

ÉTIENNE NDIAYE

WORKS 2017

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# KBPS

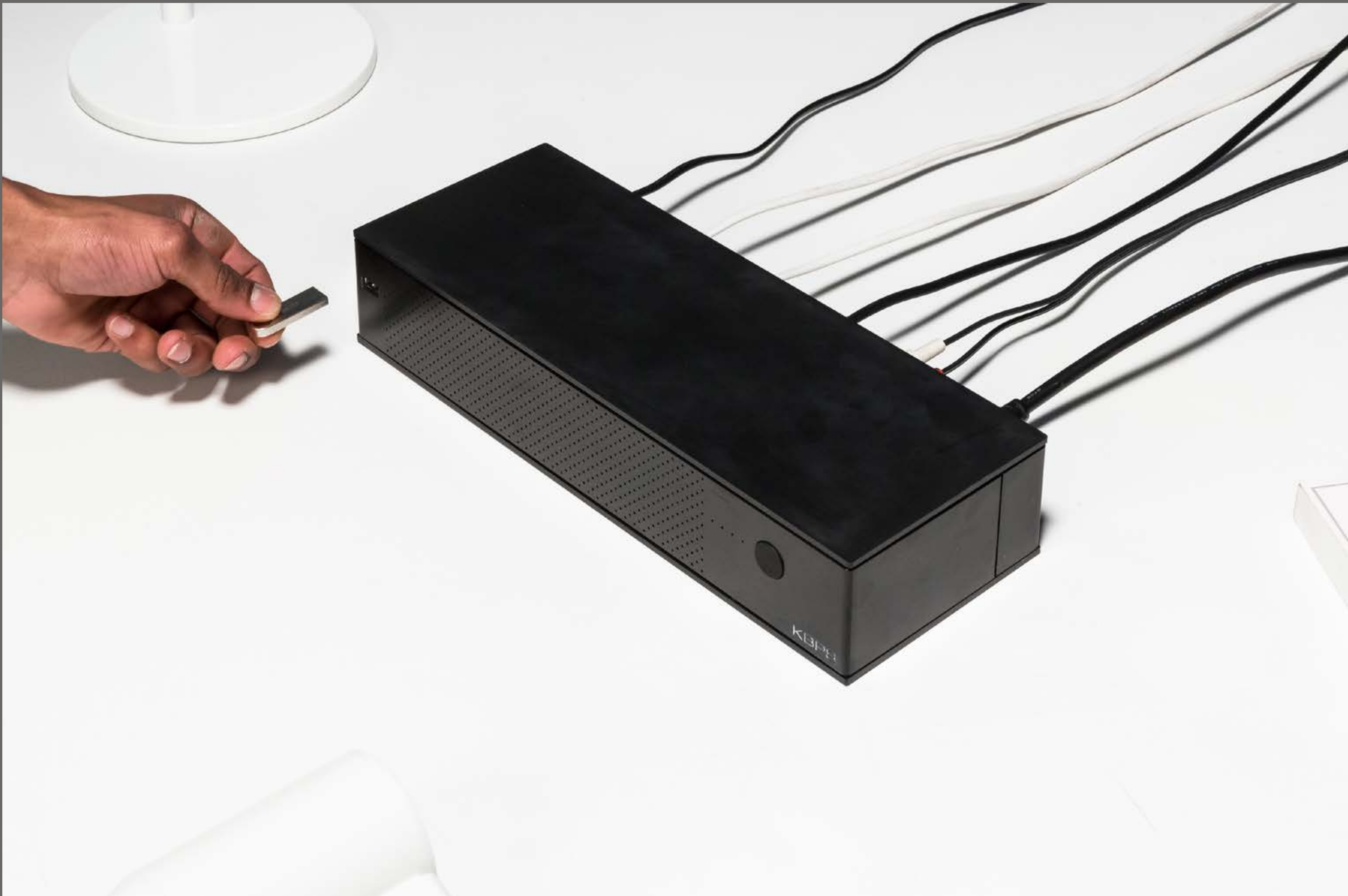
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Building a multisensory music format for domestic concerts

Situated somewhere in between home stereo, installation, and club sound system, kbps offers an unusual way to listen to music at home. Whether we encounter it at a concert, during a party, etc. live music is never only sound. Instead, it is a sum of various sensations received through the stage lights, the people moving around us, the temperature slowly rising, and so on. Nevertheless, each and every music format trying to encapsulate music the most accurately focuses on the quality of sound itself, but never on what is going on when we listen to music in real life.

kbps is a music format for creating audio-domestic concerts. Instead of consisting of sound channels only, it also includes four other channels, controlling domestic appliances: desk lamps, aquarium lights, fans, blenders, or even radiators. Each of these objects works as a scenographic element to transform any home into a momentary concert venue, trying to make home listening a one-of-a-kind experience of light, sound, and even air.





The project is comprised of three elements. The player decodes the music format and control the stereo and electrical outputs. The software acts as a production tool for creating and editing the content of the electrical channels that will be played alongside the music. The usb drive itself is only the physical vessel for the music format.

A video of the project in  
action can be seen at:  
[vimeo.com/210164088](https://vimeo.com/210164088).







On a more technical point of view, the project involved cnc machining of polyoxymethylene and aluminium, anodizing, finishing, 3d printing of technical parts, a raspberry pi, a hi-fi dac, custom-made shield to control electronics and electrical power without blowing everything up, openFrameworks (on my first prototypes of the project), then max, puredata, and bash scripting (plus setting up a remote access to control the whole setup with a phone or a computer without touching anything).









