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UNDER CREATIVE COMMONS.





*“There is the rubbish we keep, which is the junk, and the rubbish we throw away, which  
is the garbage.”*

*“We are the eternal return of the enslaved stock under his new name, junkware.*

*We are the medium, the message and the code.*

*We are worth our code, not worth a rush”*

*– Junkware,*

T.Bardini, 2010



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## 0.1 How This Book Was Written

Junk DNA corresponds to the 98.5% part of the human genome that has no genetic function. Thierry Bardini has explored in *Junkware* (Minnesota Press, 2010) the idea that "most of culture and nature, including humans, is composed of useless, but always potentially recyclable, material otherwise known as 'junk.' "

Are we made of junk ? Do we have become literally junk ?

Inspired by Bardini's book, a group of french & chinese artists has choosen to interpret this concept through an eponym installation : a speculative machine that uses mathematical modeling and data analysis to generate futuristic objects from DNA and brainwaves.

The opportunity to present *Junkware* installation in Shanghai (Maker Carnival, october 2014) is combined with the organisation of a textbook sprint aiming at sharing, collecting and editing materials - ideas as well as data - to observe, critic and speculate on our own's practice towards junk : the one that is produced and the one reused.

Your junk is a treasure for someone else.

This book is a recollection of contributions from the Junk Book Venture workshop organized at One Space on 15&16th october in Shanghai (Chapter One) ; and as a metaphor of the Junk concept itself, it includes a great remix of archives (data, text, visuals) produced from november 2013 to october 2014 to prepare *Junkware* Installation (Chapter Two).



# 1

## CHAPTER ONE

## **1.1 Anatomy of the workshop**

### **1.1.1 An invitation**

On October 15, Professor Lafleche from France and MAKE+ from Shanghai brought together 15 people from different backgrounds and cultures to merge ideas to produce a book on the subject of “JUNK” at ONE Space . In this workshop, scientists, artists and designers and professionals from other fields have discussed together the changes in today’s and future’s product design and production.

In human DNA, only 1.5% of DNA has genetic functions, the scientists named the rest 98.5% “Junk”, because their functions have not been found. Canadian writer Thierry Bardini defined “Junk” in his book “Junkware” as this : “Almost all culture and nature, including ourselves, are made of useless but recyclable materials. These materials are called Junk” In fact, our daily lives are surrounded by useless products, the world is filled with Junk. Are we really using Junk to make things ? Will we ever become Junk one day ? Is Junk completely useless or will they give us hope ?

### **1.1.2 A space**

ONE is a creative experimental space located in Shanghai Jingan district. It is open to all company and creative individuals. Participants are welcomed to take part in creative thinking process and space experimentations through workshops, talks and exhibitions.

### **1.1.3 A collaborative process**

Professor Lafleche and MAKE+ have collected, shared and edited information on Junk using text, image and visualized data and the method of co-writing and annoting (English and Chinese) to discuss art, design, innovation, technology, production, consumerism, patenting and recycling in the future.

### **1.1.4 A publishing platform**

Booktype is web-based software which means you do not install it on your computer ; rather, you access it through a web browser. It is Free Software (licensed under the GNU Affero GPL), meaning that it can be freely downloaded, re-used and customised. Booktype was originally developed to facilitate the accelerated production models enabled by book sprints. Hence the feature set matches the rapid pace of publishing possible in the modern era of print-on-demand. Using Booktype, print ready source (book formatted PDF) can be generated in a few minutes, and then uploaded to your favourite print-on-demand service.

**Thanks to all the participants !**

## 1.2 \*digital\*junk\*ware\*lore\*

by Gabriele de Seta <http://paranom.asia>

\*数\*媒\*废\*品\*俗\*

### Shanghai mediations on Thierry Bardini's *Junkware*

\*junk\*

废物 (feiwu, garbage) (*feiwu*, garbage)

"There is the rubbish we keep, which is junk, and the rubbish we throw away, which is garbage", Sydney Brenner reportedly explains on page 49, inspiring Thierry Bardini's call for a semantics of discard. Of the many questions elicited by the signature of \*junk\* - *what is junk?* Everything / *when is junk?* Now, and more to come / *where is junk?* Everywhere / *who is junk?* Us, and them / *how is junk?* Good and bad and useful and useless, it depends, yet it's 98.5% of everything - perhaps the most sensible question to ask today remains *so what?*, or, *why does it matter?*, or, *why does junk matter?* and *why does matter junk?*

\*ware\*

无用的 (*wuyong de*, useless)

A materialist approach to junk and a junkist approach to matter seem the most useful moves to derive from Bardini's *portmanteau* \*junk\*ware\*: stuff that is the Other of stuff, in time and place and ownership and use, things that are temporarily thrown in a limbo of less-thingness and uncertainty, accumulating in heaps of problematic matter, losing the boundaries which segment them in individual objects, rewinding back the process of individuation by piling up upon other junk. The next step leads into speculative junkonomics: a recuperated copy of Marx's writings encoded in the wrong character set postulates the W-J-W and J-W-J cycles, from ware to junk to ware, and from junk to ware to junk, the accumulation of capital sustained by use value superseded by the self-sustaining accretion of use-less value in stacks of [54C1?] *pin*, 'ware'.

\*digital\*

垃圾邮件 (*laji youjian*, junk mail)

The fabled Internet of Things is in fact merely the polished 1.5% portrayed by the aseptic photos of data centers and the colorful network diagrams appearing on sleek PowerPoint presentations at international industry talks. What about the non-signifying 98.5%, then? Where is The Internet of Junk? Who collects and sorts out \*digital\*junk\*ware\*? What other forms does junk take in our digital and already postdigital times, besides the obvious junk mail already made almost invisible by the perfected algorithms of our filters and the pop-ups preemptively killed off by our Adblock plug-ins? How does this digital junk get repurposed into digital ware and when does digital ware goes back to being digital junk? Is even junk a fitting metaphor for the platitude that user-generated content is?

\*media\*

信息毒品 (*xinxi dupin*, information drug)

Bardini's writing is irremediably double-helixed, knitted along the polymer bases of its own DNA, as it proceeds by a sort of augmented dialectics set in motion by hidden third terms - *media*. DNA is made of genes, but genes are 98.5% junk, and junk matters; culture is made of memes, and memes are just like genes, so 98.5% of culture is junk,

and it matters too. The jump from these parallels into the hidden third of hypervirality is legitimized through the figure of the loop, which becomes the organizing aesthetic trope of our times after the deleuzian fold. In hyperviral culture, the augmented dialectic loop continues, memes are the genes of culture, and memes work like mind viruses, so that "a virus is essentially junk code, and our hyperviral culture is indeed a junk culture" (p. 189). The viral metaphor mediating between memetics and genetics pierces through half a century, from Burroughs and cybernetics to Derrida, Deleuze and Dawkins, and turns \*digital\*media\*junk\*ware\* into an updated version of selfish cultural DNA - an information drug poisoning minds with alluring rumors and spreadable beliefs. But the non-signifying discard bites back : if meaningless genes cannot be selfish, how could meaningless memes be ?

\*lore\*

无用之用 (*wuyong zhi yong*, the use of the useless)

"How did this happen ? How and when, exactly, did our culture turn to junk ? Or, in other words, when did we actually last create some radically new cultural experiences ? And when did we instead start to recycle culture with the appearance (the glitter) or the new ?" (p. 169) - how many useless questions, Thierry ! Let's tear them apart and build a new toolbox of unusable concepts. If our entire culture turned to junk, it might be the right time to go back to folklore. Junk refuses to be yet another final statement in a series of grand narratives. Junk has to be found in opposition to use value and organic garbage. Junk has to be rummaged into for its discursive making, its affective collection, and its temporary autonomous phases of repurposing into non-junk. Let's do away with both the myth of the original and the myth of the copycat : [5C71 ?][5BE8 ?] *shanzhai* has gone all the way from junk into a culture into a product into an industry into a rhetoric into a narrative and its hermeneutics - junk for academics, the last rodents in line. Let's stop searching for our next brand of culture when the last choice is as paradoxical as junk. Let's drop our sampling devices and drift along the kula rings of useless discard that we traverse and traverse us at every corner of our mediated lives. Let's accept the loss of authorship and preservation, of traceability and evolution, let's just get high on information drug, let's believe and preach and sing and dance in a carnival of \*digital\*media\*junk\*ware\*lore\*, a repertoire of noise not-yet-useful to anyone, rumors without referent, fractal jokes, non-human grotesques, post-linguistic vernaculars, unsuccessful memes, self-censoring [6076 ?][641E ?] *egao*. Makers : let's "make do" rather than "make to".

