Free software is a matter of liberty not price...Free Software Foundation, established in 1985, is dedicated to promoting computer users' rights to use, study, copy, modify, and redistribute computer programs. The FSF promotes the development and use of free software, particularly the GNU operating system, used widely in its GNU/Linux variant. The FSF also helps to spread awareness of the ethical and political issues surrounding freedom in the use of software'. See <http://www.fsf.org>

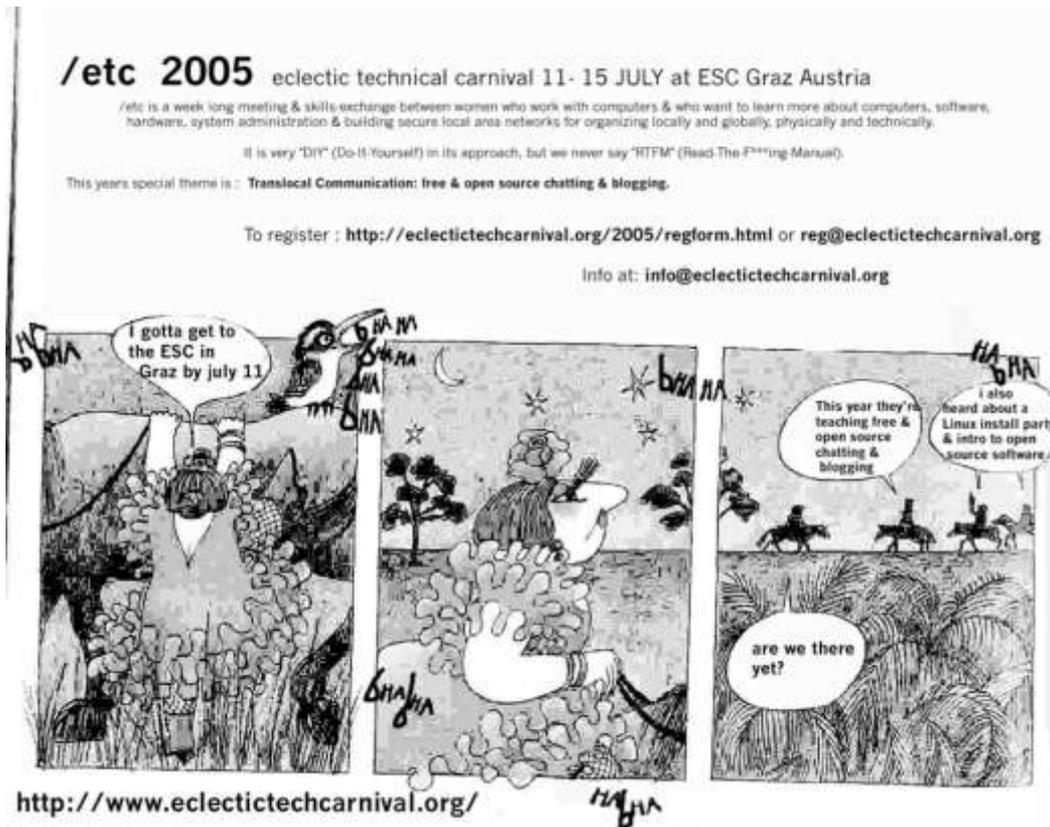


Figure 02: Poster for the 2005 /etc Eclectic Tech Carnival weeklong skills share event.

The website, [genderchangers.org](http://genderchangers.org), was based on the Linux file system structure and as such gives site users a subtle lesson in GNU/Linux directory hierarchy. Simply by being familiar with the terms allows the possibility of further research if a participant or user feels inclined, since technical terms are often intimidating this simple presence of terms builds a gradual familiarity. Figure 03 shows a screenshot of the menu/ Linux Operating System file system tree structure. One can also read into the image GCA's emphasis on technology, craft knowledge and the creative process as opposed to more formalised ways of understanding software and hardware. The hacking of tools influences and shapes the creative process of the participant. In *Articulating the Tacit Dimension in Artmaking*, Michael Jarvis (2007, p.202) writes: 'if the current professional practice is to identify those aspects which are deemed to be "good" or "best" practice, then there is a danger that this will invite a host of imitators which will, in turn, deny opportunities for newer and more radical forms of practice.' Often the processes of making radical work involves 'engaged autonomy', which is the very opposite of acquiring a body of knowledge and joining a profession so often encountered in more formal modes of education and art school practice.