Early prototypes. In the first steps of the project, i started prototyping kbps as a power strip. The reason behind this choice was that another important aspect of the project along with music formats is home automation, or more specifically, the question of how to listen to music in smart homes.

Even though i know that a perfect implementation of kbps in the future would ideally imply no physical object at all (and probably be a plug-in for some smart wi-fi-enabled electrical panel, coupled with a special version of spotify), the role of the prototype here is to bridge the gap between the user's reality and the project's reality. The power strip version of kbps acted as a totem, a starting point to discuss other people's understanding of a music format like this one.

Of course, these exchanges made me reshape my approach, realising the focus should not be on the domestic appliances but on the music itself. The concept of smart home is an interesting context for the project to come to life but it should be seen as the outer layer of kbps.





Kbps was part of a collective exhibition entitled Salone Ludico during the 2017 edition of the Salone del Mobile in Milan.

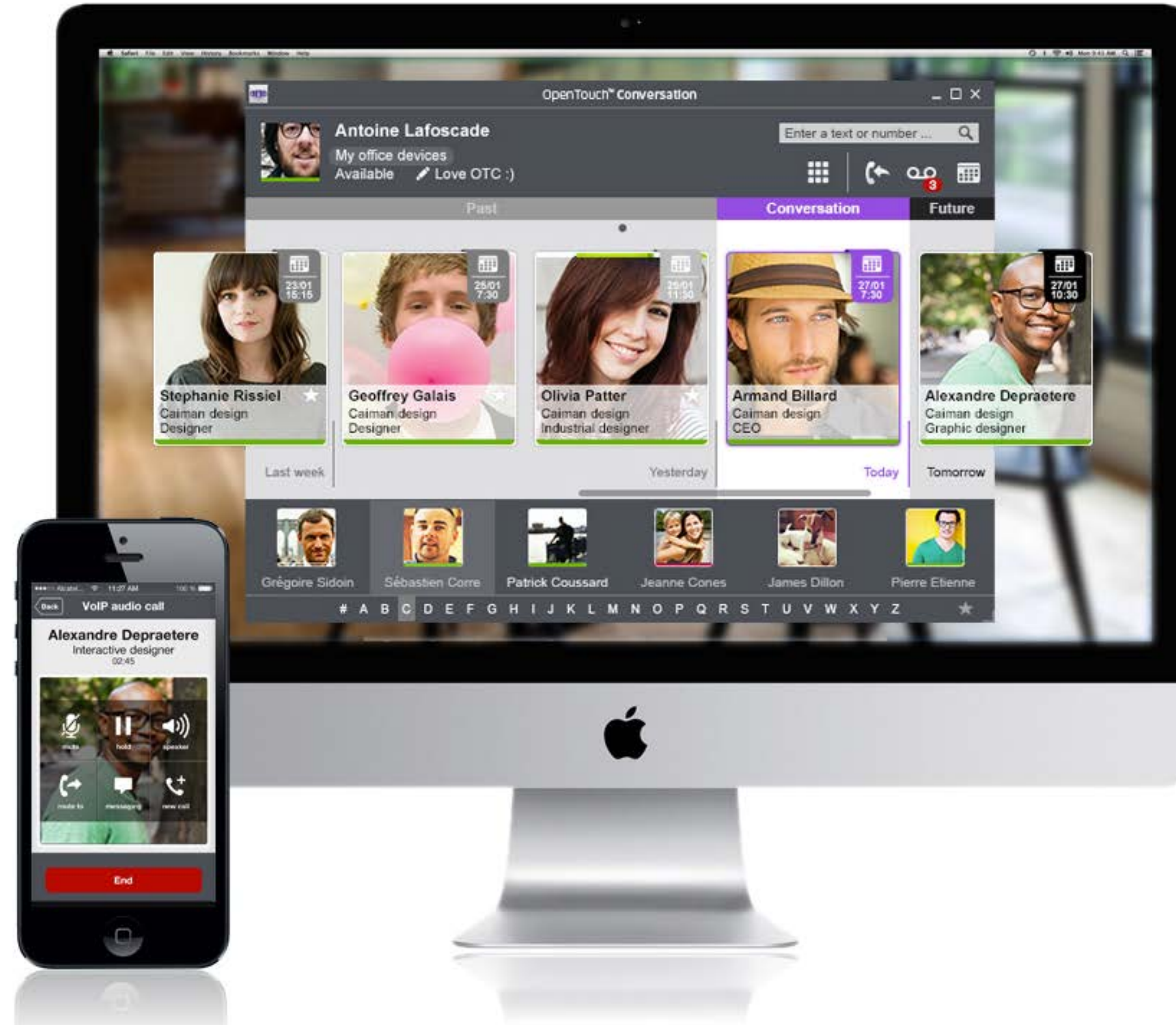
# OTC SOLUTION

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Refining the experience of a cross-device conference client



Open Touch Conversation is a cross-device conference client created by Alcatel-Lucent. The first version was already implemented when i joined the studio Caiman Design. Our role was to use all the feedback we were collecting to redesign the product for the next version. This new version ended up being a major overhaul: new use cases appeared and we couldn't just paste them onto the previous experience. From icon design to user journey, we had to make in-depth changes to the product to make sure this new version would provide a seamless experience between every use cases and touchpoints.