\*?\*?\*?\*?\*?\*\*

Sketched above are some mediations on a constellation of semantemes recuperated from the reeky dustbin of recent media theory, in the attempt of hacking together new hybrid concepts for a materialist anthropology of the contemporary under the sign of \*digital\*media\*junk\*ware\*lore\* or \*[6570 ?][5A92 ?][5E9F ?][54C1 ?][4FD7 ?]\*. In this light, moving from Bardini's bio-cultural parallels into speculative probing of the \*digital\*, \*junk\* is understood as the Other of \*ware\*, locked in J-W-J and W-J-W cycles of which we are the \*media\*, the silent hyphens articulating a \*lore\* through each change of phase. The best use to which we can put the signal-to-noise ratio of our genome is unmasking the cultures to which we subscribe as ordered and stylized collections of memes, a mere 1.5% of the webs of meaning we code without end. Praise the 98.5%.

## 1.3 Data-Literature

First time I encountered the term *data-literature* was in an article written by the french web-journalist Sabine Blanc untitled " De la data-littérature dans le 93". She shared the story of "Traques Traces" project reflecting on digital identity and based on statistics and one-line data, developed by the writer Cécile Portier together with teenagers in an high school in Paris'suburbs where she was hosted in residency.

Perhaps, Sabine Blanc coined the term data-literature (I could hardly find other references later on the web) without noticing it. At that time, she worked for OWNI (acronym for Non Identified Web Objects) an information website initiated in 2009 which gained its reputation based on a solid data-journalism, meantime introducing in France this new way of thinking & doing in the field of journalism.

*Data journalism is a journalism specialty reflecting the increased role that numerical data is used in the production and distribution of information in the digital era. It reflects the increased interaction between content producers (journalist) and several other fields such as design, computer science and statistics as defined by Wikipedians.*

If Sabine Blanc never proposed a definition in her article, I embedded the formula with me as it perfectly fit with the idea I have of my own fictional playground. Especially for the novel I'm currently writing. It has been convenient to present it under this term, and so, it is maybe time for me now to come with a definition, or at least, precision.

Data literature calls for fictional writing relying totally or partially on sets of data. The narratives baseline explores one or various topics with a guiding principle : to make those data speak in prose manner implying a plot or not. Written in natural language and/or programming language, it takes on multiple formats to perform the same work (printed book, digital file, website, script, etc).

In 2012, I started an artistic literary project based on the life & work of the british novelist Anna Kavan (1901-1968). Originally publishing under her first married name, Helen Ferguson, she adopted the name Anna Kavan in 1939, not only as nom de plume but as her legal identity.

I've been working meantime on a novel and on-line artwork. In the novel, I choose to make Kavan appears as an heroin and Kavan-the-writer is also discussed by the different characters who inhabit the novel. The whole background is also made out of my own autofictional material as well as elements of data-literature (graph, scripts, semantic vocabulary, dispersion plot analysis, etc). The on-line artwork dialogues with the print novel ; it is a website but it is not a replication of the novel. Two chapters out of the five, will be accessible on-line while the main part will be built out of data (blogposts, reviews, photographies, bookcovers, fan art, quotes, tweets, etc) I've been collecting in the last four years. Something like a semantic and fictional active archives.

But nothing like a biography for all these reasons : A biography would mean to put in front again her sensational life and I was much more interested by the autobiographical puzzle she elaborated, her literary project let's say. A biographer needs to say everything about his, her subject, often sticking to a chronological lifeline and that's hard to keep such a line when you're up to disruptive narratives. And what is sad with biography is that we always know when and how the book ends : with the death of the subject. And

that would be precisely when and how I wanted to start : Kavan would be already dead but she would come back, I would recall her as a living heroin in the fiction while other characters would tell us how Kavan's heritage lives in the present time. This means, that unlike a biographer, I would consider all the web-folklore and data I've been browsing, as a source, a minor source, however a source to take into account, to play with.

That's probably how I feel Junkware echoes with my own practice : I'm writing stories out of junk, digging the web, recollecting junk that embbeds their own narratives and celebrate them as part of a fiction territory.

### 1.3.1 What is junk in my own practice ?

As a producer, I didn't think I would produce any junk, cause to me, junk was material stuff. This project made me think of junk, and realize it's much more than that. Maybe all that meetings I do, dozen of mails every day, printed papers, datas I produce all the time. What do I do from that ?

#### Papers

I do a lot of administrative things like hiring people, editing agreements, payslips, accounting and of course, I have to print all that and, of course, there is often mistakes and things to change, so I have to edit them again, and sometimes again AND again...

So I recycle, it's almost an obsession ! Recycling and throwing that every day out of my office, to clean it up from this production I can't bear to see. Recently, I learnt throwing every day is a Fen Shui practice and I really understand this : cause it don't throw on you face every morning all the shit you've produced. It makes you (me) feel more comfortable to this fragile world, those trees. I also keep some to keep rough papers.

Plus, I've always been recycling since we had the dustbins for that and could do it, it's automatic.

To try to make it right, I've decided to buy only recycled paper, that I throw after. Recycling the recycled. Get my practice evolve and think before printing for instance, is the Holy Grail I try to tend to every day.

#### Datas

Data is different, well I thought it was different but in fact no, our datas fill up data centers, billions of billions of bits, countless and endless informations flowing into boundless data tubes. How much energy does it require, how many tons of toxic chemical products, plastics ? Like ogres, they need to be fed, it's a system that requires us to produce datas in order to be fed and digest those trillions tons of 0 and 1.

I produce data, so much again, editing charts and pages all the time for every single project, and also a lot of recap charts of course, of those datas..

This I keep it all, no throwing, you never know right ? So much junk data but I can be useful one day, kneed, I recycle my own production, using my datas back, reloading them to adapt them to another new project. I get them evolve like that and the first one don't really look like the latest I've done, recycling can give you a solid basis for creating.

I couldn't tell if I have created my first chart or not. I think I did it for my 1st presentation, it's a creative part I really like, how will I talk of an idea, a concept, explain it by the rules and also by MY rules, cause only this will make it unique and will put in it my own print, for which I'm known.

And I confess I do recycle the good ideas I see, when I see ;-)

### 1.3.2 Projects

As a producer again, I read so many projects and initiate much more. How many comes to the end? What is junk to others have already been good to me and I know the opposite has been too.

*On going writing...*



## 1.4 Board/Bored Games

From the inside board game industry seems to experienced a renewal ; or at least a huge step was climb the last few decades. Some time ago there was'nt so many publishing company as today, and most of theses company where connected to toy and children industry (hasbro, matel, haba), and game designers where totally anonymous(who know the name of the inventor of monopoly?).

Since the 90's this niche market offer hundreds of publishers, it redefined is own language by defining mechanics and "schools"(german-style and american-style) and best seller game designer begin to appear as the industry grow in audience.

These last few years between 800 and 1000 new board game per year are published, even it could be some add-on sometime, this huge amount of production create change rythme of a board game life : If you want to comment,try or know what's going on in this scene you will have to test at least 2 or 3 games per day before publishers released the next collection. Few years ago a new and well promoted game can stand for few month ; now if you don't have a network acess and create attention will need to sucess in few weeks, even days, before everybody forget your box.

Major publisher and authors understand this pretty well and exploit few expedient to ensure their position. Some prefers funding press of major press network(Tric-trac is own 49% per the owner of Asmodee), some others seem proud to publish game that people already know (Les loups garoux de Thiercelieux, Time's up) Even this very small scene seems very friendly the growing concurrence lead to obliterated news and push publisher to released maintream product, excluding commercial risk.

Even this communication issue blurred sight for newcomer seeking for innovative process, the worst is that this collective intent of mainstream does not seem to work very well... The 10 best solded game are still antiks like Monopoly, Trivial pursuit, Risk... Common audience buy what they know. And all this very dynamic production lead finnaly to a lot of junk, stuck in a niche market and cuted from the common world. More this fashion of exploiting gamer and geek culture seem obvious, more the public will have defiance for board game, and more all the loop of board game production will create junk.

