# TRACK ME IF YOU CAN !

By
**Charlotte Peroni**

2015

*“ L’enfant gribouille encore et tache son livre d’école; même s’il est puni de ce crime, il se fait un espace, il signe sont existance d’auteurs ”*

*Michel De Certeau*

# ACKNOWLEDGEMENTS

First of all, I would like to say thanks to the whole pedagogic staff of the IAE, and the responsible stakeholder such as **Mr. Jacques Ibanez Bueno** and **Marc Veyrat**, to have ensured th proper conduct of this master thesis.

I would also like to thank and particularly express my gratitude to the following people, for their support, and their help all the way along to the success of this project, at the same time personal and academical :

To **Carole brandon**, who took the time to help me and follow me throughout my thesis project, who allowed me to participate in her Nympheas art project, enabling me to feed my memory but also to create and design a tool called BodyTrack. Their support, encouragement, pieces of advice during this period allowed me to evolve and understand key concepts in my past, present and my future.

To **Nicolas**: With whom I had collaborated and developed a interactive honor map. His patience, and substantial interest for music was really nice and informative.

To **Amel Sonia, Yoann** et **Martin,** who offered voluntary their help to wear during 2 weeks the trackers. Their participation made it possible to live Nympheas, and enrich the project.

My thanks also to **Thomas** and **Lise** who cheered me up, helped and supported me throughout the period of the realization of this memory.

# SOMMARY

# GLOSSARY

**The following expressions or nouns will be used all over this master thesis. Here are a few explanations concerning them. To make things clearer, we will talk then of :**

**NYMPHEAS :** Name of the project led by Carole Brandon, but also the name of the flowers scattered in the city of Chambery

**BODYTRACK :** Tracker created with the Arduino technology and computer code

**CAPSULES:** Second skins of BodyTrack.

**TESTER :** Person carrying the BodyTrack

**MAP :** Platform to read and listen to the displacements of the body of our testers.

**HOMEMADE/ HOMEMADE DEVICE /HOMEMAKE** Corresponds respectively to « Bricolé », « bricolage » and « homemake » in french.

**DIY :** Includes the notion of community

**ORNAMENT:** artifice to make something nicer

**CAMOUFLAGE :** Camouflage: Conceal, hide

# INTRODUCTION

Both qualified as discrete and invisible, « they » monitor us. Watching our actions and moves, we are monitored each day. Surrounded by vision machines ...
This new era of observation has been further than human needs and jobs dedicated to this activity. Once being related to the mobilization of humans monitoring other humans, they have quickly been overpassed by the proliferation of information being around them. Nowadays, this surveillance is going through cameras, mobile phones, social networks, and the Internet. This venom is going slowly into our lives, and we cannot even notice it. Our personal and intime data are transformed into accessible and public data, despite us. Today, our data is more and more exposed to various numerical systems which surround us. It is through this numerical system that we are going to see how individual manipulate their own datas.

**Finally, how will they manipulate those data ? What are going to be their effects ?**

It is through the **Nympheas Project,** initiated by **Carole Brandon,** that we have tried to answer those different questions. This Nymphea project has started from the following intention : To be able to enter the personal life of a human being, with the aim of measuring how this human being can control his data, and see what this can produce inside numerical systems, but also inside physical systems.

**This complex project is set around 4 main axes, explained right after this :**

# 1 NYMPHÉAS X PERFORMANCE

*$GPRMC,090902.907,V,,,,,0.00,0.00,110515,,,N*40*

On May 7th, 2015, at 4:30 am, we have spread over the small streets of Chambery 13 connected Nympheas
With attractive and non-offensive shapes, these colorful Nympheas, reminding the Mexican culture, have been scattered through the streets of the city of Chambery, to create a chase of personal data of the owner of such devices, created specifically for this project.
Set in this public area, this charming flowers will bo connected to a virtual platform, where collected data, sounds, images and bodies will be mixed and destructured.


** Perfomance May 7th, 2015 with Carole Brandon*

# 2 BODYTRACK X TECHNOLOGY

During 3 months, we have worked for the development of a technologic tool, naed **BodyTrack** .
BodyTrack is a device composed of several programmable electronical compounds (Arduino Uno, Shield GPS, Pressure sensors, SD card ...) allowing people to be geolocalised and tracked. This tool has been imagined so as it could constitute an object which could be autonomous, far from those we can find in mobile phones.

Created at the origin to be dissimulated over the human body, this BodyTrack is then put in a « *second skin* » developed specifically to get the BodyTrack shapes.
The addition of the BodyTrack plus the cloth make the capsule. Those capsules, looking like wearable Technologie* (basically a technology you can wear on your body), are then dispersed over the clothes of a human being, called tester, who will « *share his/ her life* » and his/her daily moves with the BodyTrack for a defined duration.

The capsule transforms itself into a **tracker** looking for some **moves, actions, meetings and geo localization of each of its bodies.**

# 3 CAPSULE X DISPERSION

This « *tumor* » (BodyTrack) associated to the body of different testers becomes invasive. Going through their lives, it will turn each move into a visible one, and a public one.

This experience will be divided into **two steps** :
First of all, the BodyTracks will record the geo localisation of several participants.
Once the data collected, it will be transcripted on a map with sound, which will allow people to see the tactical choices adopted by the testers.

**It is thus the testers who are sent inside a game where their choices of movements will have repercussion on their own datas.**

** Amel Sonia, with the capsule*

# 4 RULES X INTERFACE

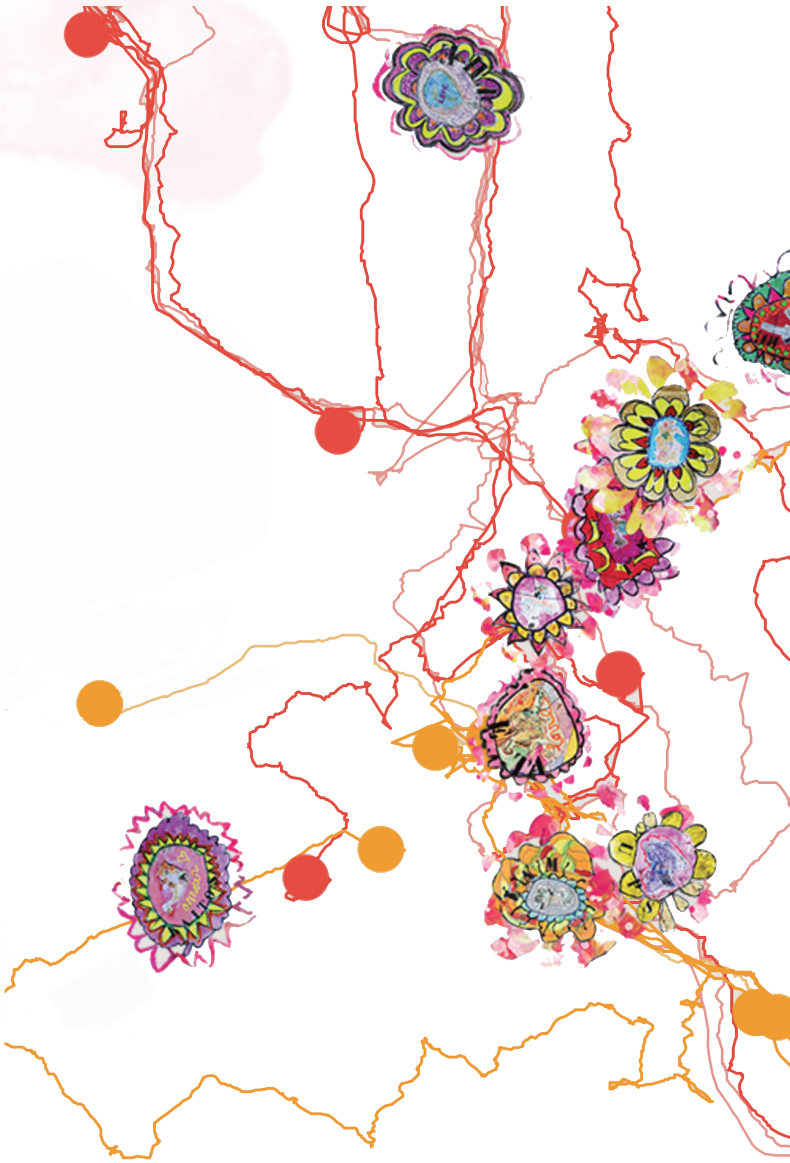
Each of the BodyTrack has a sonor tape. The testers will be able to modify and transform it, thanks to the trajectory they will go by in the physical space. This step will allow them to see their choices and tactical decisions they have set to modify their own data.

The testers will be able to modify their own data by :

- Walking close to Nympheas dispersed over the city of Chambery.
- Walking through the area of « Rue Dessaix » (which will delete all the data of the BodyTrack)
- Physically interact with a physical element (people, object, etc...)
- Interact with other BodyTrack in a same point on the map.

All of those actions will be then recorded and shown on a map. This map will become thus the witness, recorder of each move and contact realized by the different capsules. it will allow us to see if it is possible to control what will happen, or if the partition of the data hosted by the different bodies take it over and control the system.

**This system we record thus the partition of the data, we are looking forward to see if the « partition » and the proliferation of the data are controllable, and what does this create ?**



** Map with paths*

# 1) FROM HOMEMADE TO «DO IT YOURSELF»

# I) FROM HOMEMADE TO " DO IT YOURSELF " :

The Nymphea[1] project started during the conception and realization of the **BodyTrack***. This technology, halfway between homemade and DIY introduces to the conception of an object and its limit between art, data controlling and technologies.
This first part will allow us to understand the main intention, which is the one of homemade, but also allow us to discover its evolution through the ages, and in particular with the arrival of new technologies and its uses.

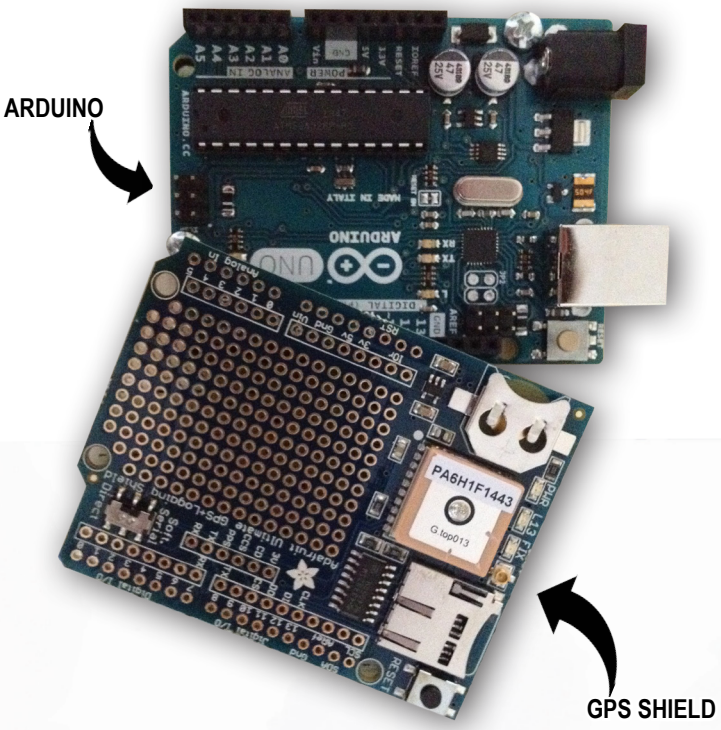
## A) HOW TO « HOMEMAKE THINGS » IN ORDER TO INNOVATE IN THE NUMERICAL ERA :

### BETWEEN ELECTRONIC AND DATA PROCESSING:

Manufacturing this BodyTrack with an Arduino means building an object which is between electronic technology and data processing. Part of the big family of the « handmade objects » and open-source data, the Arduino is at the true center of experiments.
Based on an electronic programmable card, the Arduino was at the origin designed to control robots. Its use went quickly out of this single field to reach other experiments.