# DRAWING CONCLUSIONS

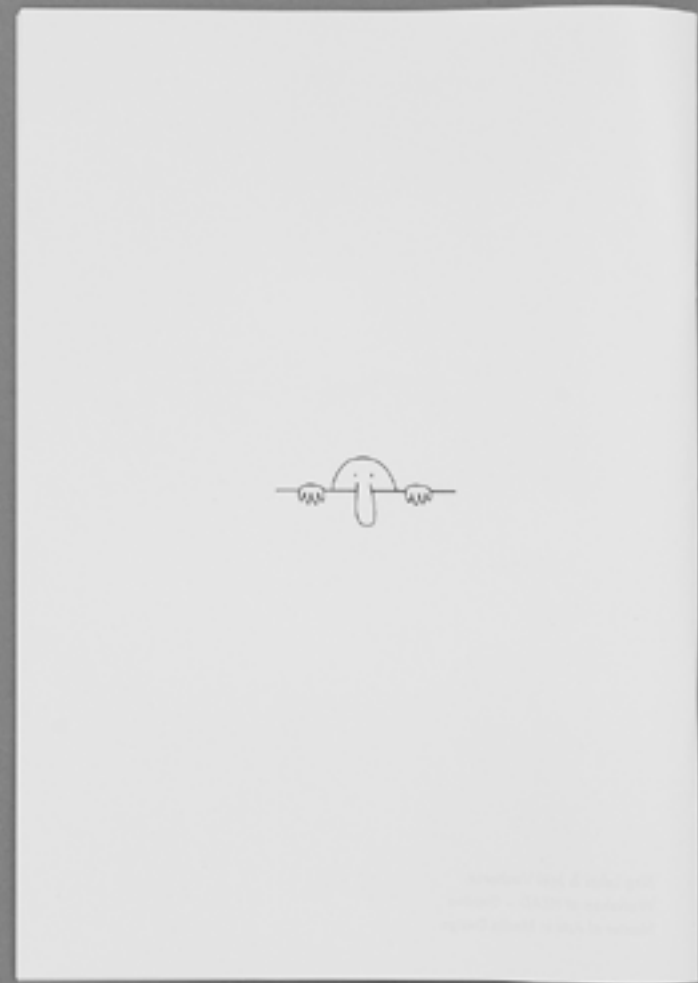
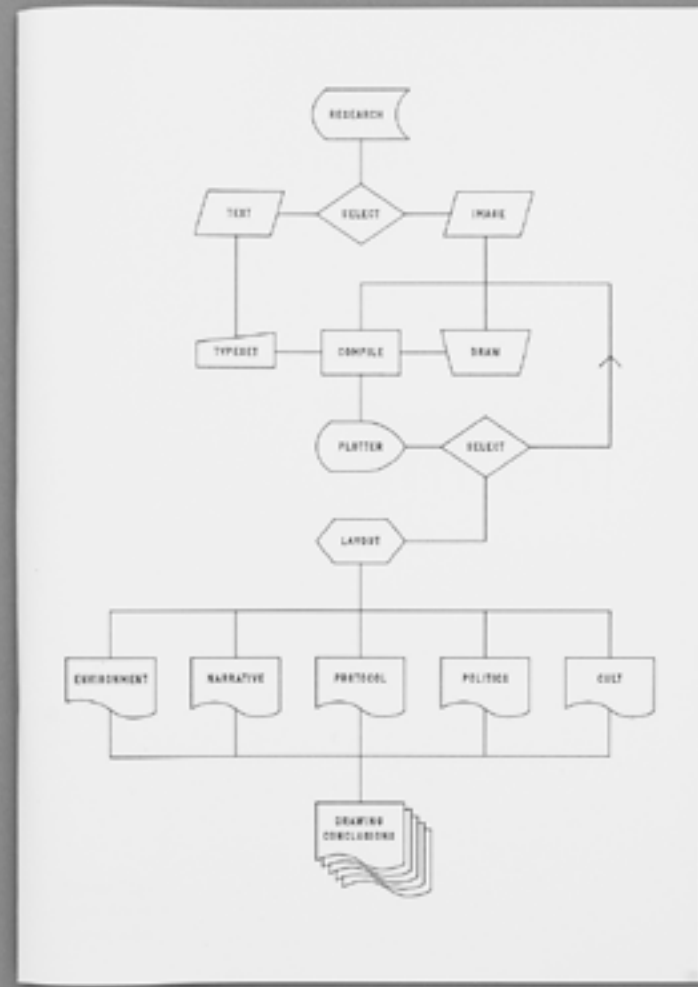
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Writing a story with a robotic hand

“Diagrams, maps and technical drawings were largely used to codify global envisions and to disseminate ‘images’ of the planet Earth as a whole. The ‘Drawing Conclusions’ workshop aimed to reflect upon and to trace back models that emerged in the 1950s when the mathematical theory of communication and cybernetics spread out. Students started to explore a wide range of references from the history and the theory of culture and technology. With the help of the Scriptographer software, they designed sequences of graphical representations, thus drawing conclusions on five given topics: Environment, Narrative, Protocol, Politic, Cult. The process ended up in the Drawing Conclusions books series. One contains short essays, while the other is made of pictures carefully drawn by a machine taking advantage of the inner structure of vector graphics.”

Our part was on the second chapter of the book, entitled Narrative. Through the pages, we retraced a history of the (narrative) line by exploring different ways of working with (traced) lines. We ended up turning the ZÜND S3 M-800 plotter into a loom, a quill, or even a plotter, until it started behaving as the the right tool for the lines it was drawing.