But let's be optimistic and give a final proportion. If 1000 junk game are created this year, and that we can finnaly count on at least 5 years of analog production since now ; we will be able to play everyday for 15 years from now !

if we begin to think of how we can share rules and material (creative common, digital reproduction) and process to use new way for playing (public space, unnacustomed site) we will be able to use all this junk to create new habit.

innovation for

-1000 game per year

-10 best game solded/knowed(people buy what they know)

-audience defiance

-inovation invisibility

### 1.4.1 Third Hand

A benefit with recycling is that you don't "reinvent the wheel" as we say in french. But it sticks you to a former thinking. A benefit with creating is that you free yourself from other's tracks and create you'r own.

I really like this quotation from Ralph Waldo Emerson, an american poet : "don't go where the path may lead, go instead where there's no path and leave a trail".

What is junk to me? Maybe a tiny trail between known and unknown, creating and recycling, source of inspiration and greasy sticking past.

# 2

## CHAPTER TWO

## 2.1 Terms Of Services

```
# Markmix : train markov generator with an heteroclit set of Terms of Services :
# Random Website Terms of Conditions from ...
# Divorce Agreement from ...
# Mez Breeze ToSS on-line artwork
# Github Terms of Services
# Taobao Terms of Services
# & see what comes out !

import markov

website = open("sampleConditions.txt", "r")
divorce = open("sampleDivorce.txt", "r")
mez = open("sampleMez.txt", "r")
github = open("sampleGithub.txt", "r")
taobao = open("sampleTaobao.txt", "r")
o = open("markmix-tos.txt", "w")

class Chunk() :
    def __init__(self, txtfile) :
        self.text = txtfile.read()

c1 = Chunk(website)
c2 = Chunk(divorce)
c3 = Chunk(mez)
c4 = Chunk(github)
c5 = Chunk(taobao)
chunks = [c1, c2, c3, c4, c5]

markmixer = markov.Markov(chunks)

out = markmixer.generate__markov__text()

o.write(out)
o.close()
```



# JUNKWARE TERMS OF SERVICES

This ToSS shall [s(h)elf.de]terminate, but the following debts and expenses and will not be liable for an delay or default in delivery or payment, cost mis-calculations, breach of warranty, breach of warranty, breach of warranty, breach of the Service after any such message. If the Registered User's actions may cause financial loss or legal liability to it, for any damages that may apply to you. You agree to accept the terms and conditions applicable to your story [now.never.private], use our con[Non-]Tact im[de]porters, or indicate you are requi[Code]Red to pro[di]vide[ur.compartmentalised.self] in[de]formation such as when you delete your IP con[ned]tent or your [never.brought.2]account unless your con[ned]tent and information. GitHub Terms of Service. Therefore, we ask that you do not control[l] [and/]or [mis]direct [ab]users' [f]actions on Junkware.io, such as: sug[con(ned)]gesting that your friend t[info.fr]ag you in conn[d]ec[ep]tion with the children not in his custody according to the Service before the changes are effective.

Each and every permutation and following (imagined, tangential and potentially possible), as well as any cl[m]aim that m[w]i[l]ght aRise[up.u.will.not] between you as a result of a third-party product that accesses GitHub, is bound by the parties as follows: Husband will maintain medical and dental insurance for the Content posted and activity that competes with Taobao, or by Taobao and/or any other information requested in order to post information on the s[violently.strangling.n]ite[s], and the remaining provisions shall be deemed to be bound by these Terms of Service ("Agreement") This Agreement documents the legally binding terms and conditions of this Agreement for such termination if (a) in Taobao's opinion. Taobao reserves the right to terminate your account and refuse any and all losses, claims, liabilities (including legal costs on a monthly billing cycle to a transaction, such User in connection with FacePalm (IP License). This IP License [never.ever.]ends when you p[l]o[s]e[t a status update, ["s]up["]load a p[icture.u.can.never.again.claim.as.private]Ho[e]to, or comment on a friend's st[social.media.gl]ory.

It also includes the person using Junkware.io to create or compile, directly or indirectly to or responsible for payment of all such cl[m]aims. The laws of the Service are governed under Junkware law. For questions about the Terms of Use Agreement please read these terms and conditions, in which case the terms "you" or "your" shall refer to such entity, its affiliates and users associated with it. Please note that if you are requi[Code]Red to pro[di]vide[ur.compartmentalised.self] in[de]formation such as your plan allows. You are cautioned to read the entire terms and conditions and privacy policy of any unlawful, harassing, libelous, abusive, threatening, harmful, vulgar, obscene or contain or infer any pornography or sex-related merchandising or any kind or nature. Further, the Registered User; provided, however, that notice is not required for such changes on an area of the features or introduce new features without prior notice.

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Each User acknowledges that Taobao has no control over such third party's web site, does not warrant that (i) the service will meet your specific requirements, (ii) the service will meet your specific requirements, (ii) the service will be paid by the uniform resource locator www.Taobao.com (the "Site"). This Agreement shall be duly made when sent to support@github.com. If you violate the letter[,word,space,punctuation,emoticon.or.symbol] or spirit[.voodoo,hoodoo,dogmatic,orthodox,.and.all.other.forms] of this Agreement, we ask that you do not agree to use Junkware.io shall any warranty not expressly permitted in this Agreement or posted by third parties.

Date : \_\_ / \_\_ / \_\_\_\_ Place : \_\_\_\_\_ Signature :

## 2.2 Writing Machine, Algorithmic Papyrus & Infinite Loops

*Le texte ci-dessous étant susceptible d'être repris sur les documents de communication de Lorem Ipsum, nous vous remercions d'être le plus précis possible.*

Hiver 2104. La pluie battante s'abat sur le terminal 17 de la Gare Ouest de Shanghai. Les voyageurs prennent place à bord du vacetrain SL58 qui les amènera 58 minutes plus tard en Gare de Lyon Part-Dieu. Attention à la fermeture des portes. Attention au départ.

Lyon-Shanghai : 58 minutes s'interroge sur le futur des transports à l'échelle mondiale en donnant la parole à ses usagers. LS58 propose à des habitants de Lyon et Shanghai d'imaginer l'expérience d'un monde où un train reliera ces deux villes en 58 minutes seulement.

Les participants expriment leurs visions au cours d'ateliers d'écriture transmédia, recréant des éléments de cette réalité future. Une attention particulière est portée aux objets présents

dans ce train, recréer sous formes de modèles en 3D. Grâce à la réalité augmentée et l'impression 3D, ces objets sont ensuite exposés comme autant de passerelles entre ce monde futuriste virtuel et notre monde actuel. L'univers ainsi recréé sera restitué sous la forme d'un récit transmedia en ligne qui servira de prototype à un outil d'écriture collaborative et multilingue pour supports mobiles.

\* \* \*

Mauris quam dolor, cursus at porta et, luctus eget purus. Nunc interdum.

\* \* \*

Lyon-Shanghai : 58 minutes. Au seuil de l'expérience sensorielle et digitale, LS58 propose d'entrouvrir une porte pour vivre et construire ensemble le devenir technologique et les futurs possibles de notre planète.

Franchir une simple porte pour vivre l'expérience du futur à l'autre bout de la planète, c'est le pari du projet LS58. Grâce aux installations situées à Lyon et Shanghai, les spectateurs peuvent s'immerger dans une réalité virtuelle décrivant le futur de leurs villes, tel qu'imaginé par leurs habitants.

LS58 brings together a community of artists, engineers and inventors in France and China to

imagine a (not so) far future where a train will be running between Shanghai, China and Lyon,

France in less than an hour. What will such fast transportation means to daily life in both cities ?

Who will be the people using it and why ? What will traveling in this train feel like ?

LS58 walks down the path of science-fiction to envision the future of mobility and imagine how the shortening of path distance between places and cultures will reflect in our everyday life.

Using new technologies and digital art, LS58 happens in the forms of two actual installa-

tions in

Lyon and Shanghai. Bringing visions of the future to life, the installations recreate an environment where connected objects and augmented reality merge into a unique immersion experience into hereafter.