For instance, the project E-traces by Lesia Trubat, consists in recording and drawing the moves of dancers, thanks to connected ballerinas composed of several sensors and Arduinos. This project between technology and art asks about the appropriation of an object and of technologies used to set it.

Using Arduinos becomes more and more interesting and fluent. With those open-sources data which allow to share the source code and all the works based on this technology, the use of Arduinos allows to the most beginners can appropriate what is now data open source to create and mix items.
Homemake objects becomes then a way of diverting objects from their initial purpose.




### WHAT DOES « HOMEMAKE » MEAN

« *To fix, to repair, to make things in an amateur way* »[2] is one of the definitions of the word « *homemake* », in the sense of manufacturing thinbs by yourself.

This definition, transcripting the action of mixing the knowledge to manufacture an object without knowing specifically the subject, redefines the idea of the conception and the manufacturing of an object to a unique knowledge and a unique technique.

1 - Nympheas : Series of 250 paintings representing a pool of water lilies, directed by Claude Monet from 1897 to 1992.

2 - « Arranger, réparer, fabriquer en amateur » - Definition « Homemade devices » by CNRTL (National Resource Centre Textual and Lexical)

# I) FROM HOMEMADE TO " DO IT YOURSELF " :

Let us have a look at the instance of the BodyTrack. This one has been designed and imagined in order to give possible answers to specific needs : « to geo-localize, track, record, be hidden, etc... ».
Looking for equipment allowing manufacturing it, a real components gluing has been set with the aim of finding solutions leading to the conception of such a tool.

As **Michel De Certeau**[3] explains it, Homemade devices come from the « *ways to do* » . How humans being have taken the possibilities of their environment in order to create and design things. Transforming things from « *the uses* » to « *deal with* », Michel De Certeau shows that we can re invent our environment by appropriating daily things to ourselves.
Moreover, he explains that « *As far as literature is concerned, where we differentiate Styles and ways of writing, we can totally differentiate ways of making* »[4] , id est ways of appropriate things to re design it.
Manufacturing the BodyTrack is :

- **Starting from a need :** We want to measure the diffusion and the control of those personal data.

- **We will thus imagine a tool to measure this need :** we set the concept and the design of a BodyTrack.

- **Designing the object :** assemble several components : Electronic Arduino card, GPS Shield, pressure sensors, data processing program and cloth.

These three steps have determined the way of manufacturing an object giveng the answers to a very specific need. This has been possible thanks to the open source data used.

## BETWEEN DESIGNER AND DRAWER:

Using the Arduino technology as described above, we have used data and codes given on the Internet by designers. The main interest of using a technology we can modify via the code does not only allow us to custom and invent new objects, but also to be able to help ourselves with all the free ressource set with this technology.
An interest is thus set between the designer and the « *user* » :

**- The designer will see his creation growing, being deployed thanks to the people who have appropriate it to themselves.**
**- The users will enjoy the help and data re writable in order to manufacture their own ideas.**

Everybody enjoys then an interest to share the open-source data for a project. Having an influence on the data at the core of the object via the code, the open-source transforms also the original use of the object via its shape and its use. Designer, manufacturer and user have a global collaboration going through a processus of sharing and interacting in a commun final goal : create and innovate.
The BodyTrack obviously did not overcome this rule. Using all the codes and the tutorials shared, the BodyTrack has been set. With a noticeable save of time and ressources, the BodyTrack has been developed answering to its own needs... Being able to measure the data propagation.

In the early 1900s, around 1919, the web was not born yet. The idea to share all the available data to create and develop new arts and objects did not have the actual ampleness. It is with some cultural establishments and artistic ones that the idea of homemake, mix and share started.

3 - « manières de faire » - Michel de certeau, L'invention du quotidien, art de faire, p 33

4 - « Comme en Littérature on différencie des ''Styles'' ou manière d'écrire, on peut distinguer des ''manières de faire'' c'est-à-dire des manières de s'approprier les choses pour concevoir » - Michel de certeau, L'invention du quotidien, art de faire, p 51

# I) FROM HOMEMADE TO " DO IT YOURSELF " :

It is with the **Bauhaus**[5] art school, design and architecture born in Germany by Walter Gropius in 1919, that the revolutionary idea of mixing to create has raised.
Gropius' aim was to clear the fences existing between art and craft, to raise an artistic creation oriented to the useful : « *the final goal of any plastic activity is the building part ! Decorate it was the most distinguished step of plastic art [...]. Architect, painter and sculptors have to re learn how to understand the hard way of giving shape in a global way* »[6].

With the Bauhaus, arts have started by mixing themselves, giving then a new vision of art and bounds set around it since a long time ago. Setting the idea of being able to mix and share to create the school of Bauhaus is the precursor of a technical mix between technic and knowing, homemade and concept, and between art and innovation.

Eventually, oriented between the first philosophy of mixing arts to innovate with the Bauhaus, and the establishments of an open-source notion with the numerical era, the BodyTrack has found its place and has born between a wish of homemake and innovate.

Transforming an arduino means create an object allowing to set the question of a possible mix between designer and user.
Transforming an arduino is also appropriate it to have its first original use diverted to a personal need.
Transforming an arduino is also homemake it going its data opened to anybody, so that other could re use it an another new way, with totally different objectives.
Finally, using an arduino transforming it means being able to answer to a need, which is the measurement of the takeover of our personal data wearing it.
Designing this numerical object is re-setting the scene of infiltrate in a very easy way into peope's life, but also measuring what is interesting here : being able to have back this control of personal data.

5 - Bauhaus : « Maison à construire » en Français

6 - Quote of Walter Gropius, the Bauhaus manifesto 1919

# I) FROM HOMEMADE TO “ DO IT YOURSELF ” :

## DIY STATE NOWADAYS:

Being able to homemake things today is being able to appropriate, and personalize an object. Homemake allows us to mix things very different to give them the opportunity of doing unexpected things. « Concerning Homemade devices its creations always bring to a new arrangement of elements whose nature is not modified if they figure in a global instrumental way or a final layout » id est that[7] Homemade devices assemble existing to create new things. Today, this idea of homemaking things does not only allow us to understand how things work, but also to create an object able to give answer to a very specific need.

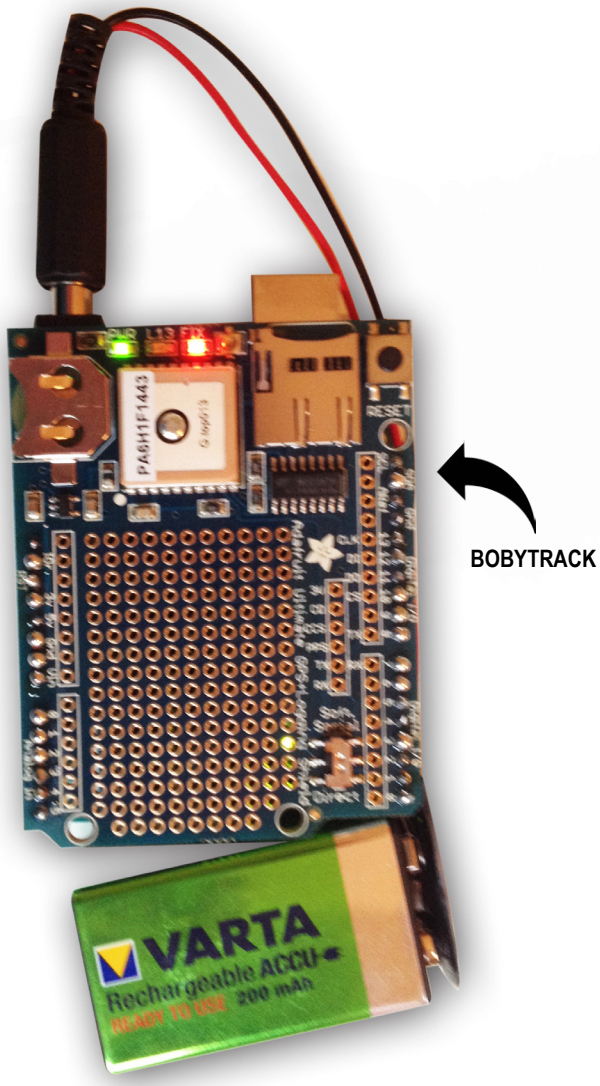
Nowadays, we note that an emancipation of the systems is appearing, in other words objects being autonomous and evolving thanks to their own devices. Homemade devices becomes a vector allowing to make objects better, to grow them with creation, innovation and art. As our BodyTrack keeps living by hiding itself in its environment.

With this numerical era and this web era, the idea and the vision of Homemade devices has grown and evolved.
The numerical transcripts all the data we can find in its network, and allows people to be able to homemake and create thanks to the different resources found in this network.
Today, we do not find help through books and How-to-homemake-things-books, but we try to find open-source data on the web to appropriate it and compose with it.
This idea of sharing data and making it more accessible to create is thus born with the web.

Moreover, homemake does not stop to design real objects. Homemade devices will slowly go into a universe of pictures and numbers. the one of virtual world. The open-source will obviously be one of the generators of this phenomenon, but not only. It is true that between this idea of DIY and network, the DIY was born.

**So what is the DIY ? What is the difference between « Homemake » and DIY ? How does the BodyTrack take place between those two concepts ? can we talk about a fashion phenomenon or a way of going back to the materiality ?**

We will try to give pieces of answer to those main questions.




7 - « Dans le cas du bricolage, ses créations se ramènent toujours à un arrangement nouveau d'éléments dont la nature n'est pas modifiée selon qu'ils figurent dans l'ensemble instrumental ou dans l'agencement final » - Claude Lévi-Strauss, La pensée sauvage, ch I, La science concret, p. 26

# II FROM HOMEMADE TO " DO IT YOURSELF " :

## B) ART OF « DO IT YOURSELF»

### "DO IT YOURSELF" A SPIRIT PHILOSOPHY

By realizing this Body track we have mixed, imagined and collected data in order to elaborate our tracker. From this participative homemade device, where open-source has helped to get a good development, we have been sent into the universe of « *Do it yourself* », without even paying attention to it. But the first question is : What is the DIY ?
The « *Do it yourself* » is thus a term very close to « *homemake* », or to « *homemade device* ». Both of them converge into the idea of realizing an object by yourself does not only allow creating new innovative objects but also being able to invent and imagine objects which answer to precise needs. With the upcoming of numerical era, homemade devices and DIY both enjoy the revolution of the open-source, codes are spread around to create easily.
This numerical era also provides an easy access to the open.source data, and generates a « *fashion effect* », as surprising as real around going back to the materiality of objects, inviting people to design their own needs.

This DIY term has existed for several years. DIY was born with the culture « *punk* ». They initiate and introduce the Do it yourself movement in order to make their band independant, and not associated anymore to the musical industry, which owns the artists. The Punk group has voluntary placed itself sidelines the economical system and musical industry to create a community able to gather around same hobbies to create and innovate without being restricted by Labels.

In other words, this band has set « *humans dispositions oriented to the resolution of practical problems or practical intelligence forms whose implementation takes place without loosing energy, neither time and without having any authority* »[8] . More than a state of mind, punk creates a true philosophy of life based around passions, a wish and a willing to want to change economical systems.

Usually, people find themselves dispossessed from their tools, some of the Punks have known to appropriate thanks to communities and willing to change things.