The opening text  
subtling our chapter.



using the loom to weave stories

the textile becomes the paper  
and the patterns the letters

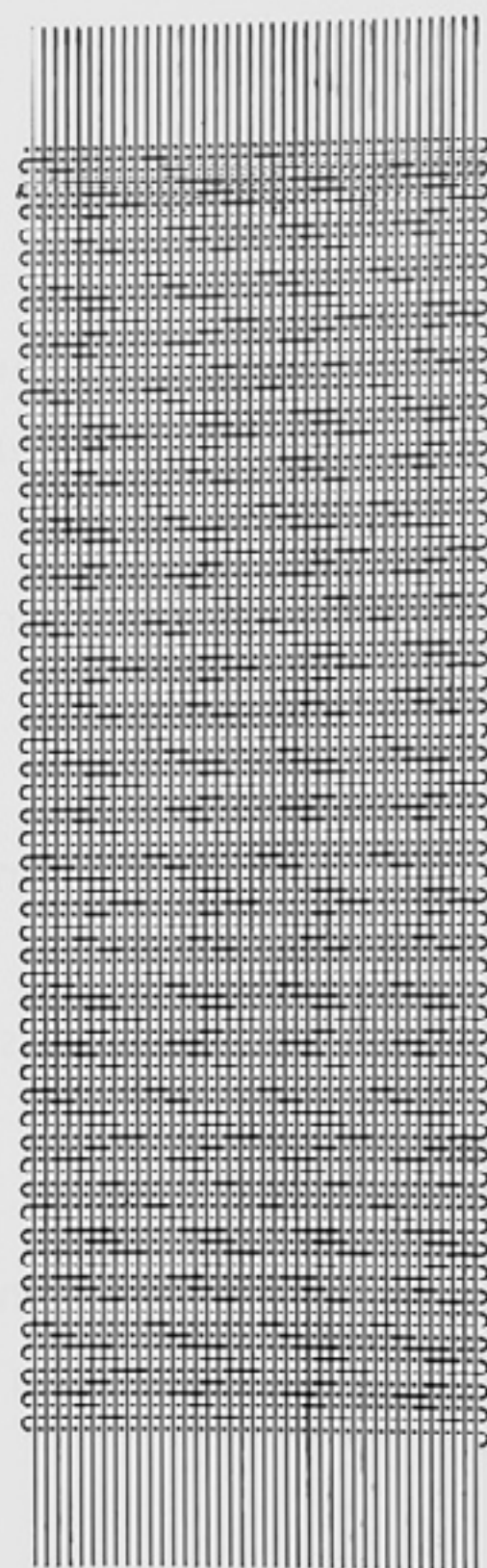
but then the words are pressed  
and the story stands still