\* \* \*

Mauris quam dolor, cursus at porta et, luctus eget purus. Nunc interdum.

\* \* \*

Lyon-Shanghai : 58 minutes Lyon-Shanghai : 58 minutes (LS58) is a pluridisciplinary project (LS58) between France and China that brings together science, art and la Chine qui réunit science, art design to investigate the future of writing technologies.

LS58 elaborate a collective representation of the future by generating imaginary objects from visions and ideas expressed during workshops in Lyon and Shanghai. Workshops participants provides blocks of experience from their imagination to an algorithm which turns them narratives into narrative forms describing objects. This anticipation work will be released as a book-object in Fall 2014 during a conference and party event in both Shanghai and Lyon.

In French, in English, in Chinese, in C++ or even in plastic, our technological future uses everyday multiples langages to be written. Science, stuck in a real-time becoming too present, has been sentenced to the moment and therefore can't understand fiction anymore. However, dreams that are floating everywhere still using a future tense to be written. By focusing on anticipation writing, LS58 wants to offer an algorithmic papyrus to artists, designers, technologists and enthusiasts from France and China to play with words and write down their ideas and wishes for tomorrow in today langages.

En français, en anglais, en chinois, en C++ ou même en plastique, notre devenir technologique s'écrit chaque jour dans de multiples langages. Condamnée au moment, la science ne comprend plus la fiction, engluée dans un temps-réel trop présent. Pourtant, partout flottent des rêves qui s'écrivent au futur. En s'interrogeant sur le récit d'anticipation, LS58 veut offrir un papyrus algorithmique à des designers, technologistes, artistes ou curieux de France et de Chine pour jouer avec les mots et écrire leurs idées pour demain en langages d'aujourd'hui.

\* \* \*

Mauris quam dolor, cursus at porta et, luctus eget purus. Nunc interdum.

\* \* \*

Cher comité de mécènes,

Nous vous adressons cette lettre pour vous présenter l'évolution du projet artistique *Lyon-Shanghai : 58 minutes (LS58)*. Cette oeuvre originale qui sera créée à Shanghai en Octobre prochain a mûri depuis notre première proposition. Nous tenons donc à vous exposer ici les raisons et les avantages de ce changement.

Durant les derniers mois, les échanges avec nos partenaires en Chine et l’adaptation aux contraintes nous ont conduit à renouveler notre vision du projet initial. Le travail de recherche consécutif nous a amené aux frontières de la narration et de l’expérimentation technologique.

L’idée d’une restitution unique sous la forme de réalité virtuelle s’est nourrie d’une réflexion plus large sur le futur de l’innovation. Nous nous sommes donc orientés vers un projet à plus long terme croisant science et fiction, où se mêlent bio-technologies, analyse de données et écritures génératives

Pour traiter ces questions d’avenir, nous avons échangé avec notre partenaire Make+, pionnier et défricheur dans la démocratisation et le développement des nouvelles technologies à Shanghai. Ensemble, nous avons décidé que la manière la plus pertinente de présenter ce travail de recherche dans des événements disposant déjà des couvertures médiatiques et attirant des professionnels et un public averti.

Le Maker Carnival et le DAFF (Design Art & Fashion Fair) réunissent sur deux week-ends quelques 30.000 visiteurs et professionnels venus du monde entier. Evènements clés de la scène culturelle de Shanghai, ils nous permettent de rencontrer des publics variés et un réseau médiatique plus influent, constitué tant de blogueurs suivis que de journalistes d’envergure.

Cette forme aboutie du projet reçoit des encouragements et des soutiens marqués, à commencer par celui du Centre National du Cinéma via le Dispositif d’Aide à la Création Numérique (DICREAM) à hauteur de 15 000 euros ce qui nous laisse optimiste quant à l’avenir de ce projet.

L’innovation ouverte devient aujourd’hui une question centrale aux différentes activités humaines. En s’appuyant sur un réseau pluri-disciplinaire et international d’idées et de pratiques créatives (science, économie, technologie, littérature, art...), *LS58* devenu *Junkware* bénéficie d’une perspective unique et novatrice sur le futur des relations entre les peuples et leur capacité à créer ensemble.

Nous vous remercions par avance de votre soutien renouvelé à ce projet.

Clément Renaud

& l’équipe du projet Junkware

\* \* \*

Développé entre Lyon et Shanghai, Junkware est un projet expérimental pluridisciplinaire sur l’écriture collective du futur des technologies dans nos vies. En français, en anglais, en chinois, en C++ ou en plastique, notre devenir technologique s’écrit chaque jour sur nos corps dans de multiples langages. Junkware propose une rencontre incongrue



de ces différents "codes" dans une réflexion croisée sur le rôle de l'innovation technologique et la production du futur.

Développé par Junkware Inc., le Invention Sequencer est une machine étrange permettant de générer des objets futuristes à l'aide d'un fragment d'ADN (cheveu, salive...) et des ondes émises par le cerveau en utilisant la modélisation mathématique et l'analyse de données : une expérience unique et extra-ordinaire. L'installation Junkware propose de créer et de montrer une galerie d'objets imaginés et développés ensemble par l'homme et la machine.

Junkware is a French-Chinese inter-disciplinary project that brings together science, art and design to investigate the future of life with technologies. Developed between Lyon and Shanghai, Junkware is an experimental pluri-disciplinary project about collective writing of future of technologies in our lives.

In French, in English, in Chinese, in C++ or even in plastic, our technolocal becoming is written every day on our bodies by multiple languages. Junkware offers an unexpected encounter of those different "codes" in a reflection on the role of technological innovation in the production of the future.

Created by Junkware Inc., the Invention Sequencer is a strange machine that uses mathematical modelisation and data analysis to generate futuristic objects from a fragment of your DNA (hair, saliva...) and the waves emitted by your brain. The Junkware installation offers to create and show a gallery of objects imagined together by the human and the machine.

## 2.3 Where Latin is very usefull...

*Anagrams of patent : Ant Pet / Tan Pet / Pa Tent / Pa Nett / Tap Ten / Tap Net / Pat Ten / Pat Net / Apt Ten / Apt Net / At Pent / Tat Pen*

*LATIN / ETYMO patēns, f, n (genitive patentis); third declension*

1. being opening; open
2. being accessible; accessible, passable
3. being exposed; vulnerable
4. evident, manifest

*obiectum (feminine obiecta, neuter obiectum); first/second declension*

1. offered, presented
2. exposed
3. interposed, opposed

patens obiecta : ouvrir aux objections patentem obiecta : open objects patens objectum : an open object *futūrum (feminine futūra, neuter futūrum); first/second declension*

1. about to be, about to exist

conjecture *coniectum (genitive coniectūs); fourth declension*

1. a throwing together
2. a crowding, connecting or uniting together
3. a confluence, concourse; crowd, pile
4. a projecting, hurling
5. (*figuratively, of the eyes or mind*) turning, directing

*coniectūra (genitive coniectūrae); first declension*

1. conjecture, guess, conjectural inference
2. interpretation (of dreams), divining, soothsaying, prophesying

## 2.4 The \$1000 Genome

DNA Paternity test : <http://www.amazon.co.uk/Home-DNA-Sample-Collection-Kit/dp/B00577WBBW>

OpenPCR <https://www.youtube.com/watch?v=zrejvnVfZJE> <http://discuss.biohack.me/> Programming language for synthetic biology

<http://www.qath.net/> <http://biobricks.org/> *CHEAP SEQUENCING*

\* The \$1000 genome [http://books.google.fr/books?id=dY7zDVhNYQkC&dq=dnasequencer&pg=PA1&hl=zh-CN&source=gbp\\_navlinks\\_s](http://books.google.fr/books?id=dY7zDVhNYQkC&dq=dnasequencer&pg=PA1&hl=zh-CN&source=gbp_navlinks_s) <http://www.genome.gov/sequencingcosts/> [http://en.wikipedia.org/wiki/1000\\_Genome](http://en.wikipedia.org/wiki/1000_Genome)

[http://en.wikipedia.org/wiki/DNA\\_sequencer](http://en.wikipedia.org/wiki/DNA_sequencer)

