

# DIY - DITO - DIWO AND SO ON .

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## DIY-DITO-DIWO and so on.

**On making, tinkering, learning and exchanging in my artistic practice.**

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My name is Wendy, I am an artist, tinkerer and an inhabitant of Brussels, a member of Constant vzw [1], an adopted zinneke. I wear many hats, which consists of a combination of these verbs: I organize - research - document - share - create - make - break - teach - sew - solder - hack - tinker - code - misunderstand - scramble - perform - exchange - learn - forget.

### Everything intermingles and intertwines.

Last year PTTL asked me if I was interested in making a contribution to an exhibition on the theme of DIY. I immediately accepted. My contribution was twofold: firstly, the Pianofabriek exhibition space was used by Ellentriek [2] to organize workshops on DIY in arts and electronics. Secondly, I contributed to the “Kijk” mama, “zelfgemaakt” exhibition with a cape. This cape is quite special: with it you can listen to the ultrasonic realm of our world, hear sounds that are so high that human ears can't perceive them. Printed on the cape are instructions on how to use it, what you can hear, who made it, who contributed. The work is available under a Free Art license.

When I was asked to write a text on my contribution, I realized writing a coherent story was a bit harder than I thought. I will try to explain how I work with electronics, what open hardware is and how it affects my creative practice.

### On DIY - DIWO - DITO

*DIY = Do it yourself*

*DIWO= Do it with others*

*DITO= Do it together*

In the past DIY was highly associated with people rebuilding stuff in their own home, DIY plumbing, electricity, etc. Whether these domestic interventions are successful or not, it is now quite an omnipresent term, that has been marketed, branded as such. As a work method it has its limitations so I added DIWO and DITO to DIY. I am not a big fan of these acronyms and their commanding tone, but they do add two very important factors to DIY: the idea of the *other* and of *togetherness*. If the DIY-er cannot rely on others, images, plans, tips and tricks, he or she will not get very far. In this day and age there are online videos, tutorials and recipes on close to everything.

## Open/closed - the importance of documentation

The availability of documentation on possible problems and solutions is crucial to the tinkerer, maker. When domestic electronics became more generally used and produced, the manual that came along not only gave useful instructions but also contained the plans on how the device was made. This enabled you to repair these machines yourself. Some early models of personal computers came in the form of kits: you could build your own machine. The components were expensive but not secret: they were patented whenever possible, but you could access them, and if you had the appropriate tools, you could change them.

Contemporary devices are miniaturized and closed shut. A drop of glue is cheaper than a human or a machine turning in a screw. When something breaks, single components are hardly replaced, as making the diagnosis, determining the problem, takes time and money. On top of that, the plans are not readily available. Exclusivity contracts and very high walls of secrecy are built around the way our shiny devices are made. If and when there are screws, important gateways to opening up the device, they are often inaccessible and obscure. Certain firms even invent new types of screws to make it hard for machine-owners to open the device and perhaps understand how it works, or repair something themselves.

Some die-hard amateurs retro-engineer a device: they take it completely apart and they document this process. This is quite an impressive, slightly fanatic type of work. Moreover, in opening up a machine you have bought, you often void your warranty. The machine loses its status and will no longer be accepted by the firm that once made it.

Parallel to the electronics universe closing up, there has been a tendency for the last few years towards another way of dealing with devices. Bit by bit some hardware projects choose to consciously stay open. Open Hardware (machines, print boards, micro-controllers,...) allow you to look at the way it is built; you can download the plans, and even make your own version. Opening up the device is inherent to the way it is constructed. Depending on the license (some devices are made under a creative commons license, some are made under the open hardware license, some are trademarked, some are not) you can even reproduce these devices and change whatever you want.

About ten years ago, it was very expensive, difficult and complex to integrate interactivity in artistic installations. The development of an open hardware micro-controller such as Arduino has been a true turning point. Components are a lot easier to get, micro-controllers are affordable, and the code to control these micro-controllers is published under an open license or is in the public domain. Through this code you can use sensors that can measure anything from methane gas to light or temperature... The online *fora* are bubbling with activity and unorthodox prototyping can happen just about anywhere: in kitchens, ateliers, on the street,... Free software licenses took the software out of the world of developers and programmers, open hardware brings new ways of distributing and producing.