In opposition to the homemade device, the DIY sets the idea that communities, gathered people can unify themselves around a similar passion in order to design, innovate, invent ant reproduce tools , to control it better then. **In other words, this revolution of the DIY is set more on what human beings can do , as soon as they organize their community into a network.**

The idea of a community symbolizes then[9] a « *Human entity whose members use a similar idiom* » , tends to be an essentiel point concerning the development and the organization of this idea of Do it yourself. Eventually, further this notion of DIY is hidden a community with the wish of innovate to appropriate things better.

As far as the body track is concerned, it found its role in data sharing. Indeed, to design the BodyTrack we did not only enjoy all data usable and provided by some communities

paying attention to electronic like the Arduino community, but also we have answered to some need, elaborating online tutorials we have spread on the internet. Moreover, we have-via forums-answered to some people's interrogations thanks to our work.

8 - « dispositions humaine tendue vers la résolution de problèmes pratiques ou forme d'intelligence pratique dont la mise en œuvre s'effectue sans perte d'énergie, ni de temps et sans l'aval d'aucune instance » - Fabien Hein, ''do it yourself ! Autodétermination et culture punk'', Le Passager clandestin, 2012. p 47

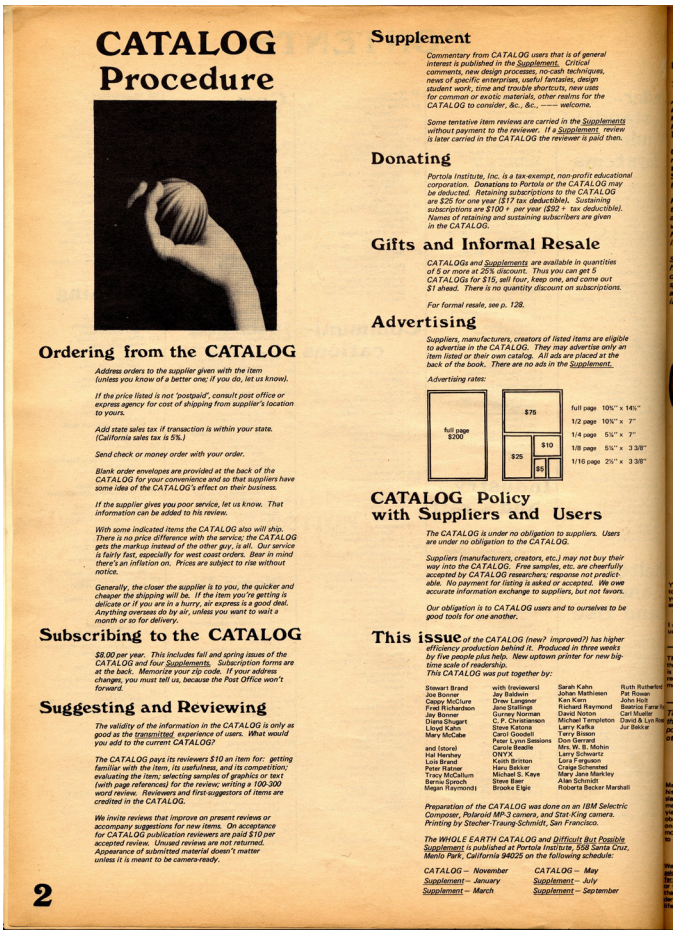
9 - Community: Definition of CNRTL (National Resource Centre Textual and Lexical)

# I) FROM HOMEMADE TO " DO IT YOURSELF " :

## LE DIY AS "ANTI-CULTURAL MOVEMENT":

This stream, this DIY fashion, is going through the ages and centuries.

In 1960, the DIY had the shape of an american magazine about anti-culture with the **Whole Earth Catalog,** published by Stewart Brand.



CATALOG Procedure

Ordering from the CATALOG

Address orders to the supplier given with the item (unless you know of a better one; if you do, let us know).

If the price listed is not 'postpaid', consult post office or express agency for cost of shipping from supplier's location to yours.

Add state sales tax if transaction is within your state. (California sales tax is 5%.)

Send check or money order with your order.

Blank order envelopes are provided at the back of the CATALOG for your convenience and so that suppliers have some idea of the CATALOG's effect on their business.

If the supplier gives you poor service, let us know. That information can be added to his review.

With some indicated items the CATALOG also will ship. There is no price difference with the service; the CATALOG gets the markup instead of the other guy, is all. Our service is fairly fast, especially for west coast orders. Bear in mind there's an inflation on. Prices are subject to rise without notice.

Generally, the closer the supplier is to you, the quicker and cheaper the shipping will be. If the item you're getting is delicate or if you are in a hurry, air express is a good deal. Anything overseas do by air, unless you want to wait a month or so for delivery.

Subscribing to the CATALOG

$8.00 per year. This includes fall and spring issues of the CATALOG and four Supplements. Subscription forms are at the back. Memorize your zip code. If your address changes, you must tell us, because the Post Office won't forward.

Suggesting and Reviewing

The validity of the information in the CATALOG is only as good as the transmitted experience of users. What would you add to the current CATALOG?

The CATALOG pays its reviewers $10 an item for: getting familiar with the item, its usefulness, and its competition; evaluating the item; selecting samples of graphics or text (with page references) for the review; writing a 100-300 word review. Reviewers and first-suggestors of items are credited in the CATALOG.

We invite reviews that improve on present reviews or accompany suggestions for new items. On acceptance for CATALOG publication reviewers are paid $10 per accepted review. Unused reviews are not returned. Appearance of submitted material doesn't matter unless it is meant to be camera-ready.

2

Supplement

Commentary from CATALOG users that is of general interest is published in the Supplement. Critical comments, new design processes, no-cash techniques, news of specific enterprises, useful fantasies, design student work, time and trouble shortcuts, new uses for common or exotic materials, other realms for the CATALOG to consider, &c., &c., ——— welcome.

Some tentative item reviews are carried in the Supplements without payment to the reviewer. If a Supplement review is later carried in the CATALOG the reviewer is paid then.

Donating

Portola Institute, Inc. is a tax-exempt, non-profit educational corporation. Donations to Portola or the CATALOG may be deducted. Retaining subscriptions to the CATALOG are $25 for one year ($17 tax deductible). Sustaining subscriptions are $100 + per year ($92 + tax deductible). Names of retaining and sustaining subscribers are given in the CATALOG.

Gifts and Informal Resale

CATALOGs and Supplements are available in quantities of 5 or more at 25% discount. Thus you can get 5 CATALOGs for $15, sell four, keep one, and come out $1 ahead. There is no quantity discount on subscriptions.

For formal resale, see p. 128.

Advertising

Suppliers, manufacturers, creators of listed items are eligible to advertise in the CATALOG. They may advertise only an item listed or their own catalog. All ads are placed at the back of the book. There are no ads in the Supplement.

Advertising rates:

full page $200 — $75 — $25 — $10 — $5

| | |
|---|---|
| full page | 10½" x 14½" |
| 1/2 page | 10½" x 7" |
| 1/4 page | 5¼" x 7" |
| 1/8 page | 5¼" x 3 3/8" |
| 1/16 page | 2⅝" x 3 3/8" |

CATALOG Policy with Suppliers and Users

The CATALOG is under no obligation to suppliers. Users are under no obligation to the CATALOG.

Suppliers (manufacturers, creators, etc.) may not buy their way into the CATALOG. Free samples, etc. are cheerfully accepted by CATALOG researchers; response not predictable. No payment for listing is asked or accepted. We owe accurate information exchange to suppliers, but not favors.

Our obligation is to CATALOG users and to ourselves to be good tools for one another.

This issue of the CATALOG (new? improved?) has higher efficiency production behind it. Produced in three weeks by five people plus help. New uptown printer for new big-time scale of readership.
This CATALOG was put together by:

Stewart Brand, Joe Bonner, Cappy McClure, Fred Richardson, Jay Bonner, Diana Shugert, Lloyd Kahn, Mary McCabe
and (store) Hal Hershey, Lois Brand, Peter Rated, Tracy McCallum, Barnaj Sopoch, Megan Raymond)
with (reviewers) Jay Baldwin, Drew Langsner, Jane Stallings, Gurney Norman, C. P. Christianson, Steve Katona, Carol Goodell, Peter Lynn Sessions, Carole Beadle, ONYX, Kate Britton, Hans Bakker, Michael S. Kaye, Steve Baer, Brooke Elgie
Sarah Kahn, Johan Mathiesen, Ken Kern, Richard Raymond, David Noton, Michael Templeton, Larry Kafka, Terry Sisson, Don Gerrard, Mrs. W. B. Mohin, Larry Schwartz, Kate Wheeler, Craig Schwatlet, Mary Jane Markley, Alan Schmidt, Roberta Becker Marshall
Ruth Rutherford, Pat Rowan, John Holt, Beatrice Farrar, Carl Mueller, David & Lyn Rae, Jur Bekker

Preparation of the CATALOG was done on an IBM Selectric Composer, Polaroid MP-3 camera, and Stat-King camera. Printing by Stacher-Traung-Schmidt, San Francisco.

The WHOLE EARTH CATALOG and Difficult But Possible Supplement is published at Portola Institute, 558 Santa Cruz, Menlo Park, California 94025 on the following schedule:

CATALOG — November
Supplement — January
Supplement — March
CATALOG — May
Supplement — July
Supplement — September

** Catalog, Whole earth Catalog*

This catalog displayed all kind of products (clothes,books, tools, machines, useful stuffs for a creativee and auto-sufficient lifestyle but did not sell directly any of those products. It was extolling the DO it yourself move. Names of sellers and prices were listed next to each displayed product.

About the same as a search engine today, this catalog was showing models and pictures of products, leading to a creative inspiration or a reproduction of a product.

*« When i was young, there was that amazing publication, named Whole Earth Catalog, which was one of the bible of my generation… It was a bit the same as Google in a paper form, 35 years before Google. It was an idealistic review with tons of crazy tools and wonderful notions.*[10] » Steve Jobs.

It is thus with one of those first models (through a magazine form) that the idea of manufacturing products by yourself was born.

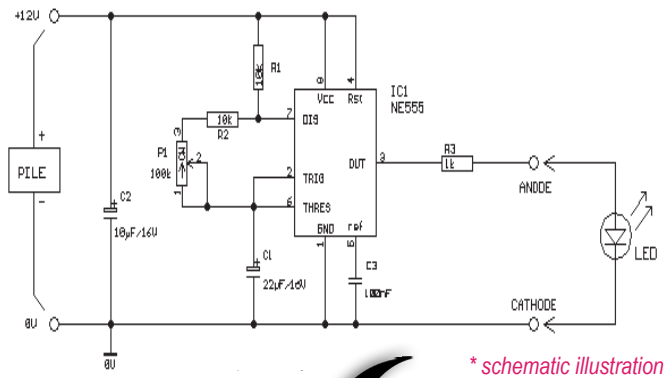
Designing by your own ressources provides a lot of advantages. We do not only understand how the product work, but also we make it more performant, more efficient, more customizable and more accessible. Today « *Do things by yourself* » is easier and easier, and more and more accessible. With the web and the fast propagation of information, we see the birth of several « *virtual* » communities looking for any news and change allowing systems of DIY to get in a virtuous circle of conception. Virtuous tends to the perpetual data upgrade of each community. Also with positive repercussions on the Human itself, who will become self-educated during the design phase of his tools, id est he will learn by himself, without any help from a teacher.

According to Bernard Stigler « *The technic is originally involved in human's constitution* » id est with technics and learning processus with the technologies surrounding us, the human beings are built intellectually but they are also an evolution with technologic tools.