so the pictures begin to move

seeming organized at first  
but not for long

even if they sometimes find  
new meaning in the mess





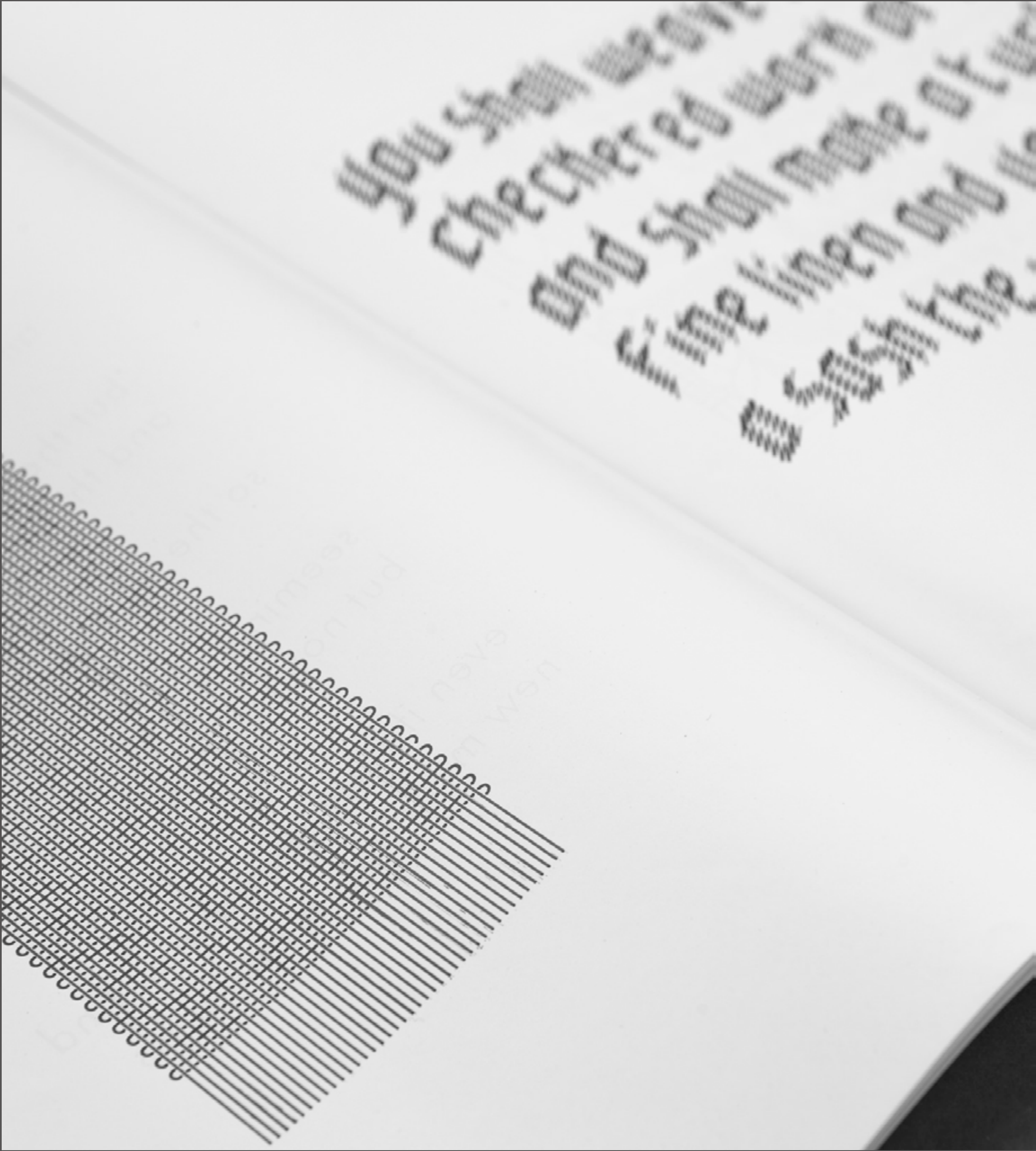
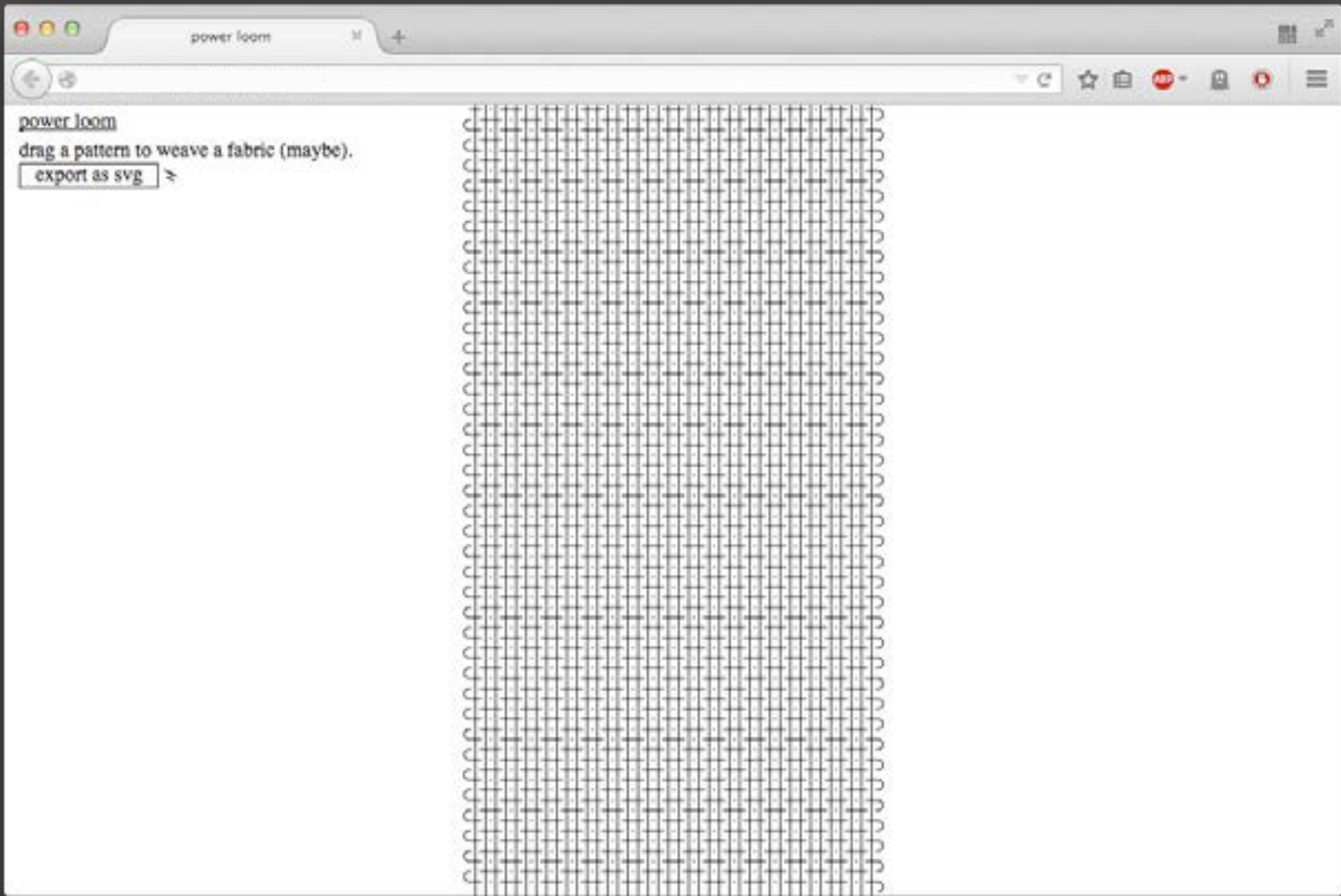