Genalysis

[http://dnae.co.uk/\\_images/platforms\\_genalysis\\_lft1.jpg](http://dnae.co.uk/_images/platforms_genalysis_lft1.jpg) <http://kh6jrm.com/2014/07/28/christofer-toumazous-lab-on-a-chip-makes-preventing-illness-possible/> <http://dnae.co.uk/>

*"Toumazou claims doctors will soon be looking at a patient's future medical records instead of their past."* from <http://www.theguardian.com/business/2014/jul/27/christopher-toumazou-lab-chip-dna-european-inventor-award>

*Lab-on-a-Chip* <http://en.wikipedia.org/wiki/Lab-on-a-chip> <http://www.33rdsquare.com/2013/05/dna-sequencing-lab-on-chip-opens-door.html> <http://www.extremetech.com/computing/84340-new-silicon-chip-sequences-complete-genome-in-three-hours> *"Your DNA sequence is 3 billion bases long. This technology gives you the identity of ONE base. One. That is what a SNP is, a SINGLE Nucleotide Polymorphism. Single."* *"There's no sequencing involved in this method. Instead, this system can perform PCR to check for the presence of a SNP at a given position. The last step of the workflow is probably a staining step with a fluorescent dye, so you can check if you got amplification. That makes this a tiny and fast PCR machine, which is pretty sweet, but not a sequencer. We don't currently have fast enough sequencing technology to be able to legitimately sequence anything in less than an hour (including sample prep and analysis time)."* Comments from <http://gizmodo.com/5993925/sequence-your-dna-in-an-hour-on-this-tiny-chip> SNPs [http://en.wikipedia.org/wiki/Single-nucleotide\\_polymorphism](http://en.wikipedia.org/wiki/Single-nucleotide_polymorphism) \* Nano ION Oxford <https://nanoporetech.com/technology/the-minion-device-a-miniaturised-sensing-system/the-minion-device-a-miniaturised-sensing-system> <http://www.theguardian.com/science/2012/feb/17/dna-machine-human-sequencing> <http://www.extremetech.com/extreme/190409-minion-usb-stick-gene-sequencer-finally-comes-to-market> <http://www.bio-itworld.com/els/2014/9/17/latest-scoop-minion-portable-sequencer.html> *DNA Analyzer in a DVD reader* <http://www.kth.se/en/aktuell/nyheter/dvd-lasaren-gor-comeback-som-hiv-testare-1.380911> \* DVD electromagnetic waves [http://www.answers.com/Q/What\\_kind\\_of\\_electromagnetic\\_wave\\_does\\_the\\_DVD\\_player\\_use](http://www.answers.com/Q/What_kind_of_electromagnetic_wave_does_the_DVD_player_use) <http://phys.org/news/2013-04-cheap-quick-hiv-dvd-scanners.html> <http://pubs.rsc.org/en/Content/ArticleLanding/2013/LC/c3lc41360h#>

!divAbstract \* Nanopore-based sequencing [http://en.wikipedia.org/wiki/Nanopore Desktop sequencer](http://en.wikipedia.org/wiki/Nanopore_Desktop_sequencer) : <http://systems.illumina.com/systems/miseq.ilmn> Toy Sequencer [http://www.amazon.com/Discovery-Exclusive-DNA-Explorer-Kit/dp/B0006J31ME/ref=cm\\_cr\\_pr\\_product\\_top/177-4279131-3014036](http://www.amazon.com/Discovery-Exclusive-DNA-Explorer-Kit/dp/B0006J31ME/ref=cm_cr_pr_product_top/177-4279131-3014036) <http://archive.wired.com/wired/archive/11.12/tools.html?pg=3> tuto <http://openpcr.org/v1story/2011/05/dna-fingerprinting-osama-bin-laden> *"DNA fingerprinting uses 13 STRs (short tandem repeats) to create a unique fingerprint. A short tandem repeat is 1 to 4 letters of DNA that is found repeating over and over in the human genome. For instance, one gene used for DNA fingerprinting contains a repeated pattern of "CTTT", i.e. "CTTTCTTTCTTTCTTT". This is from the FGA gene in humans, and it has been seen repeating from 12 to 50 times. By looking at the number of repeats in all 13 STRs, a unique fingerprint is created for each person."*

<http://hyperallergic.com/145012/a-travel-bureau-for-a-trip-to-the-moon/Bio-hack>

techno du séquençage du génome humain <http://www.oezratty.net/wordpress/2012/technologies-sequencage-gnome-humain-3/> Mutagène *"En biologie, un mutagène (du latin, littéralement origine de changement) est un agent qui change le génome (en général l'ADN) d'un organisme et élève ainsi le nombre de mutations génétiques au-dessus du taux naturel d'arrière-plan. Les mutagènes sont en général des composés chimiques ou des radiations. Les mutations, en dehors de celles qui affectent les cellules reproductives, ne sont pas inoffensives. Si elles n'induisent pas toutes des cancers, c'est la première étape nécessaire vers la cancérisation."* Wikipedia transgenesis A voir dans le déjà utilisé : [http://en.wikipedia.org/wiki/List\\_of\\_mutagens\\_in\\_fiction](http://en.wikipedia.org/wiki/List_of_mutagens_in_fiction) [length of uncoiled DNA](<http://skeptics.stackexchange.com/questions/10606/length-of-uncoiled-human-dna>) : 6000 times the distance to the moon. See some [calculation examples]([http://www.bioinformaticaindeklas.nl/en\\_oud/bioinf.html](http://www.bioinformaticaindeklas.nl/en_oud/bioinf.html)) "Junk DNA" is full of molecular switchers that can turn on and off genes. how genes are wired to core DNA, need to design contact maps : "which contacts it makes w other genes" [(video)](<https://www.youtube.com/watch?v=MqNgocaoDQ>) [Patenting in genes](<https://www.youtube.com/watch?v=ZKjN6Yr4LI8>) [Gene Patent]([http://en.wikipedia.org/wiki/Biological\\_patent#Gene\\_patents](http://en.wikipedia.org/wiki/Biological_patent#Gene_patents)) [DNA patents in the US](<http://www.quora.com/Law-and-Medicine/What-does-it-mean-for-business-and-research-now-that-only-cDNA-patents-of-human-genes-are-legal-in-US>) Book : \*[Gene Cartels : Biotech Patents in the Age of Free Trade](<http://genecartels.org/book.php>)\* [Duke University Pr. Genome ethics](<https://www.youtube.com/watch?v=R2RfApBy5jw>) [Biopiracy](<https://en.wikipedia.org/wiki/Bioprospecting>) [\*biopirates\* : Stallman on biopiracy](<https://stallman.org/articles/biopiracy.html>) > What is Bio-piracy ? > \* A situation where indigenous knowledge of nature, originating with indigenous people, is used by others for profit, without permission from and with little or no compensation or recognition to the indigenous people themselves > \* Developed countries are exploiting developing countries genetic resources and indigenous communities traditional knowledge in the name of patents on the inventions derived from those genetic resources ; [from <http://www.birac.nic.in/webcontent/dib.pdf>](<http://www.birac.nic.in/webcontent/dib.pdf>) [Ethical bio-bioprospecting]([http://fr.slideshare.net/marcelm/material-transfer-agreements?qid=a5f31ad5-f4d4-4e72-b9b8-65822766af90&v=qf1&b=&from\\_search=9](http://fr.slideshare.net/marcelm/material-transfer-agreements?qid=a5f31ad5-f4d4-4e72-b9b8-65822766af90&v=qf1&b=&from_search=9)) - [Bio 3D Printer](<http://3dprint.com/11136/life-print-x-bio3d/>) : [LIFE-PRINTER

X](<http://www.bio-3d.com/bioprinters.html>) [China developed its first 3D bio-printer](<http://www.3ders.org/articles/20130807-china-developed-its-first-3d-bio-printer.html>) > *There was a sci fi role playing game series from the 90's called RIFTS set in the far future. One of the super-techs they attributed to China was re-creating human tissue (Japan got robotics and the US got genetic manipulation).* <http://fr.wikipedia.org/wiki/Megaverse> <http://fr.wikipedia.org/wiki/Rifts>

Desktop DNA printer > <http://helioslabs.blogspot.fr/2013/01/desktop-dna-printer-propoasl-1.html>