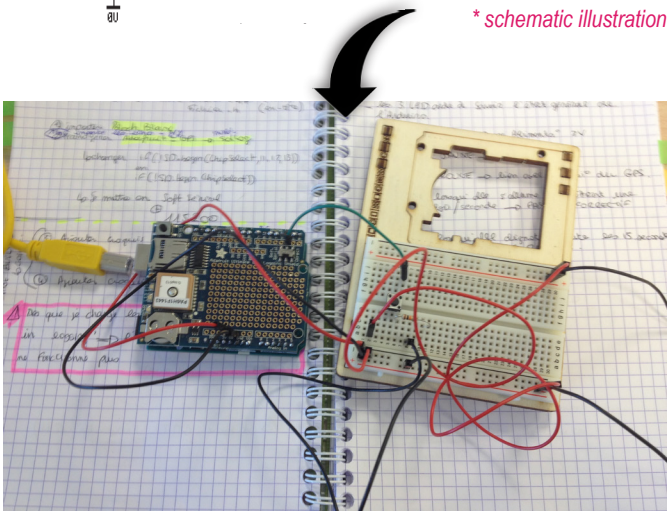
10 - Commencement address by Steve Jobs, delivered on June 12, 2005

# I) FROM HOMEMADE TO “ DO IT YOURSELF ” :

It is noticeable that for the BodyTrack elaboration, several learning methods have been used. In a first time, we had to learn the electronic language. That means being able to understand how electric systems work and also know its schematic illustration in order to be able to reproduce the circuits without damaging the system and deteriorate the material.




** schematic illustration*



** electric systems*

In this learning step of electronic, the code understanding was also necessary. This learning was relatively fast because several documents of the Arduino community was available, and of a very well quality.

Finally, creating our own need, our own tool has let us to set a self-learning, but in collaboration with communities and open-source data displayed on the web. We have also saved a considerable amount of money. We just had to buy the components to set an inexistant tool so far. It is here an important point we have to take note of. The DIY does not only gather people in same passions in order to design, create and reproduce, but also  in order to divert economical systems and mass consumption.

By creating our own products we go into an anti-consumerism system, an anti-cultural system, that means a protest culture, where purchasing capacity, hierarchy between human beings, language and identity are not taken in consideration.With this virtual DIY, powerful sharing and creative systems are then set.

## FROM THE CLOTH TO THE PROGRAM

Imagining and designing this tracker has allowed us to set a mix of textures and mediums used.
Starting from a piece of cloth, that means an assemble of wires connecting to each other and entangling with themselves to create material.
We have slowly translated into a weaving of clothes associated to a weaving of electronic components. It is then the network is creating between clothes and electronic components, becoming dependent with the others.

From this solid association between clothes and components, there is only one last transformation : to make our tool functional. It is with the program representing the « *informatics body through which one algorithms are encoded and find an expression. A program is doubled : it refers to art writing (source code) which corresponds to the that the machine produces from interpretation of the writing, which*

# I) FROM HOMEMADE TO " DO IT YOURSELF " :

*determines the execution. In numerical arts, the program adds to this intertextuality of language a performative dimension.* »[11] This program will thus create a weaving in order to feed, organize and make the system operational. The Program becomes a bond between cloth and component, but also it allows to insert the tracker into this virtual world which the one of numerical. This assemble permits to give life to the BodyTrack in a physical space thanks to its material and its association to a body, but also into a virtual world via the code and its impact on our « map » map we will talk about later in this development.

A hybrid object between real space and virtual one is created. « *This numerical hybridation is the crossing line between images, sounds, texts or physical data form their small constituants elements, generating new informations, which do not belong to the first ones. Shapes hybridations, information hybridations, object hybridations, real and virtual hybridations, which express themselves in the numerical art via interpolation, gluing, mashups and other mix, prosthesis or avatars.*[12] »

Existing in two dimensions, our BodyTrack takes life thanks to mixes and weaving of several materials and tools.

Finally, we can deduce that building objects is up to anybody nowadays. With the open-source technology and communities created around same passions, designing an object is even more accessible with the upcoming of the web.

More worrying, data being opened to anybody, it is very easy to create objects which can interfere inside people's life, it is the case of our BodyTrack.

With a mix of tools used going from electronic components to codes making it functional, this BodyTrack is only waiting for human bodies to make its job… It means tracking and hiding in people who wear it.

**However, which is going to be the method used so that our BodyTrack can interfere on other bodies ? How will the testers accept them in their life ?**

11 - « Le corps informatique à travers lequel les algorithmes de l'œuvre sont encodés et y trouvent une expression. Un programme est double : il renvoie à l'écrit d'art (code source), qui correspond à l'entreprise d'un langage de programmation, et à l'objet binaire (logiciel) que la machine produit à partir de l'interprétation de cet écrit, ce qui détermine l'exécution. Dans les arts numériques, le programme fait gagner à cette intertextualité de la langue une dimension performative » - Franck Soudan, 100 Notions pour l'art Numérique, Les éditions de l'immatériel, 2015, p 227.

12 - « Hybridation numérique est le croisement d'images, de sons, de textes ou de données physiques à partir de leurs plus petits éléments constituants, générant des informations nouvelles n'appartenant pas aux premières. Hybridations des formes, des informations, des objets, du réel et du virtuel, qui s'expriment dans l'art numérique sous forme d'interpolations, de collages, mashups et autres mixages, de prothèses ou d'avatars » - Edmond Couchot, 100 Notions pour l'art Numérique, Les éditions de l'immatériel, 2015, p 120.

# II) ORNAMENT TO CAMOUFLAGE

# II) ORNAMENT TO CAMOUFLAGE:

Going inside peolpe's life has been the second step of our work. Indeed, in order to get the proliferation of information, it has been mandatory to live inside a human's body. To reach our aim, we have chosen three testers living in the city of Chambery.

Amel Sonia Yoann Martin

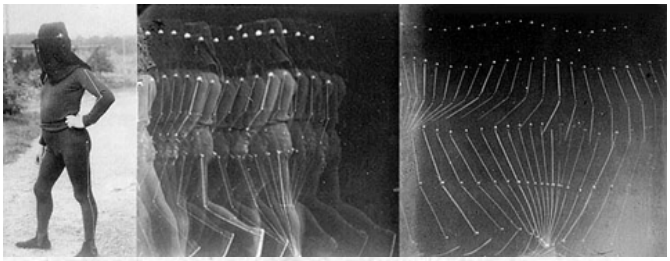
**Those three testers have been wearing the trackers during two weeks. Living with it, how did they accept it ? Why was it necessary to integrate the BodyTrack to a body ? Which method have we used to hide the BodyTracks ? What are the dangers of such an initiative ?**

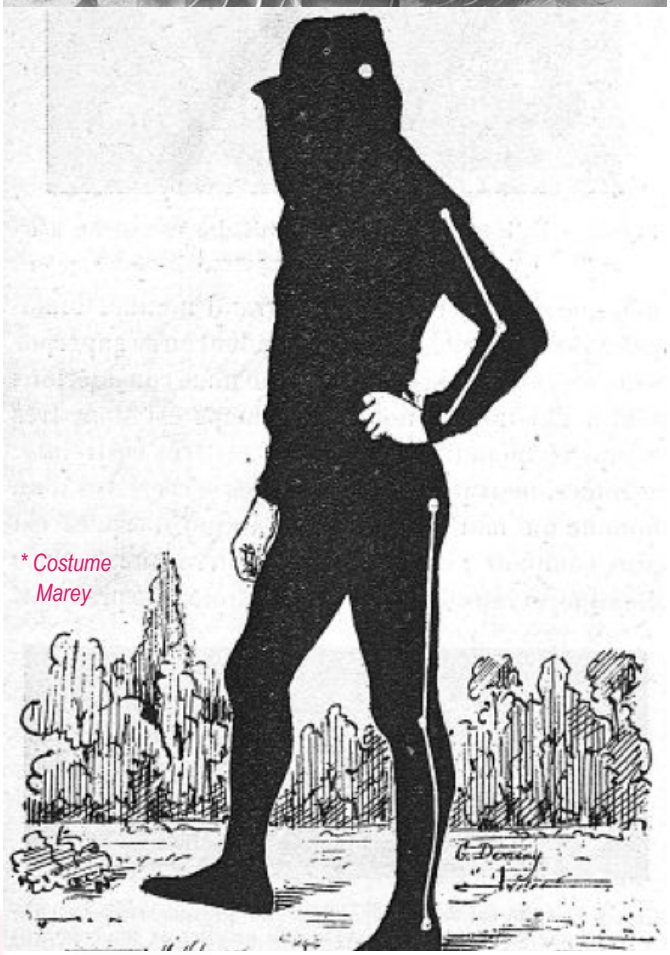
We will try to provide an answer to those questions during this part concerning the ornament and the camouflage.

## A) ENHANCE FOR REASSURE ... ORNAMENT:

### HIDE IN THE LIVES OF TESTERS :

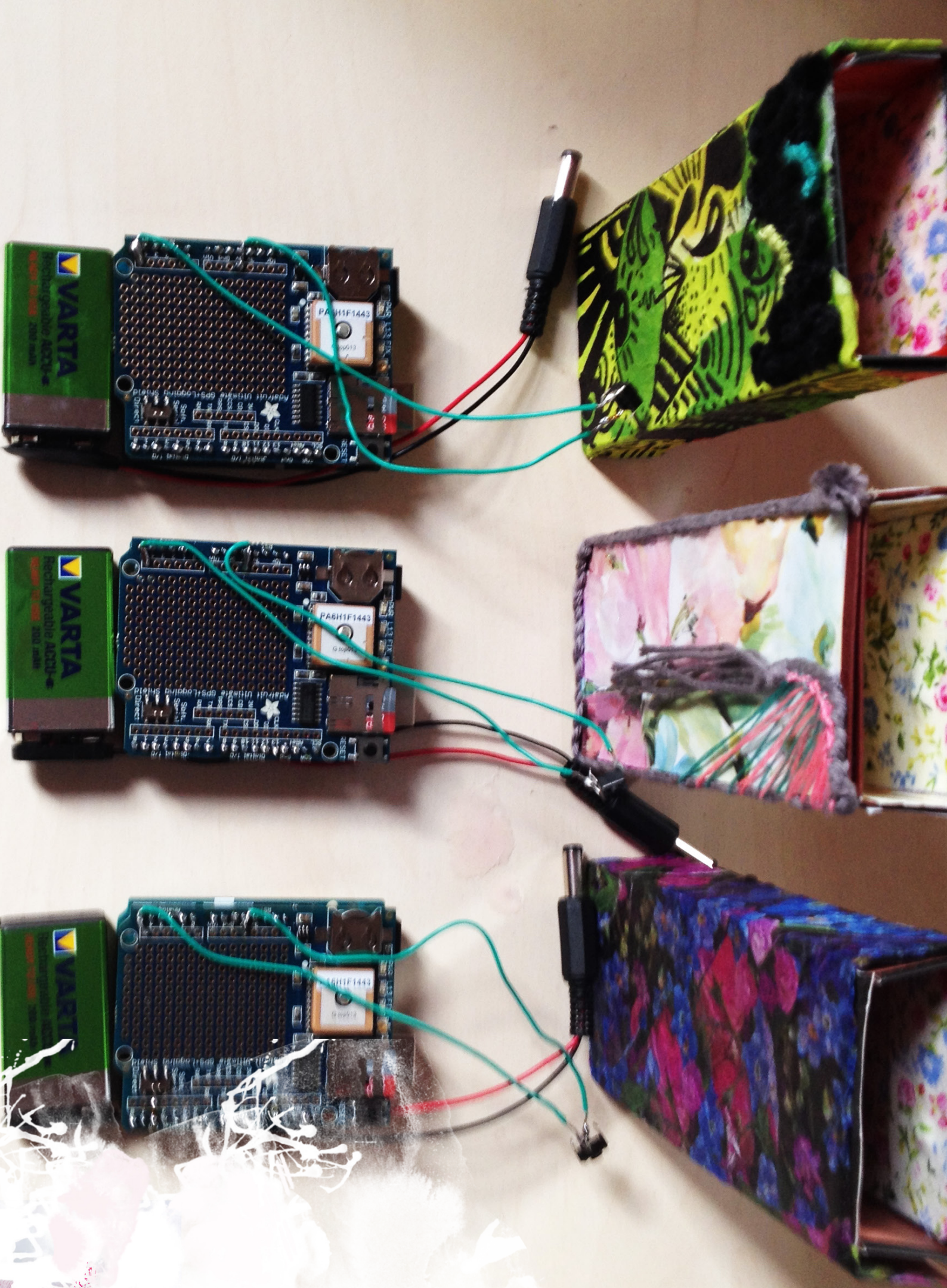
To measure the proliferation of the information, we have decided to integrate the trackers
on the human body of the three testers.
Taking the exemple of Etienne-Jules Marey who used suits on which were installed white color sensors, which were then installed on human body, He was one of the first men to collect data from body movement, thanks to the sensors, and the technic of chronofotography, which consists in taking a succession of photos.