The GCA's computer hardware course sets the foundation for further exploration. Hardware is a mystery and its technical jargon may seem difficult for some participants, so simply playing with it is a way to get to know how the technical paraphernalia works. The course offers hands-on practice in an environment free of worry about breaking expensive equipment. The workshop covers computer parts, the difference between memory and storage, what master and slave drives are, and the BIOS. It involves demolition and re-construction, with quite a bit of repetition, and weaves in the history of computer hardware, software and modern technology. Knowing how it works, being able to interact with it, initially gives one a sense of control and independence. Figures 5-8 show some images of these collaborative approaches in their skills-share events in action. Pulling apart and shutting down the machine, or perhaps even throwing it out of the window, creates a genuine interactivity outside the box and outside pre-empted behavioural patterns in relation to hardware. During the process, the false promises, installation nightmares, support horrors and other frustrations with software, known to any computer user are brought to the fore, and become the material of the workshop.

In regard to the instrumental use of tools, Elizabeth Grosz claims 'Artists and activists pirate technologies in the pursuit of re-enchantment and liberated space' (2001, p.83). She continues with regard to the immanent quality of women-centred activities and their unique link to digital materiality:

All in one way or another seek, desire, hope or imagine some kind of liberation, movement beyond and outside the body and its perceptual, sexual, or material limits in the mode of action-at-a-distance [which, significantly and rather strangely, Nietzsche has attributed to women as their special power of allure] (2001, p.83).

This gives indication of an immanent kind; Grosz's perspective opens the entire social field to transformation and reconstruction, ranging from the economy and technology to media and education. What is crucial is that while ease of access to virtual communities adds to the allure of these projects, their primary appeal lies in the capacity to satisfy the need for camaraderie on the ground. Much of the events are organised over vast translocal distances therefore they have much experience and influence in dealing with social networks and a largely online presence. Yet, the aim of Grosz's analysis is to focus attention on the nature and the structural transformations of the architectural space, the relationship to virtuality and its actual function within the public sphere.



Figure 05: Preparation meeting for /etc 05 in Paris using free wi-fi at *Palais de Tokyo* a building dedicated to modern and contemporary art.



Figure 06. GCA workshop on computer hardware at ASCII in Amsterdam.



Figure 07: Content Management System workshop at /etc 05 in Graz.



Figure 08: Preparation meeting in Rome for /etc 06.

The significance of the distributed and local nature of these events is about access. This more experiential learning environment is a synesthetic way of approaching skills development that seems to foster information acquisition that is friendly to various minority groups and people of different backgrounds. Figures 09-12 show these workshops and events happening at autonomous media spaces around the planet, as this fresh approach is gaining an international momentum. GCA's hope is that this encounter and engagement may one day spark the desire for these people to eventually be responsible for developing creative media designs, software and hardware tools and platforms according to their own needs and experiences.



Figure 09: Workshop and talk at *Bandung Centre for New Media Arts*.



Figure 10: Workshop and talk at *Bandung* Centre for New Media Arts.



Figure 11: Noise Box workshop at *Bandung* Centre for New Media Arts.



Figure 12: Noise Box workshop at *Bandung* Centre for New Media Arts.

This practice extends from a much larger participatory culture that is influenced by the free software movement; here I simply give an example of an element of its inclusive and playful approach. 'What The Hack' (2005) is a recurring outdoor conference/event that takes place on a large camp ground in the south of the Netherlands. Figures 13-18 show images of this event. This event takes place every four years, and originates from a group of people centred on a small hacker magazine called Hack-Tic. The magazine's last issue was published in 1993, but the events extend the magazine's creative philosophy.



Figure 13. Stone Computer featured at the international Hacker festival Hacking at Random.



Figure 14: 'What The Hack' (2005) Tent city and wi-fi antenna.





Figure 15 -18: C-Base tent at 'What The Hack' (2005) a non-profit association of about 300 members located in Berlin, Germany. The purpose of this association is to increase knowledge and skills pertaining to computer software, hardware and data networks. The association is engaged in numerous related activities. For example the society has had stands at large festivals, such as Children's Day, where they introduce young people to topics like robotics and Computer-aided design.

People from every nook and cranny of the hacker universe arrive and pitch their tents: from interested amateurs to experts in every field of computer networking and security, developers of Free and Open Source software, civil liberty and privacy activists, as well as many others who will be showing their projects and talking about their practice. There are very large tents where lectures and presentations are held as well as multiple bars, gaming tents and other cosy spaces to hang out.