[DNA-modified light Glowing plant on Kickstarter](<https://www.kickstarter.com/projects/antonyevans/glowing-plants-natural-lighting-with-no-electricity>)  
programming life personal website <http://andrewhessel.com>

Roland egx 350 engraver looks pretty much like a 3D bio printer machine [http://www.engraving-machines-plus.com/assets/images/roland\\_egx-350\\_engraving\\_machine\\_01.jpg](http://www.engraving-machines-plus.com/assets/images/roland_egx-350_engraving_machine_01.jpg) [Bio 3D Printer](<http://3dprint.com/11136/life-print-x-bio3d/>) : [LIFE-PRINTER X](<http://www.bio-3d.com/bioprinters.html>) Distributeur de mutagène <http://www.ethiscreea.com/2013/11/distributeur-de-mutagen.html>

prelevement ADN <http://www.helys.fr/catalog/sample.php> DNA portraits (products) [http://www.helys.fr/catalog/product\\_info.php?products\\_id=80](http://www.helys.fr/catalog/product_info.php?products_id=80) [http://www.eurodiag.eu/dna\\_kit\\_instruction.php](http://www.eurodiag.eu/dna_kit_instruction.php) <http://www.dna11.com/> DNA sampling Kit <http://molecular.roche.com/assays/Pages/cobasDNASamplePreparationKit.aspx> [http://en.wikipedia.org/wiki/DNA\\_extraction](http://en.wikipedia.org/wiki/DNA_extraction) <http://www.mobio.com/microbial-dna-isolation/powerlyzer-ultraclean-microbial-dna-isolation-kit.html>

## 2.5 Weird Object Behavior

**This tool land in a crowded kindergarden, what could be its first decision ?**

1. The tool go somewhere else cause he think that it have no meaning here.
2. The tool scan all people before making a decision
3. The tool ask for something to do
4. The tool introduce itself to adult and help them
5. The tool introduce itself to children and play with them
6. the tool will do nothing

**This tool is stuck without any kind of help, what will it do ?**

1. It operating a regeneration of its system by itself
2. It request a server who will launch a repair drone
3. Its stuck, its stuck..no solution
4. It make a check for any living form and explode
5. It scan the place and find something to repair itself
6. The tool will do nothing

**If a living being die beside of the tool, what will happen ?**

1. The tool will absorbe any matter to fuel and improve itself
2. The tool will dig a grave and ask a data network to find appropriate
3. neral ritual
4. The tool will ask for help to a living human being
5. The tool will move the body to the first human place
6. The tool will burn the body and continu to work
7. The tool will do nothing

## 2.6 Characteristics

- Dangerosity
- Spirituality
- Environnemental Impact
- Waste Impact
- Energy consupcion
- Weight
- Size : S M L XL
- Atractivity
- Resistance
- ubiquity (degree of)
- Autonomy
- Time influence
- Gravity
- Entropy
- Aggressiveness
- History - filiation
- Chemical porosity
- Materiability
- Popular - sacré - preciosity
- Semantic network & Etymology
- Talkative / Smart
- Matriochka
- Hairy
- Survival instinct
- Eurovision
- Gourmand
- Sexy
- Resizable
- Ethic
- Politic
- Browsable
- Cloudy
- Speed
- Attrition
- Mutation ability
- Nano composition
- Virtuality
- Quantic
- Organic compoment
- Resilience
- Humor
- Emotional
- Soft
- Scary vs Fearful
- Nervous
- Handicaped

- Mutilated
- Misshapen
- Second Hand
- Chamanist
- Religious, esoteric
- Dwarf
- Atrophied
- Muscled / force
- Flavored
- Edible
- Super- (super powerful)
- Magical
- Thin
- Luminous
- Transparent
- Colorfoul
- Spicy
- Readable
- Learner/learning/learnable



## 2.7 Daily Life at the Checkpoint

Robots artists, killer drones, algorithmic traders, chatbot assistant... Looks like old visions of the future are finally there to colonize our present. Once silicon and petrol are processed into gadgets and machines, it doesn't transform back. Instead, it piles up in our garages, filling our shelves and drawers, eventually ending up in some remote wasteland.

All this accumulated junk is about to wake up.

It is screaming.

Let us be!

### 2.7.1 Holding the temporal rift

Year 2132.

After 6 years of cryonic unemployment, you finally got a job. The security company X has hired you to hold the checkpoint that controls travel through the temporal rift.

A century of wars between humans and robots has left the earth dismembered, exhausted, and overcrowded. Hybrid machines are now wandering in time-space, seeking for the days when robots were funny home appliances living in peace.

### 2.7.2 Daily life at a checkpoint

Everyday, unknown forms of life and devices are queuing at the time gates, waiting for a ride to the good old times.

Some are cool. Useful, neat, practical, and friendly.  
Some are great. They could maybe save the world.  
Some are evil. They will destroy or exhaust our planet in a few seconds.

Anyway, they all have to comply to the Time-Travel Living Matters Immigration Policy to cross the border.

- What is their energy consumption?
- Does their size fit into our world?
- Are they harmful to others? to humans? to dogs?
- Are their technology correctly patented?

Those are things that you will need to check. DNA, specs, patents, built version, serial number... you need to go thoroughly through all documents and code available.

- How smart are they?
- How smart should they be?
- Do we really need them?
- Do we really like them?

You may ask those questions to yourself .

You may allow them into times.

You may refuse them the entrance.

Then you may have to repair/modify them to let them in.

### **2.7.3 Purpose of the Game**

Build the most suitable and interesting objects.

### **2.7.4 Basic Gameplay**

Player got an object.

Player talk to it (ask questions)

// here, interface provides to the player a checklist of things to ask.

Player has to improve it / change it until it gets good enough to pass the customs ?

At any moment, player can refuse or let the object in (accepted/refused)

Once player has decided object is OK, the object is validated  
(pass = WIN / destroyed = LOSE)

### **2.7.5 Rules**

Player can not refuse more than 3 objects in a row.

To get into the future, an object should follow the Time-Travel Living Matters Immigration Policy

## 2.8 Should

Using this interface, user can move parameters for each aspect It should feel like level in pipes are moving but no liquid input needed maybe just move a potentiometer and the liquid effect goes and down \* 1 set of tubes with different levels (potentiometer) \* 1 status indicator glitch ? move buttons ?

input water in pipes ? The machine should :

\* have a drawer \* be white color \* be in plastic \* have a USB I/O On a table there is demo sequencer (the machine).

Next to the machine, a box of samples is available to test the machine. Visual is generated

=> apply to object... if we know in advance all the untold characteristics of an object : do we still want it ?

People can take a sample and input it into the machine (they may wear gloves first). Then , they can use the interface to adjust different parameters : nice / bad, dirty / clean, etc. Once they have setup their objects correctly, they can validate. The object is added to a display.

People can zoom and interact with the slide. To place a slide in the slot, people should open a door. The start signal should be sent when user close the door. \* 1 slot for a prepared slide : 75 mm by 25 mm (3[2033 ?] by 1[2033 ?]) \* 1 camera (focus and 1 zoom/microscopic camera lens ?) \* 1 decoding app \* 1 barcode scanner (may not be needed as everything will be generated) \* 1 case with a door Pour être accepté en cabine, votre bagage doit mesurer au maximum 55 x 35 x 25 cm

\* Width : 25 cm

\* Height : 31 cm

\* Depth : 22 cm

\* Weight : 3-4 kg ?

When a slide is placed in the scanner slot, it send a signal to start a new object definition.

Scanner may be 1 Raspberry Pi connected to a webcam with a lens

Open Source Dna Sequencer(case looks good !)

The installation recreates a futuristic setup where a machine called 'The Junkware Sequencer' can be used to twist parameters of living matters basde on text description. Object transgenesis through semantic bending Textual description of objects are generated from patents. The visitor can use the machine to visualize and adjust parameters of its object.

The decoder is a screen where people can monitor the state of their sample. It shows

activity of the cell.

We should wear lab white coats and glasses.