** Costume Marey*

We have realized three capsules to cover our BodyTrack. They have the shapes of an electronic box, collecting and classifying each move of the testers.




* BodyTrack with Capsule

# II) ORNAMENT TO CAMOUFLAGE:

To design those three capsules, we have uses several techniques such as sewing, weaving, gluing and braiding, allowing to totally cover the BodyTracks. Those capsules have given a total cover to the trackers, but also a second skin, a second life to those tools.
In order to collect the most of the data and to vary it, we have spread over the city of Chambery 13 connected Nympheas. Those Nympheas with colored flowers shape will purchase all the data generated by the testers wearing the BodyTracks. Once the data collected by the Nympheas, they will re appropriate it and will disperse it over a map where personal data will be shown.
Realizing these capsules and these charming and seducing Nympheas takes then its sense. Those nice-looking apparences create a proximity with the human body and also reassure and strengthen people with the fact that nothing can happen to them.

## ORNAMENT:

The apparence of things and of what surrounds us is established in our society since ever. We can appreciate a thing, thinking it is good, or we can not appreciate it, but this remains in a very objectife way, because the esthetic of things is very personal and depends on fashion and culture which surrounds us.
Being able to give an apparence to our trackers and our tags named Nympheas will allow us to create a proximity with our body.

Displaying ornaments on our tools to make them close to the body has been the technic we have used. According to Christine Buci-Glucksmann, the ornament permits to decorate things. The ornament is then a « *beauty preventing against chaos, and provides an equilibrium for what we could name appearance* »[13].

Id est giving « *beautiful* » shapes helps people to accept things better. Giving a second skin to the capsules will help people to accept it inside their life. However, this appearance is only an illusion, whose major aim is to record personal data, as Nympheas do too.
We can give a real exemple, the one of laptops from the company Apple. Those computers are famous for their apparence and their smooth design, simple and high standard. Those computers have the same functions as the major part of other computers we could find anywhere else. Despite the same functionalities, Apple proposes prices relatively higher than the average price of their concurrence.

However, in spite of those high range of prices, Apple sells is growing each year, why ? We can explain this phenomenon by the apparence of the product. This ornament provided by Apple company is charming the consumers who are ready to invest more money in a product with seducing shapes, rather than a product cheaper and more performant. It is with this exemple that we can see the power possessed by this notion of ornament and appearance.

## BETWEEN SURFACE AND DEPTH:

Besides the ornament hides something which is a composition principle, id est a style. Christine Buci-Glucksmann gives the exemple of the artist Klimt

** Klimt*

13 - Christine Buci-Glucksmenn, Les transgressions de l'ornement, du modernisme au virtuel

# II) ORNAMENT TO CAMOUFLAGE:

who uses an aquatic and an organic fluidity in his compositions, allowing us to travel inside the patterns he proposes. He composes with heterogeneous and creates with different lines « a inorganic battery sex »14. That means he proposes to see the body via a neutral and innovative way.

He « *describes states of contemporary sensibility, where body neutralizes itself, suspends itself inside a neutral dimension* »[14].Going from neutral to appropriation, Klimt enters into a style where patterns and assembles take an importance. As the Nympheas whose style refers to the Mexican culture, these flowers become a new element, having a noticeable importance in the image and artistic style they send back.

** Nympheas realised by Carole Brandon*

Nympheas and capsules represent a kind of second skin covering and hiding their own organism. This « skin » takes the shape of a surface, defining itself as an « exterior part of a body, an object, which circumscribes the volume taken by this one. »[15]

The artist Chrisot has well appropriated this notion of surface and space, realizing in 1995 the ''Reichstag empaqueté'' in Berlin. This work consisted in packing the German parliament. The building was totally covered by a cloth and some ropes, creating a huge sculpture.

This canvas spread over the parliament, transformed as a true clothing, an exterior skin, an exploration surface inviting rediscovering the Reichstag. Covering such a building, Christo gives a new readability to the building. This packing reveals the shapes and volumes of the building, and also learns us to re-discover the architecture.

It is with this exemple we can realize that the surface notion does not only imply a lack of deepness at a visual level, but also focuses, surface effects, flow lines, diagonal compositions, becoming ornamental stylistic ideas. This surface ornament transforms into a creative and decorative principle. The ornament creates abstract which are neither in the abstraction or figuration, but both at the same time, which leads to a « decorative Life »[16].

From this decoration, a new way of seeing things surrounding us was born. This decoration, this ornament will allow mixing textures, images, ... create hybrid surfaces between numerical and physical spaces. It is the case of our BodyTracks and Nympheas.

14 - « un sexe à pile de l'inorganique » - M.PERNIOLA, Il Sex-appeal dell'inorganico, Torino, Einaudi, 1994

15 - Area: definition of CNRTL (National Resource Centre Textual and Lexical)

16 - Christine Buci-Glucksmenn, Les transgressions de l'ornement, du modernisme au virtuel

# II) ORNAMENT TO CAMOUFLAGE:

Today, we will have a surprise of several shapes, such as surface, curtain, carpet, shapes which can be associated to tapestry such as beautiful paintings on cloth by Matisse. This will inscribe intangible events on a surface. An art of mixing, processus and surface will then be set.

Besides such a system elaborated in order to be liked and reassure, should we be suspicious ? Is it finally dangerous to accept these « decorative ornaments in our life » ? The following part will deal with the previous interrogations.


** Capsule + Nympheas*

# II) ORNAMENT TO CAMOUFLAGE:

## B) CONCEALING TO CONQUER ... CAMOUFLAGE:

### CAMOUFLAGE TO HIDE:

As we have seen it, those decorative ornaments give a kind of second skin to objects surrounding us. This skin covers an organism, a system whose goal is very far from its apparence.

Besides the Nympheas whose shapes can be associated to flowers, there is a system whose aim is to collect and transform body information recorded by the arduinos. Concerning the BodyTracks, a complex system is hidden, which can record continuously all bodily data on any individual wearing it on his body.
From this observation, we can say that behind a decorative ornament the notion of camouflage is always hidden. But what is camouflage ?

The camouflage is by definition « *making something unrecognizable, in order to transform its identity* »[17]. That means in other words, giving a signification via the image it refers to, totally opposed or hidden.

According to Christine Buci-Glucksmenn, the image becomes "skins and camouflages". The artist Warold takes back this idea of camouflage and realizes a full set of it.

** camouflage by Warold*

17 - « Rendre méconnaissable, en vue de donner le change sur son identité » - Camouflage: definition of CNRTL (National Resource Centre Textual and Lexical)

As we can see it, the patterns which are apparently figuratives, transforms in abstract things via the assemble of elements together. The color which transforms them is repetition which organizes them. Harold uses the camouflage as a « *traumatic realism* », he convolutes it.

The visual camouflage allows him ti transform death, to enhance it. There is in the ornament and camouflage a possible way to hold up and draw a portrait of violence by reincarnating it. This reincarnation is a way of making things such as death, violence, boredom, fear and danger easier to be accepted. That would mean the camouflage softens the appearance of things to then better make it being accepted.

This is the case of our testers who have quickly accepted the colored capsules in their life. Amel Sonia, the only girl of the three testers, has chosen the capsule with very feminine surfaces composed of flowers, weavings and spangly. Martin and Yoann have been to capsules whose style refers to « *cartoons* » in other words composed of drawings and gluing. Without having here any cliché about sexual genders, we can however note that each person accepts the camouflage according to its personality, his bonds with things and his curiosity.

### CAMOUFLAGE FOR MONITORING:

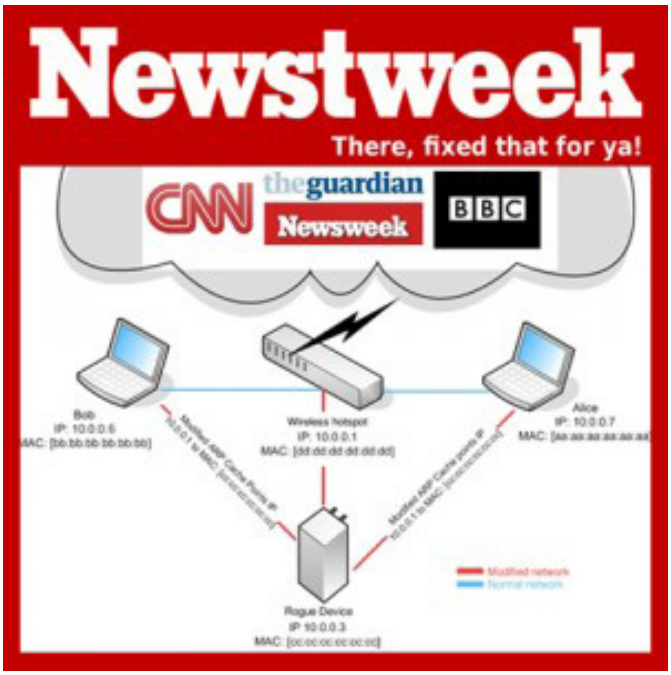
As we have clarified it before, the camouflage and the ornament are appearances which will hide intern systems which could be very different.

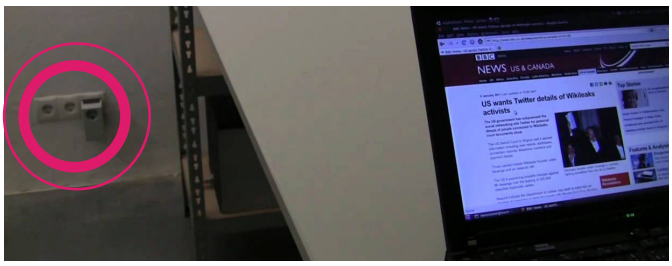
# II) ORNAMENT TO CAMOUFLAGE:

We will show here tangible cases in order to realize how far we can go, and also prove that those camouflages can hide dangerous systems for the society.

Men in Grey is a group of Hackers from Berlin who uses Hacking in order to denounce and show the dangers found on the net, and also the informations flowing on this one.

Hacking is a technique which consists in manipulate systems to divert it from their first use. By using this technique, the Men in Grey will realize « Newstweek ». Newstweek has the shape of a small casing inoffensive which can be plugged in electric sockets.




** Newstweek by the Men in Grey*

This small casing will allow to control local wifi networks, which will transform and change the content of data visible on the internet. The two designers Julien and Dania have elaborated an instruction for use of this homemade device, in order to make it accessible and respect their philosophy about open-source data.
This project is a pioneer work, highlighting the instability of contents on the internet. This projects shows that it is non convenient to truly trust the information flowing on the net. But there is something more deplorable, during a hackers meeting, the Men in Black have decided to use their casing in order to evaluate their job. Transforming the data on the net during an entire day, the hackers present in the meeting never found the source of this « attack », and who was hacking the system. Nobody had paid attention to the casing, and nobody had noticed it was plugged in during the event...
Here the notion of camouflage takes all of its importance. By hiding in space a classic object, with totally simple and ordinary appearances, the Men in Grey have managed to sow panic among their fellows.
This process shows that it is possible to infiltrate easily inside people's life without they even realize it.