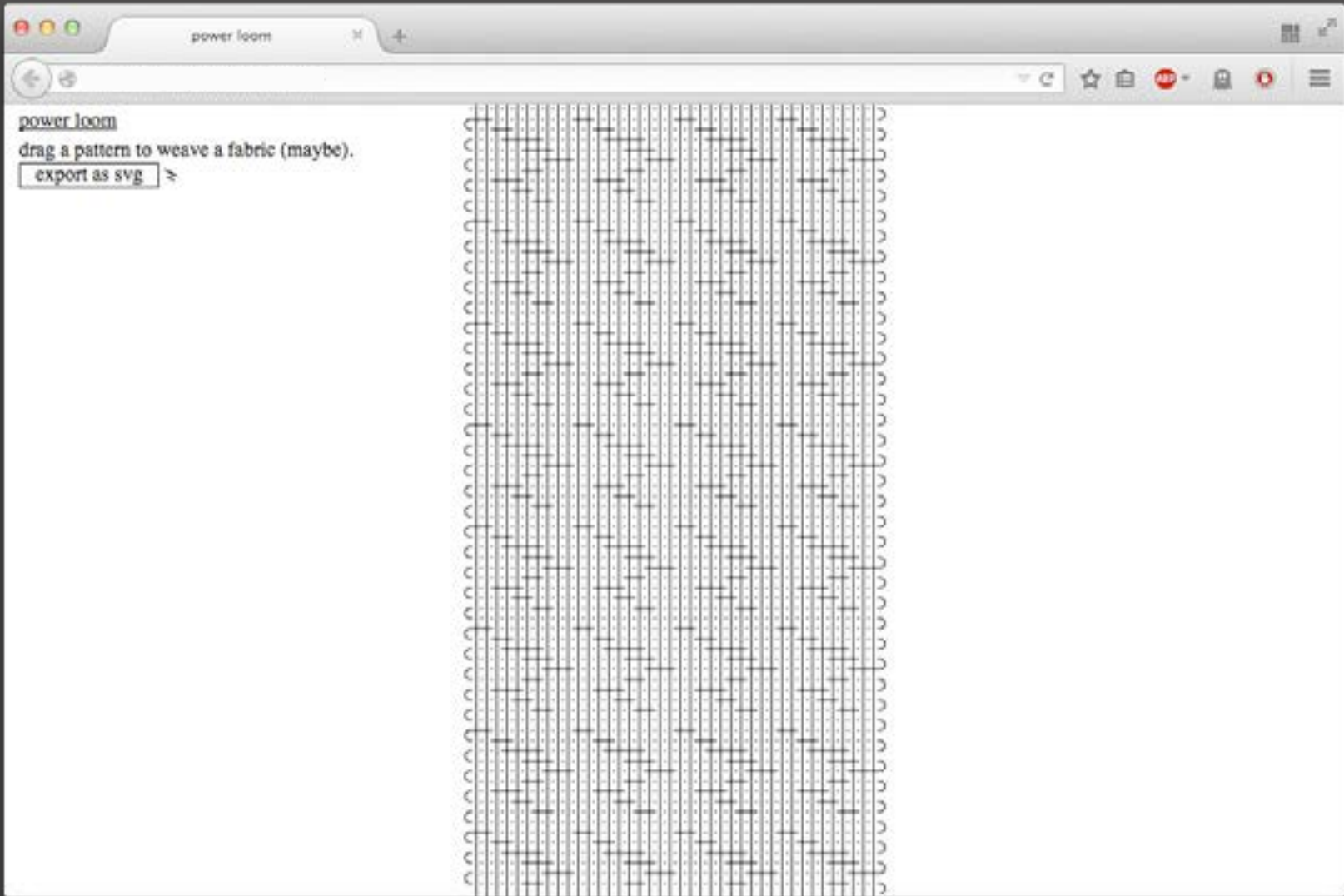
*you shall weave the tunic of  
checkered work of fine linen  
and shall make a turban of  
fine linen and you shall make  
a sash the work of a weaver*