## 2.9 checklist

**Portable case based on designs of DNA sequencer** *"Pour être accepté en cabine, votre bagage doit mesurer au maximum 55 x 35 x 25 cm "*

### 2.9.1 HARDWARE

<http://www.exp-tech.de/Displays/LCD/Beaglebone-Black-Cape-LCD-7.html> <http://www.exp-tech.de/Mainboards/BeagleBone-Black.html>

#### Mindwaves

<http://neurosky.com/> [http://www.amazon.fr/Brainwave-Starter-incl-MindWave-Mobile/dp/B00B1B1H68/ref=sr\\_1\\_1?ie=UTF8&qid=1409667259&sr=8-1&keywords=neurosky#productDetails](http://www.amazon.fr/Brainwave-Starter-incl-MindWave-Mobile/dp/B00B1B1H68/ref=sr_1_1?ie=UTF8&qid=1409667259&sr=8-1&keywords=neurosky#productDetails) <https://github.com/robintibor/python-mindwave-mobile> <https://pypi.python.org/pypi/NeuroPy/0.1> <https://github.com/lihas/NeuroPy> <http://developer.neurosky.com/docs/doku.php?id=projects>

#### Oximeter-ref. CMS50E

<http://www.amazon.fr/oxym%C3%A8tre-CMS-50E-Rechargeable-logiciel-stockage/dp/B0021D4G91&keywords=CMS50D>

**Python lib :** <https://github.com/vinc/oximon>

<https://learn.adafruit.com/smart-measuring-cup> <http://forum.arduino.cc/index.php?topic=75402.0> may need some of those [http://en.wikipedia.org/wiki/Dye\\_tracing#Fluorescent\\_dyes](http://en.wikipedia.org/wiki/Dye_tracing#Fluorescent_dyes)

#### Sensor :

[medical#step4\\_6 http://skin.cdn-libelium.com/frontend/default/cooking/images/catalog/documentation/e\\_health\\_v2/blood\\_pressure\\_position\\_small.png](http://skin.cdn-libelium.com/frontend/default/cooking/images/catalog/documentation/e_health_v2/blood_pressure_position_small.png) <https://www.sparkfun.com/products/11776> <http://www.instructables.com/id/USB-Biofeedback-Game-Controller/> <http://www.flexvoltbiosensor.com/products/> <http://www.angelsensor.com/> (not released yet) [http://www.quirumed.com/fr/Catalogo/articulo/44476?gclid=CjwKEAjwt4ugBRD1x4ST9YHplzMSJACTDms8ALCGIjeSLTgKThdcAbNv0iveEZJ706u9oY2z8P0RrBoCkOvw\\_wcB](http://www.quirumed.com/fr/Catalogo/articulo/44476?gclid=CjwKEAjwt4ugBRD1x4ST9YHplzMSJACTDms8ALCGIjeSLTgKThdcAbNv0iveEZJ706u9oY2z8P0RrBoCkOvw_wcB) [http://skin.cdn-libelium.com/frontend/default/cooking/images/catalog/documentation/e\\_health/pantalla1.png](http://skin.cdn-libelium.com/frontend/default/cooking/images/catalog/documentation/e_health/pantalla1.png) <http://southpark.cc.com/clips/153051/flexi-grips>

## DNA portraits (products)

[http://www.helys.fr/catalog/product\\_info.php?products\\_id=80](http://www.helys.fr/catalog/product_info.php?products_id=80) [http://www.eurodiag.eu/dna\\_kit\\_instruction.php](http://www.eurodiag.eu/dna_kit_instruction.php) <http://www.dna11.com/> <http://www.helys.fr/catalog/sample.php>

## DNA sampling Kit

<http://molecular.roche.com/assays/Pages/cobasDNASamplePreparationKit.aspx> [http://en.wikipedia.org/wiki/DNA\\_extraction](http://en.wikipedia.org/wiki/DNA_extraction) <http://www.mobio.com/microbial-dna-isolation/powerlyzer-ultraclean-microbial-dna-isolation-kit.html>

**DNA Analyzer in a DVD reader!** <http://www.kth.se/en/aktuell/nyheter/dvd-lasaren-gor-comeback-som-hiv-testare-1.380911>

## Open spectrometers

<http://publiclab.org/wiki/spectrometer> <https://github.com/nmz787/python-spectrometers> <https://github.com/tomkinsc/open-spectrometer> <http://code.google.com/p/pyms/>

## Spectrofluorimeter

<http://en.wikipedia.org/wiki/Spectrofluorometer> <http://www.hellopro.fr/spectrofluorimetres-2012227-fr-1-feuille.html> [http://img.directindustry.fr/images\\_di/photo-g/spectrofluorimetres-microplaques-68213-6670507.jpg](http://img.directindustry.fr/images_di/photo-g/spectrofluorimetres-microplaques-68213-6670507.jpg) <http://www.directindustry.fr/prod/safas-sa/spectrofluorimetres-microplaques-68213-1422675.html> <http://books.google.de/books?id=swpxednwqRAC&pg=PA100&lpg=PA100&dq=Spectrofluorimeter>

## FLOSS DIY Fluoromètre

<http://contact.asv.free.fr/PhotoFluo.htm#Caractéristiques> [http://openwetware.org/wiki/Citizen\\_Science/Open\\_Fluorometer\\_Project](http://openwetware.org/wiki/Citizen_Science/Open_Fluorometer_Project) <http://publiclab.org/wiki/chlorophyll-fluorometer> <http://tooling-around.blogspot.de/2012/05/have-been-toying-with-idea-of-making.html>

## Scanner box

[http://ecx.images-amazon.com/images/I/41kPB0Wz2xL.\\_SL500\\_AA300\\_.jpg](http://ecx.images-amazon.com/images/I/41kPB0Wz2xL._SL500_AA300_.jpg) <http://narcodetect.com/13-scanners> <http://www.bionissarl.com/bionis/CCMEA.html>

## Film scanner

[http://www.amazon.fr/DNT-DigiScan-Scanner-diapositives-Allemagne/dp/B0039RHVSA/ref=sr\\_1\\_1?s=computers&ie=UTF8&qid=1409729170&sr=1-1&keywords=ionscan](http://www.amazon.fr/DNT-DigiScan-Scanner-diapositives-Allemagne/dp/B0039RHVSA/ref=sr_1_1?s=computers&ie=UTF8&qid=1409729170&sr=1-1&keywords=ionscan) <http://oldcamerajunk.blogspot.de/2013/03/wolverine-film-scanner.html>

## Ultrasound scanners (Medical)

[http://www.ultrasound-scanners.co.uk/ultrasound\\_details\\_usb\\_ultrasound.php?id=751&usb\\_probe=SeeMoreUSBAbdominalProbe](http://www.ultrasound-scanners.co.uk/ultrasound_details_usb_ultrasound.php?id=751&usb_probe=SeeMoreUSBAbdominalProbe) [http://whtianyi.en.alibaba.com/product/578477558-215890137/USB\\_7\\_5\\_MHz\\_linear\\_probe\\_PC\\_ultrasound\\_scanner\\_.html](http://whtianyi.en.alibaba.com/product/578477558-215890137/USB_7_5_MHz_linear_probe_PC_ultrasound_scanner_.html) [http://ultrasound.engineering.wustl.edu/index.php/Cell\\_Phone\\_SDK\\_Full\\_Kit](http://ultrasound.engineering.wustl.edu/index.php/Cell_Phone_SDK_Full_Kit) : <http://www.mobisante.com/products/product-overview/> (printers ) [http://jsyang21.en.ec21.com/Ultrasound\\_Thermal\\_Paper\\_for\\_Video--6787433.html](http://jsyang21.en.ec21.com/Ultrasound_Thermal_Paper_for_Video--6787433.html) sub

## 2.9.2 Ultrasound cleaner

[http://www.amazon.fr/Colour-Direct-Professional-Nettoyeur-Ultrasons/dp/B00KS8HYMQ/ref=sr\\_1\\_2?ie=UTF8&qid=undefined&sr=8-2&keywords=ultrasonsprimante](http://www.amazon.fr/Colour-Direct-Professional-Nettoyeur-Ultrasons/dp/B00KS8HYMQ/ref=sr_1_2?ie=UTF8&qid=undefined&sr=8-2&keywords=ultrasonsprimante) [http://www.amazon.fr/AEG-USR5516-Nettoyeur-%C3%A0-Ultra-Sons/dp/B002B3R56G/ref=sr\\_1\\_1&keywords=ultrasons](http://www.amazon.fr/AEG-USR5516-Nettoyeur-%C3%A0-Ultra-Sons/dp/B002B3R56G/ref=sr_1_1&keywords=ultrasons) [http://www.amazon.fr/Sanitas-SUR-42-Nettoyeur-Ultrasons/dp/B007BNGV9S/ref=pd\\_cp\\_k\\_1](http://www.amazon.fr/Sanitas-SUR-42-Nettoyeur-Ultrasons/dp/B007BNGV9S/ref=pd_cp_k_1)