The Men in Grey are finally artists highlighting dangers and flaws of a system.
This group shows that other companies, other governments, ... can appropriate some spying systems having camouflage (we will see exemples further in this development).

Concerning the Nympheas, as the Men in Grey case were talked before, they-also with the capsules-have collected data trying to dissolve inside the environment in order to make their existence invisible to the user's eyes.

# II) ORNAMENT TO CAMOUFLAGE:

## CAMOUFLAGE IN THE DIGITAL ERA:

If we re use Christine Buci-Glucksmenn's citation «*The image becomes skins and camouflage* »[18]. What can be said about images « flow » displayed on the internet? Do images and data we see going through the web represent a danger for our personal data ? If the images are only camouflages, what is hidden behind this second skin ?
It is noticeable that the numerical image refers to any acquired image, created, handlesd and stocked in a binary form, that means a « numeration system in which one the only used symbols are 0 and 1 »[19]. Behind each image, behind each visual representation represented inside a numerical is hidden a combination of 0 and 1.
To be able to model and transform this language, the code and this algorithm will be set.

« *The algorithm shows the logical structure by which one the artist formalizes his work for the computer. It thus goes closer to a double processus where elements and procedures of the initial idea are described and chained up into a row of operations whose execution will produce real experience of the work. Both prossecus are linked and jointly operated, the problem of initial art is affected by the progressive sketch of its programmable translation.*»[20]

This algorithm will thus become a writing, a dialog between camouflage (which is numerical art) and the content of this one. With the algorithm we will manipulate and collect information without appeal the intention of the internet user.
Let us have a look at a real exemple, the Facebook case.
Facebook social network is defined by the web as « *a social online networking service allowing people to publish information controlling their visibility by different categories of persons.* »
This network allows to communicate with « friends » and to spread images, videos, status, etc... This social network transforms then into a virtual extension of ourself.

To make this system functional, algorithms have been used. But behind this skin of images, other algorithms have been hidden and realize wan other job which is way more worrying. The algorithms collect all the personal data we can rely on the platform, to then sell them to companies.

However, another scandal concerns Facebook during those past months, concerning its collaboration with more of 70 countries in order to monitor their users. France has the fight position of the list of countries which realize the most of investigations on their citizens. With this model, we can notice that from a very simple platform realized to communicate with real friends via its appearance, it is transformed now into a network of information where personal data are spread over and sold to the entire world. A real business of data is then set without we could do anything!

**From a simple exemple where appearance reassures us, we are now trapped into spying systems where investigations about data is set.**
**We users, webssurfers, citizens, humanity, women and men, can we take back the control of our data ? Can we set systems which could fight against machines ? This is the subject we will deal with and we will try to provide some answers in the following part.**

18 - « L'image devient peaux et camouflage » - Christine Buci-Glucksmenn, Les transgressions de l'ornement, du modernisme au virtuel.

19 - « Système de numération dans lequel les seuls symboles utilisés sont 0 et 1 » - Binary: definition of CNRTL (National Resource Centre Textual and Lexical)

20 - « L'algorithme désigne la structure logique par laquelle l'artiste formalise son œuvre pour l'ordinateur. Il se rapporte ainsi à un double processus où les éléments et procédures de l'idée initiale sont décrits et enchaînés en une suite d'opérations dont l'exécution produira l'expérience réelle de l'œuvre. Les deux processus sont coalescents et menés conjointement, le problème d'art initial étant affecté par l'ébauche progressive de sa traduction programmée » - Franck Soudan, 100 Notions pour l'art numérique, Les éditions de l'immatériel, 2015, p 10

# III) DEPENDENCE TO RESISTANCE

# III) DEPENDENCE TO RESISTANCE:

After making a handmade tool, having installed it a hiding it in the human body, let us slowly go to the side of testers. How do the testers have appropriated this prosthesis? What impact have they had on the machine? Have they tried to get rid it or live with it ? How was translated the data and operated? This is what we will see here.

## A) LEARNING TO LIVE AND UNDERSTAND THE MACHINE:

### RECORDING THE DATA... THE MAP:

Once our capsules have been disposed on the body of our three testers, the aim was to find out how they were going to appropriate this extension, and also to record their actions, their moves, in order to measure the dispersion and proliferation of their personal data such as algorithm previously seen.
In order to view and operate the data recorded by our tracker, we have implemented an algorithm allowing to read and put image on each of our numerous data. The collected data took the following form:

*$GPGGA,141651.000,4533.5687,N,00554.7273,E,1,07,1.18,326.0,M,48.4,M,,*62 $GPRMC,141651.000,A,4533.5687,N,00554.7273,E,2.33,343.70,110515,,,A*60*

Once the algorithm performed the machine started to decode each of the data, which were then deposited on a map.
The map is a « *conventional representation, generally flat, of concrete phenomena or even abstract, but still locatable in the spaces* »[21]. By creating a virtual map available on the net, several advantages then started up. We can visualize and locate our three testers thanks to lines performing each of their trips.

This virtual mapping allows to understand within a few minutes where we stand, how many people have moved and where have they been. This « *virtual mapping fills habitus between the traditional territory and space of digital communications* »[22], that is to say, a proximity is created between the tester and the digital map, constituting a double « *digital* » of its own identity, allowing us to understand and visualize his life via a map and lines.
Anne Cauquelin demonstrates in her book “the site and landscape”, that ambiguity are created between the notion of space, site, place and landscape suffering from a disruption since the arrival of the digital era.
She explains that these terms involves the body as well as our identity in the notion of space and revamped website. By understanding this, our map becomes important. By living in both physical and digital space of our testers, an exploration and a rediscovery of a site and a body is then set.

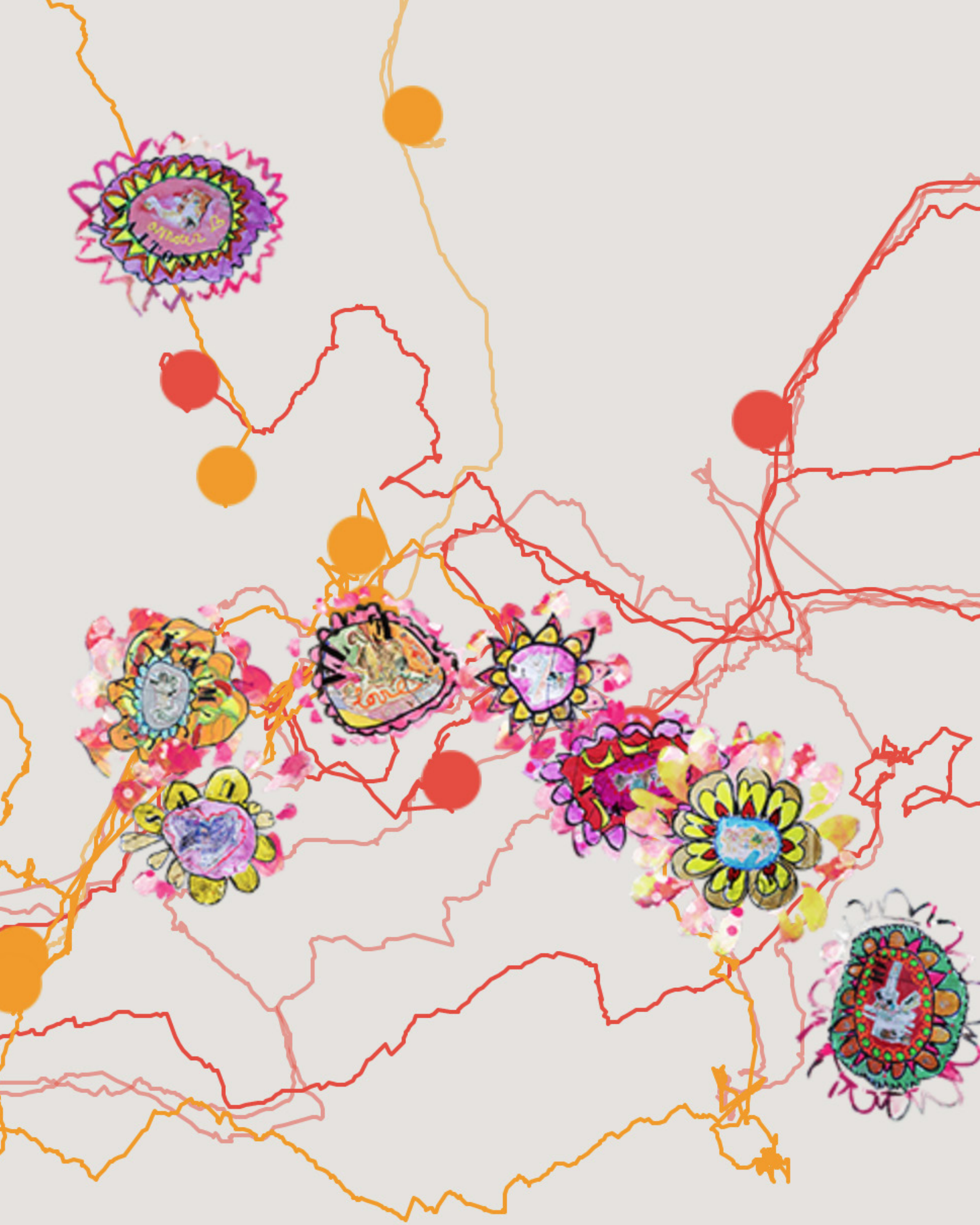
« *With this site, we stayed in the animated landscapes known and recognized. These are lines and curves, hollows and bumps, water and clouds; far away in the tranquility of the night, singing a frog made to believe the strange. The land is there. The site between a space and a place.* »[23]

The site is in between, between the physical body and virtual path, our map takes our life between two temporality.

21 - Map: « représentation conventionnelle, généralement plane, de phénomènes concrets ou même abstraits, mais toujours localisables dans l’espaces » Larousse definition.

22 - « cartographie virtuel comble les habitus entre le territoire traditionnel et l’espace des communications numériques » - Anne Cauquelin, Le site et le paysage, p 94, Quadrige, 2013.

23 - « Avec le site, nous sommes restés dans les paysages animé connus et reconnus. Ce sont des lignes et des courbes, des creux et des bosses, de l’eau et des nuages; au loin dans la tranquillité du soir, le chant d’une grenouille fait croire à l’étrange. La terre est là. Le site dans l’entre deux d’un espace et d’un lieu » - Anne Cauquelin, Le site et le paysage, p 88, Quadrige, 2013



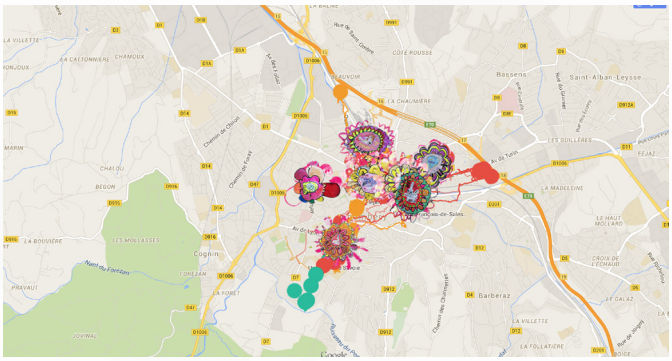


Google

# III) DEPENDENCE TO RESISTANCE:

## CREATE A LANDSCAPE:

But what do we really see when we enter this virtual card? When we enter this virtual card called Nympheas like flowers scattered in the city of Chambery. We see in a first time forms composed of colorful flowers, lines and points, all set on the map of the territory of Chambéry.