Left page: weaving was our first depiction. It is the starting point for the line (be it a leaf, a piece of yarn, or thread) to become a surface and develop in a new dimension through which new lines appear and create patterns via the repetitive act of moving a shuttle across the loom. The fabric becomes a language and its patterns reflect the story of a social, religious, or aesthetic order, conveying meaning to the fabric they adorn.

Right page: as soon as the papyrus and the stylus (and later the parchment and the quill) appear, the text needn't be incised or engraved in a support anymore. The writer is no longer constrained by the action of pressing or carving, and can start making continuous lines. All the lines traced create a new surface on the writing medium. From one side to the other, the scribe weaves a story with lines, creating characters that gather into words and ideas weaving themselves as narrations.

On this page is Exodus 28:39 in which God gives instructions concerning the sacred garments of the priests.

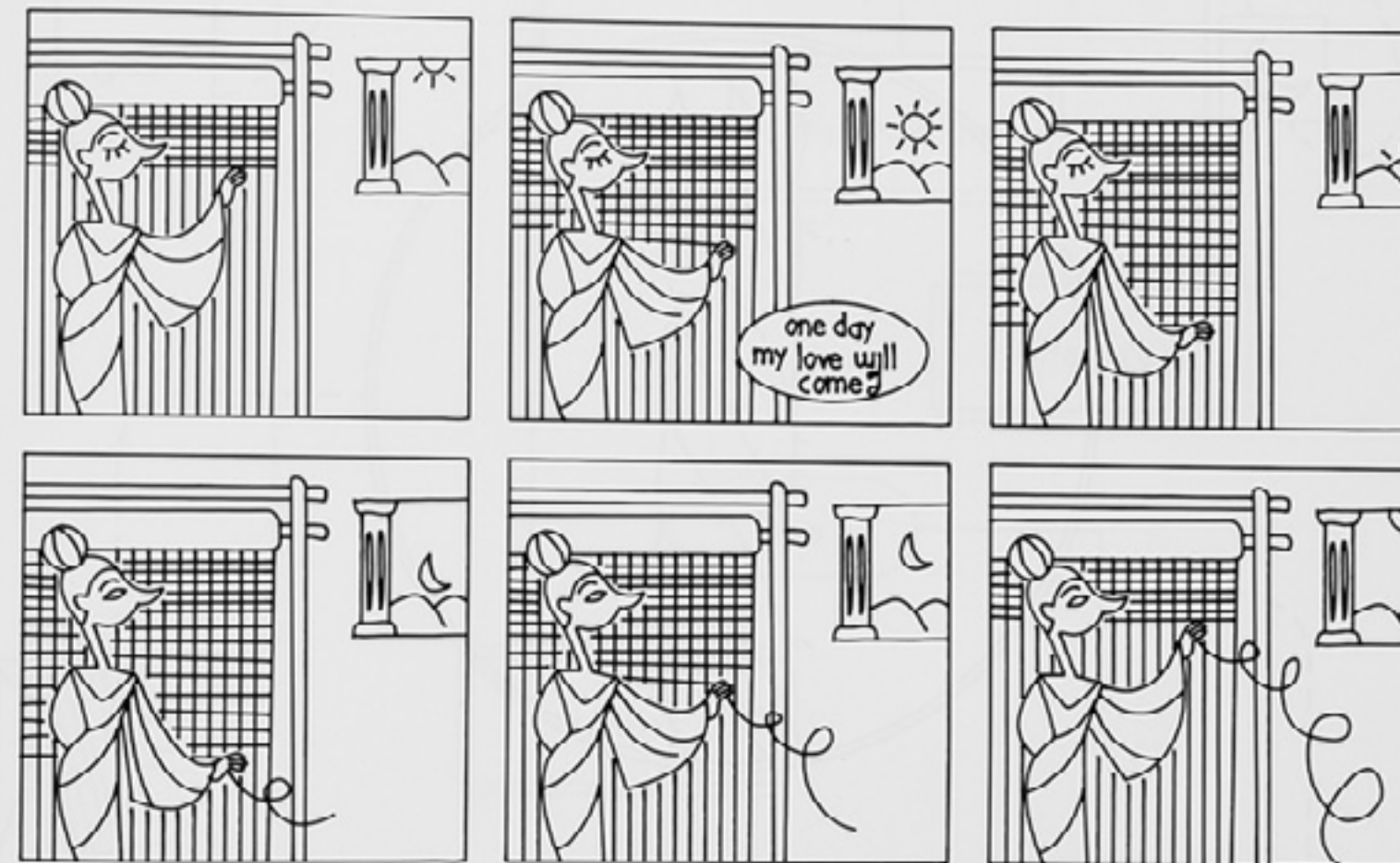




We used the first page of the loom as an opportunity to explore new tools and ways to draw. Using paper.js, a vector drawing frameworks for the web, i built an in-browser power loom that we could feed with little patterns to generate a javascript fabric. With the resulting file, the plotter would act as a weaver, first drawing the warp, before moving like a shuttle and weaving the weft across the loom.



In One Dimension, did not a moving Point produce a Line with two terminal points? In Two Dimensions, did not a moving Line produce a Square with four terminal points? In Three Dimensions, did not a moving Square produce — did not this eye of mine behold it — that blessed Being, a Cube, with eight terminal points? And in Four Dimensions, shall not a moving Cube — alas, for Analogy, and alas for the Progress of Truth if it be not so — shall not, I say the motion of a divine Cube result in a still more divine Organization with sixteen terminal points?