Figure 19 - 20 'Onze Lieve Vrouwen Tech Huis' (the very lovely lady tech house) the 2005 'What The Hack'

Figures 19-20 are of the 2005 'What The Hack' event where GCA constructed with the 'Onze Lieve Vrouwen Tech Huis' a place where people can meet, drink tea and eat cookies, re-install Macs with Linux, audio stream a radio show, learn Drupal

CMS, make a mandala using old hardware, discuss Wavelan, life love and other catastrophes, and many other interesting topics regarding free software in a comfy environment. To utilise systems, for something other than they were meant/designed for, they hack the hardware (literally with screwdrivers and hammers). As I have elucidated above, the GCA challenge perceptions about the relationship with the computer itself and they have succeeded to some degree.



Figure 21: 'spiritual hack' site-specific installation documentation



Figure 22: 'spiritual hack' site specific installation (detail)



Figure 23: 'spiritual hack' site specific installation documentation.



Figure 24: 'spiritual hack' site specific installation documentation

As a part of their space, an artist member of GCA initiated a hardware mandala installation, a site-specific 'spiritual hack' that required hands-on demolition and reconstruction. During the building of it, artist engaged people as they passed by and recruited people to join them to dismantle and open up the confined computer parts and place them in another configuration. Reactions and comments varied greatly, and they engaged in several exchanges that started with passersby noticing the mandala in the wet soggy grass:

'Hey, that network card has a life-time guarantee!' a young man said in horror.

'Oh, nice. It's beautiful. Very balanced,' says another.

To conclude such a massive event like 'What the Hack' is impossible given the scope in which I write, but I hope to have articulated how these events encompass a need for engaged real life events. This locality is not necessarily connected to a fixed physical location, or even nation, but more to a meeting place. The notion of 'engaged autonomy' plays a big part in these processional events, with no set goal that has to be fulfilled, what it exactly does is just as much up to the participants and the event developers, as it is up to all the *others*. As a hackspace event developer you must be able to develop own initiatives, be independent and self-organised because there is no clear determination of responsibility, leadership or office. It is clear that as a participant you think a feature is missing in a particular program, then maybe you are the one it takes to develop it. These events thus unify imagination and objects, the abstract and the concrete, which allows people to create new building blocks towards something anew.

**Conclusion: DO IT TOGETHER (DIT) HAS ONE DISADVANTAGE MORE – WE ARE NEVER FINISHED...**

Computer Operating Systems are those often invisible yet ubiquitous digital entities which by now have penetrated deeply into our material world. I have briefly articulated strategies of how artists with a hacker approach can turn our ideas, dreams and fantasies about machines and code upside down as an infinitely intriguing way of creating. Ideally, an art school studio could have many of the characteristics of one of these events. A student should not just study how to create things using the media, but also how the tools themselves are designed, and what options they have of rethinking them. I advocate that a good art school program should give this opportunity.

These practices I have described act to mobilise engagement with new technologies, to create infrastructures and attempt to understand these tools as world-making in a literal, not only metaphorical sense. Approaching the computer as not only a calculator but as a theatre stage; not only a word processor, but a writer of love letters, the computer is a new world, a place for art as an executable process, whether it is used to formulate instructions for a machine, ideas for people or both.

Sending back and forth emails with some of my peers from GCA while preparing for this paper, we jointly constructed this rather poetic and subjective response to some of the questions that were unfolding:

*START*

Date: 8 April 2010 21:55

Subject: Re: Re : Tr. : [GCA] ... feedback for presentation

we did it together (DIT) has one disadvantage more - we are never finished...

and the original goal was to conquer the world like true nerds wish for

but THEN one needs a bit of resistance as well

AND stay tuned

and conquer the flow

and never stop being curious about what system runs in your office

and being amazed how out-dated it is

and realising our own systems are so much better

in fact

with great bravura I gave my boyfriend a new screwdriver (3mm, nr. 0)  
telling him that we all need great screwdrivers in life

of course I had already tried it out  
pulling off the old nametag on his house  
adding myself to it

now back to work...

*END*

These actions I have described involve technology itself read against its grain. The events promise no expensive computing utopias and are not futurist human-machine-interface research but instead the basic tools and D.I.Y./T scenario, which forces the *user* to hack the computer in order to regain control. In Figure 25 one can see a workshop participant enchanted by viewing the inside of a hard-drive for the first time.



Figure 25: Participant viewing a hard-drive for the first time at Miss Despoinas, Hackspace Hobart.

A social process involves a wide range of educational actors, technologies, entities and activities. Culture evolves as knowledge spreads throughout society and learning is a process of social construction, of creating meaning through sharing knowledge, experience and cultural nuances. To act autonomously while committing the results of those acts in specific implied rules and protocols, context and conditions, might be then what we need for a more radical dynamic practice.

Here the possibility of radical art practice lies.

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