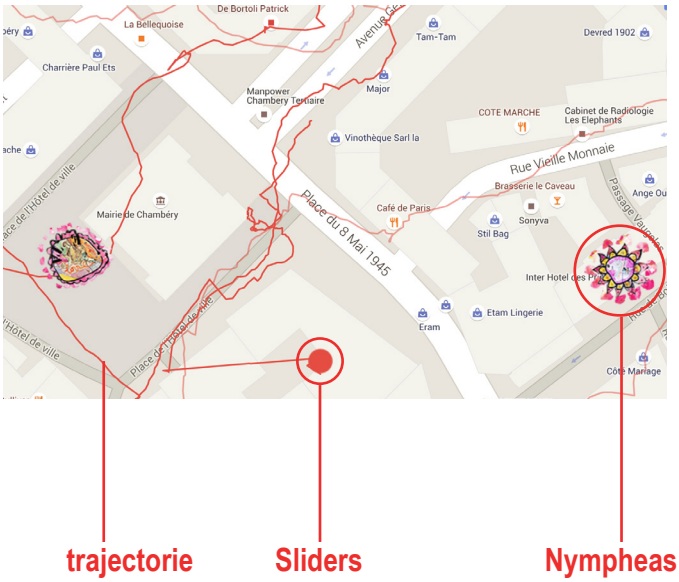
The user will intuitively zoom on the map to read the map more clearly and in depth.
Once the approximation made, the navigator will be able to distinguish a color opacity between different lines. These lines, by going through each other, crossing each other, weaving with each other, will generate a kind of network of paths and movements. The trajectories transform as « a flattening, they metamorphose the temporal articulation of places in a spatial sequence of points »[24]. These paths represent temporal movements materialized in space,translated as «trajectories» in the card, while telling a story ... the history of testers. Through these movements recorded, Users of theTracker build a landscape, the landscape of their daily life.

This map allows us to enter into the life of our testers. We can here, watch them, observe them, and know where they are. We become observers, but also in our turn tracker. This position which can be funny can also prove to be unfriendly and creates discomfort.
By observing the movements of our testers we enter their life without even they can know it.

Obviously these trajectories were indispensable to the creation of our landscape. However, other essential elements have been set in order to grow up and provide answers to our original problem:

- **Nympheas**: 13 flowers scattered in the city of Chambéry, were then geo-located and placed on the map. Installing the Nympheas on map can show their importance in real space. But also show that their presence was not there by hazard. (We will see later the impact it brings to our map).

- **Sliders:** Represented by colored dots and disposed at each start of trajectories. The sliders are the only clickable items from our map. If we rely on any of these points, it will follow the path by activating a soundtrack. (the role of sound will be explained in more details later)
With trajectories and Nympheas in the physical and virtual space, and the various sliders activating sounds, a landscape will then be created trying to take his place between physical and virtual data.




24 - « Mise à plat, elle métamorphose l'articulation temporelle des lieux en une suite spatiale de points » - Michel De Certeau, L'invention du quotidien, art de faire, p 59

# III) DEPENDENCE TO RESISTANCE:

## LIVING WITH RULES:

We must not forget that what we are seeking here is how to measure the proliferation of information in the physical and virtual space.
To answer this question, we have inserted on our testers three hidden trackers.
The testers have lived for a week with BodyTrack without knowing the use of those trackers. During this period all their data has been recorded and stored, then spread on our map with a clear color stamp. During this period the testers have appropriated the tracker. They learned how it works, how to recharge, and how to live with it.

On May 12, Amel Sonia, Yoann and Martin, our three participants received an explanatory email regarding the BodyTrack with whom they had lived for some time now. From that date the participants entered a game, which will involve them in a system where their personal data allow to transform and change the future of the game.

**- Mail on May 12th -**

---

« Finally, here are the **rules of the game** with the Arduinos that you have been using now for several days.
First of all the Arduinos that you wear allow to geolocalize your body (permet de géolocaliser votre corps). Every journey you make is recorded on a map leaving a trace on it.

Be aware that each Arduino has a soundtrack that you can change by going through the paths that you will follow.
HOW TO PLAY AND TRANSFORM YOUR SOUNDTRACK:

1 - THE TAGS - (FLOWERS)
As soon as you pass near a tag (flowers scattered in Chambéry), new sound effects will be added to your soundtrack.
CAUTION: A tag is «pockmarked». This tag multiplies the effects already present to create a «storm effect» making the inaudible tape.

2 - DESSAIX STREET :
The passage in the street named Dessaix clean the soundtrack by removing all accumulated glitch and sound effects.

3- BUTTON (arranged on the Arduino):
When you press the button you decide to increase the volume of different sound elements.

4 - MEETING:
The meeting is at the intersection of two Arduinos on the map. This meeting may have two distinct effects:
**1 -** The volume of each of Arduinos will be equalized.
**2 -** A pockmarked Arduino which would cross another one will loose the virus and transfer this virus to the other one.

Finally, if you will only be authorized to listen to your own sound tape at the end of the experiment.
**IT IS THUS YOU TURN, TRY TO CREATE A SOUND LINKED TO YOUR MOVES AND TO YOUR PERSONALITY.**
**DO NOT LET YOURSELF TRAPPED BY THE SYSTEM AND OTHER PLAYERS. BE SMART, TRICKY AND INNOVATIVE !!!!!!**

---

# III) DEPENDENCE TO RESISTANCE:

It is then from this point that the importance of the map, Arduinos and body takes all its importance.
We can realize that each arduino has a soundtrack which can be editable ; that the flowers are actually tags which allow editing and adding some sound effects on each of the arduinosas f ; that the player can take over the control of his tracker via the button installed on his BodyTrack ; that some places are indexed as rifts of the system where it will be possible to erase the data recorded in the tracker.
By implying the testers in kind of a game, we can propose to imply themselves in a universe in which one everything is allowed.
With this notion of being able to transform the soundtrack of the arduinos via moves of the body, the players will be able to transform their data and the ones of other players.
The sound generated will then allow us to see what each player has set in his mind in term of tactic and implication, but also, measure the dispersion and the proliferation of information in front of the trajectories, sounds generated on the map and potential bug generated.

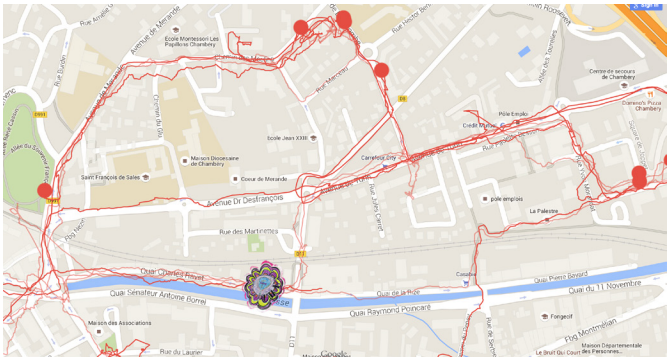
# III) DEPENDENCE TO RESISTANCE:

## B) RESIST AND REGAIN CONTROL:

### AWARENESS AND TACTICS:

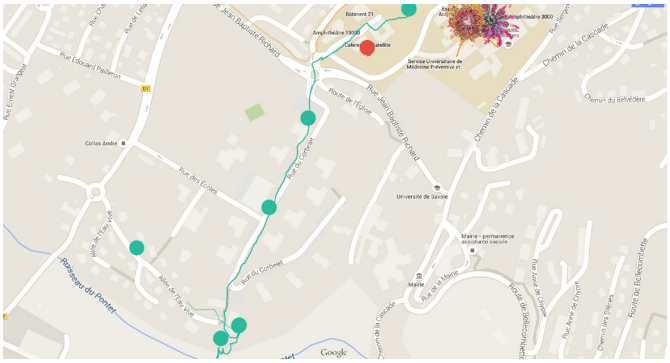
As we have already repeated it before, three persons are involved in this game. After they got the rules, we have organized all their new data via dark colors to make the difference between colors without instructions. From this point, we have noticed in a first time that the players have had a very different behavior :

- A very implied player, who tried to explore and find the flowers in order to generate the maximum of sounds, variated and innovative. (red color)



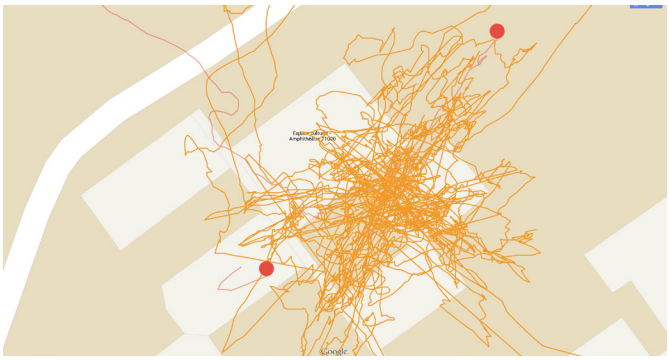
-A player who used his BodyTrack during his daily life realizing trajectories from his house to his job place.

-A player who did not use that much the tracker, but who tried to bug the machine with the button on his BodyTrack. We will talk about this exemple more precisely in the following part. (green color)



With only three players, we have seen an apparition of profiles very different from each other with different involvement and way of playing.
From this moment, where the rules has been defined and explained, we have observed very different trajectories and space exploitation on the map. Some players have dispersed themselves in the space.

Some other have tried to generate unexpected shapes on the map, such as the following photo.



Moreover, we have noticed some ritual phenomena such as the following picture :

If we pay attention to this image we notice that Amel Sonia, represented by the red color, always takes the same route to go to the « Jardin des senteurs ».

# III) DEPENDENCE TO RESISTANCE:

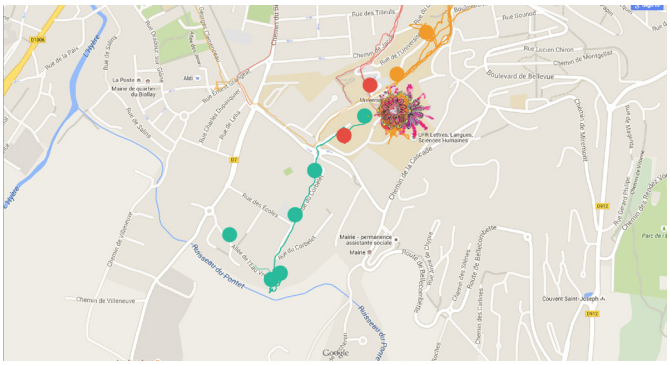
As far as Yoann is concerned, with the yellow color, often goes to this garden too, but sometimes takes the route opposite to Amel Sonia's one, while they both start from the same starting point (the university).
We could talk here about habits and rituals set in their respective life.

Two other analysis have been made. Some players have tried, once they knew the rules, to explore each one of the flowers in order to edit their musical soundtrack, listen to the following trajectory .

However, none of the players has tried to delete their soundtrack as proposed in the rules established on may 12th. The players have tried to create only sounds thanks to their moves in the city and they did not try to delete anything they had created.
It is through several observations that we can say players have elaborated strategies defined by « the calculation of strength ratio which is possible as soon as a ratio or a subject of wanting is isolable. »[25] in other words, as soon as the rules have been told, some noticeable changes have been recorded. The players have elaborated strategies to be able to produce and generate sounds and shapes on the map.