## Hahaha

[http://www.amazon.fr/Bac-Nettoyage-Vibrant-Ultra-Sons-comforteo/dp/B004QD8842/ref=pd\\_sxp\\_grid\\_pt\\_0\\_0](http://www.amazon.fr/Bac-Nettoyage-Vibrant-Ultra-Sons-comforteo/dp/B004QD8842/ref=pd_sxp_grid_pt_0_0) [http://www.amazon.fr/NEWGEN-MEDICALS-Nettoyeur-professionnel-ultrasons/dp/B000N4DUPA/ref=pd\\_sxp\\_grid\\_pt\\_0\\_2](http://www.amazon.fr/NEWGEN-MEDICALS-Nettoyeur-professionnel-ultrasons/dp/B000N4DUPA/ref=pd_sxp_grid_pt_0_2)

## Scanner code-barres USB

[http://fr.eachbuyer.com/usb-barcode-scanner-reader-bar-code-handheld-laser-id-upc-ean-high-speed-p35671.html?currency=EUR&utm\\_source=google&utm\\_medium=CSE&utm\\_content=%](http://fr.eachbuyer.com/usb-barcode-scanner-reader-bar-code-handheld-laser-id-upc-ean-high-speed-p35671.html?currency=EUR&utm_source=google&utm_medium=CSE&utm_content=%)

## Voight-Kampff\_machine

[http://bladerunner.wikia.com/wiki/Voight-Kampff\\_machine](http://bladerunner.wikia.com/wiki/Voight-Kampff_machine) <https://www.youtube.com/watch?v=Umc9ezAyJv0> <http://www.keithfullertonwhitman.com/photos/>

## Personal genome machine (50 000 USD)

<http://www.forbes.com/forbes/2011/0117/features-jonathan-rothberg-medicine-tech-gene-machine.html>

## DNA Sequencer

<http://infohost.nmt.edu/~biology/sequencer.htm> <http://www.clcbio.com/sequencer/>  
[http://www.oezratty.net/wordpress/wp-content/WindowsLiveWriter/Les-dessous-techniques-du-squenage-du-gn\\_82A7/gs-flx-diagram\\_thumb.jpg](http://www.oezratty.net/wordpress/wp-content/WindowsLiveWriter/Les-dessous-techniques-du-squenage-du-gn_82A7/gs-flx-diagram_thumb.jpg)

## 3D Model

<https://3dwarehouse.sketchup.com/model.html?redirect=1&mid=70938b7d31c97132abfa9262>

## Data Sheet

[http://res.illumina.com/documents/products/datasheets/datasheet\\_miseq.pdf](http://res.illumina.com/documents/products/datasheets/datasheet_miseq.pdf)

## Make the case

<http://electronics.stackexchange.com/questions/111840/make-a-custom-plastic-case> <http://ask.metafilter.com/233463/How-to-get-a-plastic-case-made-for-a-prototype-product> <http://www.bopla.de/> sub

## 2.9.3 Desktop DNA printer

<http://helioslabs.blogspot.fr/2013/01/desktop-dna-printer-propoasl-1.html>

## Roland egx 350 engraver looks pretty much like a 3D bio printer

machine [http://www.engraving-machines-plus.com/assets/images/roland\\_egx-350\\_engraving\\_machine\\_01.jpg](http://www.engraving-machines-plus.com/assets/images/roland_egx-350_engraving_machine_01.jpg) [Bio 3D Printer](<http://3dprint.com/11136/life-print-x-bio3d/>) : [LIFE-PRINTER X](<http://www.bio-3d.com/bioprinters.html>)



## 2.10 Acknowledgments

We want to thank so much for their support our dear partner Sophia Lin, from Make+ for her commitment and trust from the beginning of this amazing adventure ! She has such a great and joyful energy and her very professional and pragmatic has been very useful to us.

Catherine Ruggeri, general curator for the celebration of the diplomatically relations between France and China, from Institut Français, allowed us the dream of this project and make it happen.

Crossed lab want to thank also the cleverness and open minded and adventurous Dicream for their fundamental support.

Junkware is an incredible human and spiritual adventure that allowed us to open our minds and think abroad of our usual intellectual boundaries.

### **Make +**

Founded in 2013 by artists, designers and engineers, Make+ helps organize events and activities, so that these different communities can exchange ideas and methods, and collaborate by working on real projects together.[2028 ?][2028 ?]

website : [makeplus.org](http://makeplus.org)  
weixin : makeplus

### **CROSSED LAB**

Crossed Lab is a production agency in digital arts. Crossing styles, genres, and territories, Crossed Lab works on a renewed conception of production. Placing them as an innovative writing incubator, Crossed Lab set up a hybrid place between artistic issues, research, experimentation and transmission of our knowledge. They stick to a contemporary process crossing bridges of practices and creative process through a multimodal and trans-disciplinary approaches.

website : [2028 ?][2028 ?][crossedlab.org](http://crossedlab.org)  
vimeo : [2028 ?][vimeo.com/crossedlab](https://vimeo.com/crossedlab)

### **WORKSHOP SUPPORT : One Space**

ONE is a creative experimental space located in Shanghai Jingan district. It is open to all company and creative individuals. Participants are welcomed to take part in creative thinking process and space experimentations through workshops, talks and exhibitions.

website : [one-magazine.net/one](http://one-magazine.net/one)

### **Thierry Bardini Researcher**

Author of the book Junkware published in 2011, Thierry Bardini investigates the origins and stakes of cyberculture.

Trained as an agronomist, he is today a professor of sociology of technologies at the University of Montreal, .

**Workshop participants** Chen Yi, Feng Bin, Liu Feng , Jenny Lu , Albert Mayr, Han Yang , Miya Shen , Constance Garnier , Gabriele de Seta, Katy, Hao Rong, Li Ding, Jammes Jun Fang.

## **2.11 Team**

### **2.11.1 Clément Renaud - artistic direction**

Clément Renaud develop experimental initiatives at the crossroad of art, code, science and technologies. After 6 years in China, he is now researching about new innovation models worlwide at the LTCI lab of ParisTech Telecom. <http://clementrenaud.com>

### **2.11.2 Catherine Lenoble Digital writings**

Catherine Lenoble explores writing in a networked environment. Ubiquity is the hero of her first novel *petitBain*, a meta-narrative published in 2010. Since 2012, she proposes creative workshops at the intersection of collaborative writing & public space. <http://litteraturing.wordpress.com>

### **2.11.3 Julien Maudet Game designer**

Julien Maudet is a game designer and publisher. He founded in 2011 Les Chiens de l'Enfer to explore publishing, collaborative writing and distribution practices of board games in urban environment (print-on-demand, 3D printing, in situ creation). <http://dcalk.org>

### **2.11.4 Qu Hongyuan Stage designer**

Both fashion and stage designer, Qu Hongyuan works between Shanghai and Lyon. She has founded in 2011 the 3rd Hand project to experiment ways of upcycling second hand clothes and fabric. <http://quhongyuan.com>

### **2.11.5 Lionel Radisson Interactive designer**

Lionel Radisson creates installations where video, objects, languages and digital writings meet through generative design. His works have been shown in international exhibitions (Saint-Étienne Design Biennale, Bruxelles Nuit Blanche, CMoDA...) <http://makio135com>

### **2.11.6 Sophia Lin Curator China**

Chinese-canadian living in Shanghai, Sophia Lin has founded the Make+ programme where artists, designers, academics and technologists from all over the world work together to develop projects artistic and experimental tech projects. <http://makeplus.org>

### **2.11.7 Meryll Messaoudi Production**

Somewhere between film set, opera stages and music festivals, Meryll Messaoudi manage production development of projects and initiatives supporting hybrid and innovative writings. <http://www.crossedlab.org>

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