I deeply defend the use of devices where openness is a conscious choice. I want to keep in touch with the complexity of what I work on/with. The openness in hardware goes hand in hand with documentation, manuals, communities, etc. Without the explanations, the generosity with which information is shared, open hardware does not make a lot of sense. The only reason I can do what I do is because someone, in the physical or virtual world took the time to explain something, to write up a solution of a problem, to follow my technical glitches for a whole week on a forum.

My (our) world is highly “technologised”, there are minicomputers embedded in ovens, washing machines, cell phones, microwaves and so on. Denying this complexity reduces me to someone just pushing buttons. Because of what I do, I know what a button is, I can imagine the world beyond the button, I can make a button myself.

How does this relate to my artistic practice, you might wonder? I started out making radio, sound and music. In 2003 somebody showed me how I could make my own cable for a – bought – microphone. Step by step the part about electronics stimulated my imagination. Making sound

became making sound installations. Whereas young boys are opening up devices at the age of 10, I started when I was 29 years old, and I haven't stopped since. Even worse, I tend to stimulate other artists to open up devices and tinker, especially the "not young boys" who have never opened up a machine before. Demystifying the technological realm enables us to play with it and to shape it the way we want to.

Constant

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Part of my fuzzy artistic practice is my membership of Constant, a Brussels based arts lab (kunstenwerkplaats). We seemingly work along different disciplinary lines, as there are thematic groups entitled Open source video, Open hardware, Libre graphics research unit and so on, but there is a strong common undercurrent that carries us all along: we work closely together to open up an artistic practice using F/Loss [3] tools, in the meantime sharing our own experiences and opening up the work processes to other artists.

I work with electronics and physical computing: the point where the virtual meets the physical realm. More specifically, I choose to work with free software (Linux) and open hardware.

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Find glimpses of my work at <http://capacitor.constantvzw.org>.

As always, documenting is a bit slower than the actual creation. To have an idea of the activities I do or Constant does, come to one of our workshops, lectures, performances...

To stay informed on the activities of Constant, please subscribe to the newsletter.

[1] Constant is a non-profit association, an interdisciplinary arts-lab based and active in Brussels since 1997. Constant works in-between media and art and is interested in the culture and ethics of the World Wide Web. The artistic practice of Constant is inspired by how technological infrastructures, data-exchange and software determine daily life. Free software, copyright alternatives and (cyber-) feminism are important threads running through the activities of Constant. Constant organizes workshops, print-parties, walks and "Verbindingen/Jonctions"-meetings on a regular basis for a public that's into experiments, discussions and all kinds of exchanges.

[2] Constant and Pianofabriek recently organized two workshops called Ellentriek #13 audio. We made basic microphones and small amplifiers based on the LM384 chip. All participants were thrilled to build this from scratch.

[3] Free and open-source software (F/OSS, FOSS) or free/libre/open-source software (FLOSS) is software that is liberally licensed to grant users the right to use, study, change, and improve its design through the availability of its source code. This approach has gained both momentum and acceptance as the potential benefits have been increasingly recognized by both individuals and corporations. In the context of free and open-source software, free refers to the freedom to copy and re-use the software, rather than to the price of the software. The Free Software Foundation, an organization that advocates the free software model, suggests that, to understand the concept, one should "think of free as in free speech, not as in free beer". FLOSS is an inclusive term that covers both free software and open source software, which despite describing similar development models, have different cultures and philosophies. Free software focuses on the philosophical freedoms it gives to users, whereas open source software focuses on the perceived strengths of its peer-to-peer development model. FOSS is a term that can be used without particular bias towards either political approach. ([http://en.wikipedia.org/wiki/Free\\_and\\_open\\_source\\_software](http://en.wikipedia.org/wiki/Free_and_open_source_software))