## MACHINE TOOL AS:

From these observations concerning the change of behavior in the game of the three testers, another phenomenon, even more interesting has occurred, between bug of the machine and willpower of one of the player to bug the system.
Indeed, as we can see on the map, one of the player has only done a few trajectories. The green color never appears in the central area of the city, where the Nympheas were scattered, neither it appears in the suburbs of this area. Only one line located near the university has been realized, and on this one, more of five tags have been recorded by the machine.



Without knowing what happened concerning this trajectory, we had a quick meeting with the player. This one has explained us that he had clicked on the button located on the arduino during fivee minutes. This excess, which is supposed to raise the volume of the sounds on the arduino, has crashed both the code and the trajectory of the machine.

« *This bug means insect in English and defines usually any form of dysfunction. At the same time error and parasite, such an ambiguity is liked by artists, who play with these accidents and with hazard in order to reveal hybrid shapes, unexpected ones. In numerical art, the bug disturbs to mix, deactivate, reactivate, which forces to a mobility of the creation and the mind.* »[26]

From this bug, we have been able to highlight a surprising phenomenon. Pushing continuously the button has cut and destructured the trajectory and the sound on the map, but also modified the information recorded in the GPS data. As we can see it on the next picture, those data represent the writing generated by a BodyTrack during the 5 minutes of pushing the button.

25 - « Le calcule des rapports de forces qui devient possible à partir du moment ou un rapport ou un sujet de vouloir et pouvoir est isolable » - . Michel De Certeau, L'invention du quotidien, art de faire, p 59.

26 - « un mot anglais signifiant « insecte » et désignant couramment tout type de dysfonctionnement. À la fois erreur et parasite, une telle ambiguïté plaît aux artistes qui jouent de l'accident et du hasard pour révéler des formes hybrides, imprévisibles et inattendues. En art numérique, le bug perturbe pour mélanger, désactiver, réactiver, obligeant à une mobilité de la création et de la pensée » - Carole Brandon, 100 Notions pour l'art numérique, Les éditions de l'immatériel, 2015, p 48

click
$GPRMC,153216.000,A,4533.4642,N,00554.5961,E,3.35,168.02,120515,,,A*6C

$GPGGA,153217.000,4533.4634,N,00554.5964,E,1,05,1.28,408.3,M,48.4,M,,*68

$GPRMC,153217.000,A,4533.4634,N,00554.5964,E,3.64,184.48,120515,,,A*61
click
$GPGGA,153218.000,4533.4625,N,00554.5961,E,1,05,1.28,408.3,M,48.4,M,,*62

$GPRMC,153218.000,A,4533.4625,N,00554.5961,E,3.49,188.08,120515,,,A*6C
click
$GPGGA,153219.000,4533.4617,N,00554.5961,E,1,05,1.28,408.2,M,48.4,M,,*63

$GPRMC,153219.000,A,4533.4617,N,00554.5961,E,3.41,185.70,120515,,,A*66

$GPGGA,153220.000,4533.4609,N,00554.5961,E,1,05,1.28,408.2,M,48.4,M,,*66

$GPRMC,153220.000,A,4533.4609,N,00554.5961,E,3.15,189.53,120515,,,A*6F

$GPGGA,153221.000,4533.4597,N,00554.5962,E,1,05,1.28,408.1,M,48.4,M,,*63

$GPRMC,153221.000,A,4533.4597,N,00554.5962,E,4.71,170.63,120515,,,A*69
click
$GPGGA,153222.000,4533.4586,N,00554.5963,E,1,05,1.28,408.1,M,48.4,M,,*61

$GPRMC,153222.000,A,4533.4586,N,00554.5963,E,4.08,179.37,120515,,,A*6D

$GPGGA,153223.000,4533.4577,N,00554.5961,E,1,05,1.28,408.0,M,48.4,M,,*6D

$GPRMC,153223.000,A,4533.4577,N,00554.5961,E,2.96,197.69,120515,,,A*6A

$GPGGA,153224.000,4533.4568,N,00554.5957,E,1,05,1.28,408.0,M,48.4,M,,*61
click
$GPRMC,153224.000,A,4533.4568,N,00554.5957,E,3.45,197.56,120515,,,A*65

$GPGGA,153225.000,4533.4560,N,00554.5951,E,1,05,1.28,407.9,M,48.4,M,,*68

$GPRMC,153225.000,A,4533.4560,N,00554.5951,E,2.72,200.85,120515,,,A*6C

$GPGGA,153226.000,4533.4552,N,00554.5947,E,1,05,1.28,407.8,M,48.4,M,,*6C

$GPRMC,153226.000,A,4533.4552,N,00554.5947,E,3.16,194.76,120515,,,A*68

$GPGGA,153227.000,4533.4544,N,00554.5941,E,1,05,1.28,407.7,M,48.4,M,,*63

$GPRMC,153227.000,A,4533.4544,N,00554.5941,E,2.86,205.25,120515,,,A*6D
click

# III) DEPENDENCE TO RESISTANCE:

In theory, the display of the clicks should appear continuously and repetitively. But this did not happen. The display of the clicks has been deactivated deciding when they had to be displayed inside the code. Trying to disturb the machine, this one has tried to control its own data trying to control its own system with the number of display of « *Click* » in the code. However, the display of data was not controlled by the system on the map. It is thanks to this precise point that we have detected a problem. Now the following question is to know how does the machine decide to activate or not a click ?So far this remains without any answer.

Trying to take the maximum profit of his tracker, Martin managed to sow the trouble in his own data, but he also used the machine like a wand , like a tool with which one he tries to create a new phenomena on the map. Those information and the data diffusion of Martin have been not only cheated by the machine, but he highlighted a major problem. The machine becomes its own enemy and the user becomes manipulative, pointing of troubles.

## UNE PERTE DE CONTRÔLE:

Finally, via this map we can observe and listen to a certain scattering of personal data of the three players. Going from intimate data, we have slightly penetrated into bug creation and interrogations concerning what has been given back by the machine.

But if we take a concrete exemple in order to better understand and picture a case of information scattering.
Have you heard about Edward Snowden ? He is an ex-employee of the CIA in the information technology field, and under contract with the NSA (National Security Agency). Snowden has published a rift he discovered. This discovery was about the army device and the intelligence service, who secretly operates and violating the basic democratic rights, such as spying and phone-tapping of citizens.
The World Socialist Web Site calls any worker of the world to defend Snowden, who is now suffering from a violent attack from the american government. This man fears for his life. The american government has launched a criminal investigation on this man ; some policy instances have denunciated his acts as « *treason* »; and his execution has been asked. He is currently submitted to a worldwide man chase, the american government is looking for his capture and his extradition.

Giving these secrete information public, but which do not respect the confidentiality of citizens, the government is trying today to erase Snowden. However, the information spread by this ex-agent has been scattered and hidden on social networks. The web has been involved to this diffusion of information, realized by citizens and system. This diffusion has been so big that the american government did not have it back. The World Socialist Web Site calls any worker of the world to defend Snowden, who is now suffering from a violent attack from the american government. This man fears for his life. The american government has launched a criminal investigation on this man ; some policy instances have denunciated his acts as « *treason* »; and his execution has been asked. He is currently submitted to a worldwide man chase, the american government is looking for his capture and his extradition.
Giving these secrete information public, but which do not respect the confidentiality of citizens, the government is trying today to erase Snowden. However, the information spread by this ex-agent has been scattered and hidden on social networks. The web has been involved to this diffusion of information, realized by citizens and system. This diffusion has been so big that the american government did not have it back.

# III) DEPENDENCE TO RESISTANCE:

This man represents someone revealing a danger in a system, has disturbed and destabilized governments but he also permitted to billions of humans to open their eyes on unacceptable things.

With this exemple we can realize that data can be spread over really quickly, faster than we could imagine it, and thanks to the help of the internet and numerical technologies. Governments use machines to monitor people, see their own spying systems going against them : The receptor of data machines turns into a spreading information machine. Today, governments, machines, numerical tools etc... express themselves as stable, representing any danger. However, rifts can go back against systems and make the light

**over human interventions. Either Snowden or the player of the Nymphea project, they managed to enter the system and create a data bug.**

# CONCLUSION

Eventually, thanks to the data and ressources on the net, we have managed to create an object being able to infiltrate and record data of the human body. The concept of creating the object named BodyTrack was to know if anybody could create an object such as a tracking device without any specific knowledge in the electronic universe, either informatics processing data. Via the net, open-source data and communities created around same passions, we have noticed that creating objects able to infiltrate people's life was more than realizable.

In order to make the human accept these objects and intrusive technologies for their personal data, we have highlighted a very interesting point. .. the camouflage. So that people accept easily those devices in their life, camouflages methods have been set in order to make the user more confident. This has been the case for our BodyTrack, which has been moved into a capsule in order to hide the numerical tool hidden inside. This second skin, made of patterns and surfaces does not only permit to hide, but also to show that other camouflages exist in our society, through algorithms, images and screens, having repercussions way more important.
After realizing and hiding our BodyTrack, the intervention of our three testers has been necessary. Thanks to them, we have been able to record each one of their moves.
After making them entered inside the game, where body and displacements allow to transform and edit their own data, they played the game during one week and have tried, for some of them, to bug the machine.
Finally, what does the Nymphea project show ? Can we answer to our original question which was « *the « partition » and the proliferation of the data are controllable, and what does this create?* »

As we have noticed it, data and information are scattered very fast on the web and numerical platforms. Being involved to the Nympheas Project has allowed to the users to transform a soundtrack with their own body data. We have measured this diffusion of information according to the results in the soundtracks, which have been for some of them absolutely inaudible. Depending on the level of implication of people and their tacticity used, their results and data have been very different from each other. Some of them have even managed to fool the machine, creating some bugs thanks to the system and options proposed by our tool.

Finally, we can realize that the information will be scattered in the space in a very different way according to the implication and willing power of changing things, depending on each individual. Some of them, as Snowden will highlight confidentiel information by using as a support the net in order to massively propagate the data. The machine, initially tracking device transforms itself into a data propagation tool.

Nowadays, with the numerical era, it is obvious that it is easier to scatter data, but it can be against us too. Nowadays, the net becomes a way of massive diffusion, the problem is that it is very hard, almost impossible, to have it back.

# PROJECT

## NYNPHEAS

# BIBLIOGRAPHY

**Andrieu Bernard,** *La nouvelle philosophie du corps, expériences, interactions et écologie corporelle, VRIN, 2010*

**Bruno Bonnell,** *Viva la robolution, JC Lattés*

**Christine Buci-Glucksmenn,** *Les transgressions de l'ornement, du modernisme au virtuel.*

**Claude Lévi-Strauss,** *La pensée sauvage, Pocket, 1990.*

**David le Breton,** *Anthropologie du corps et modernité, Presses universitaires de France, coll. « Quadrige Essais Débats », 2008.*

**Fabien Hein***, do it yourself ! Autodétermination et culture punk, Le Passager clandestin, 2012.*

**Florence Bost & Guillermo Crosetto***, Textiles innovations & Matières actives, Eyrolles, 2014.*

**Leroi Gourhan,** *L'Homme et la Matière: Evolution et techniques, Albin Michel, 1943.*

**Maurice Merleau-Ponty,** *La phénoménologie de la perception, Parie, NRF, Gallimard, 1945*

**Martin Juchat Fabienne,** *Le corps et les médias, La chair éprouvée par les médias et les espaces sociaux, De Boeck, Culture et Communication, 2008*

**Marcel Mausse,** *L'invention du Quotidien, 1.Arts de faire - Edition Folio essais.*

**Marc Veyrat & Ghislaine Azémard***100 Notions pour l'art numérique, Les éditions des immatériels, 2015*

**McCann and D.Bryson,** *Smart clothes and wearable technology*

**Nicolas Nova,** *les médias géolocalisés, comprendre les nouveaux espaces numériques, FYP, 2009*