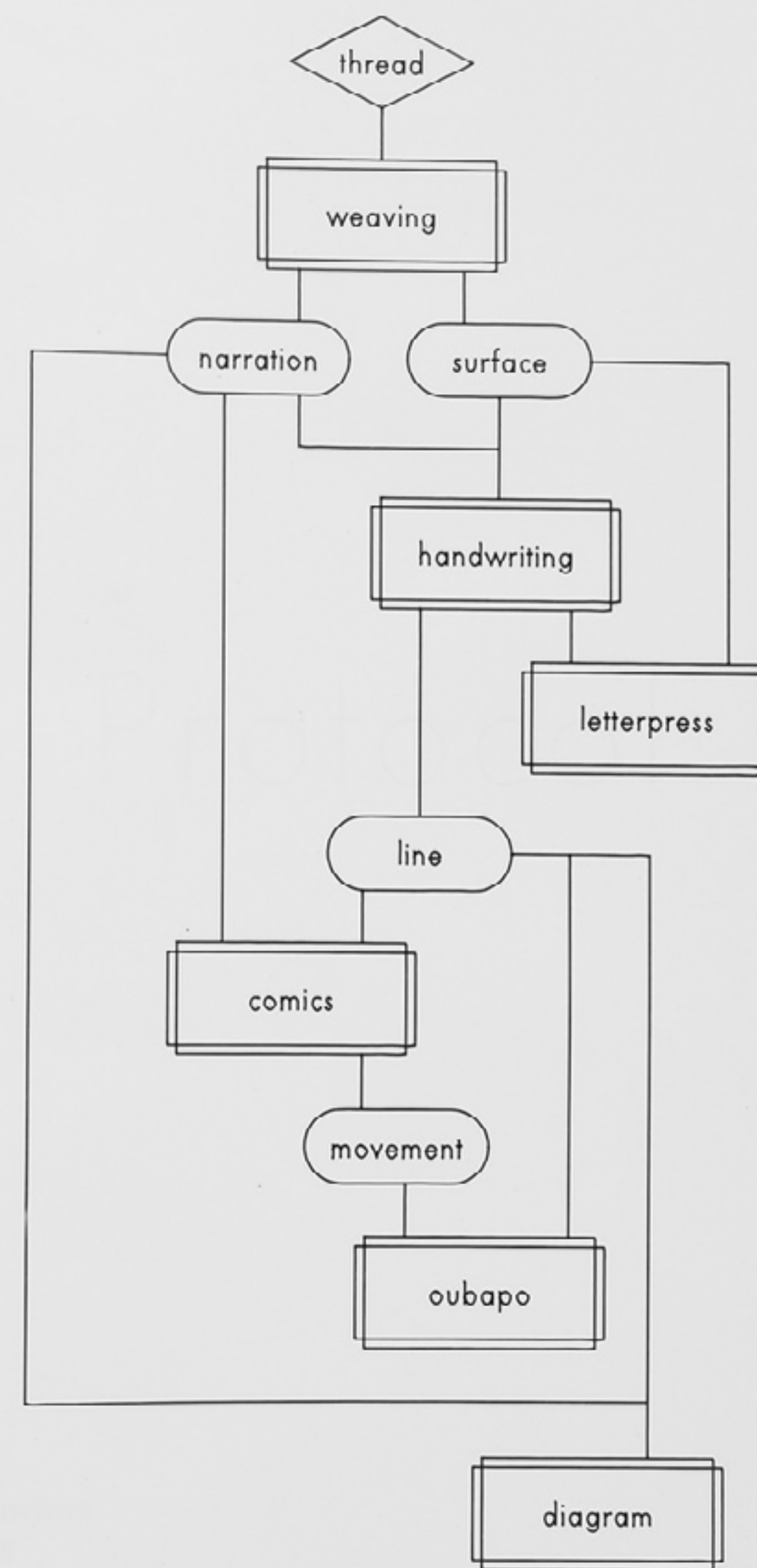
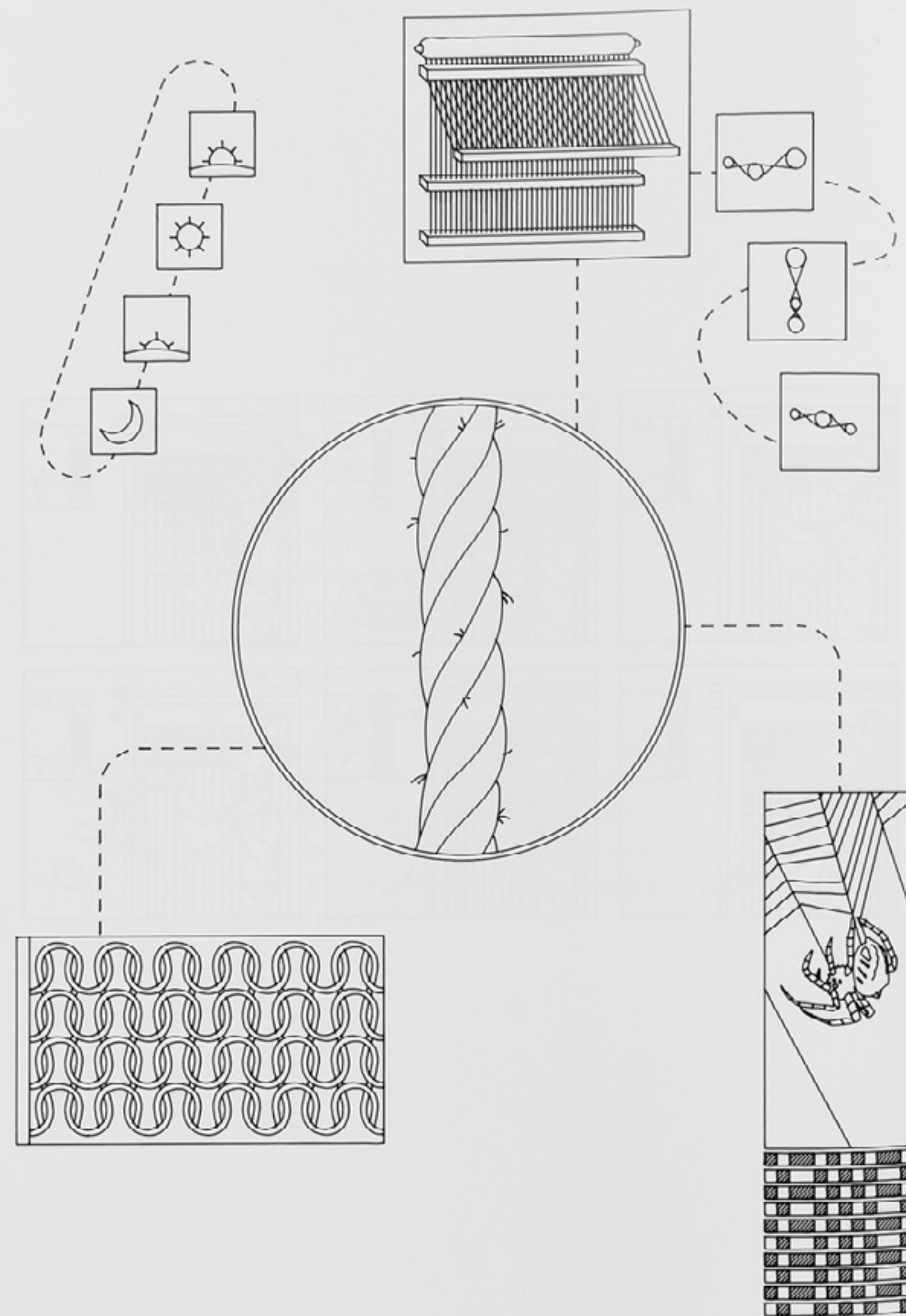
Left page: the arrival of the printing press in Europe automates the process of writing. The words are made of a set of elements, a movable type, and the story is composed by an intermediary who has to rebuild the narration from a mosaic of components. The reader has to recompose a meaning from a series of engraved characters to follow the train of thought of the writer.

The text on this page is from Edwin Abbott's Flatland.

Right page: with comics, small elements of different natures fit together enabling the reader to connect the dots between various aspects of the story to follow the storyline. The narration happens on multiple levels and the little elements (the characters, speech bubbles, structure of the page, and so on) act as pebbles showing the path the reader will have to watch to re-create the narrative thread in their head.

This page depicts the story of Penelope, who promised to remarry after finishing the weaving of a shroud for Ulysses' father, while discreetly undoing her work at night to gain time.



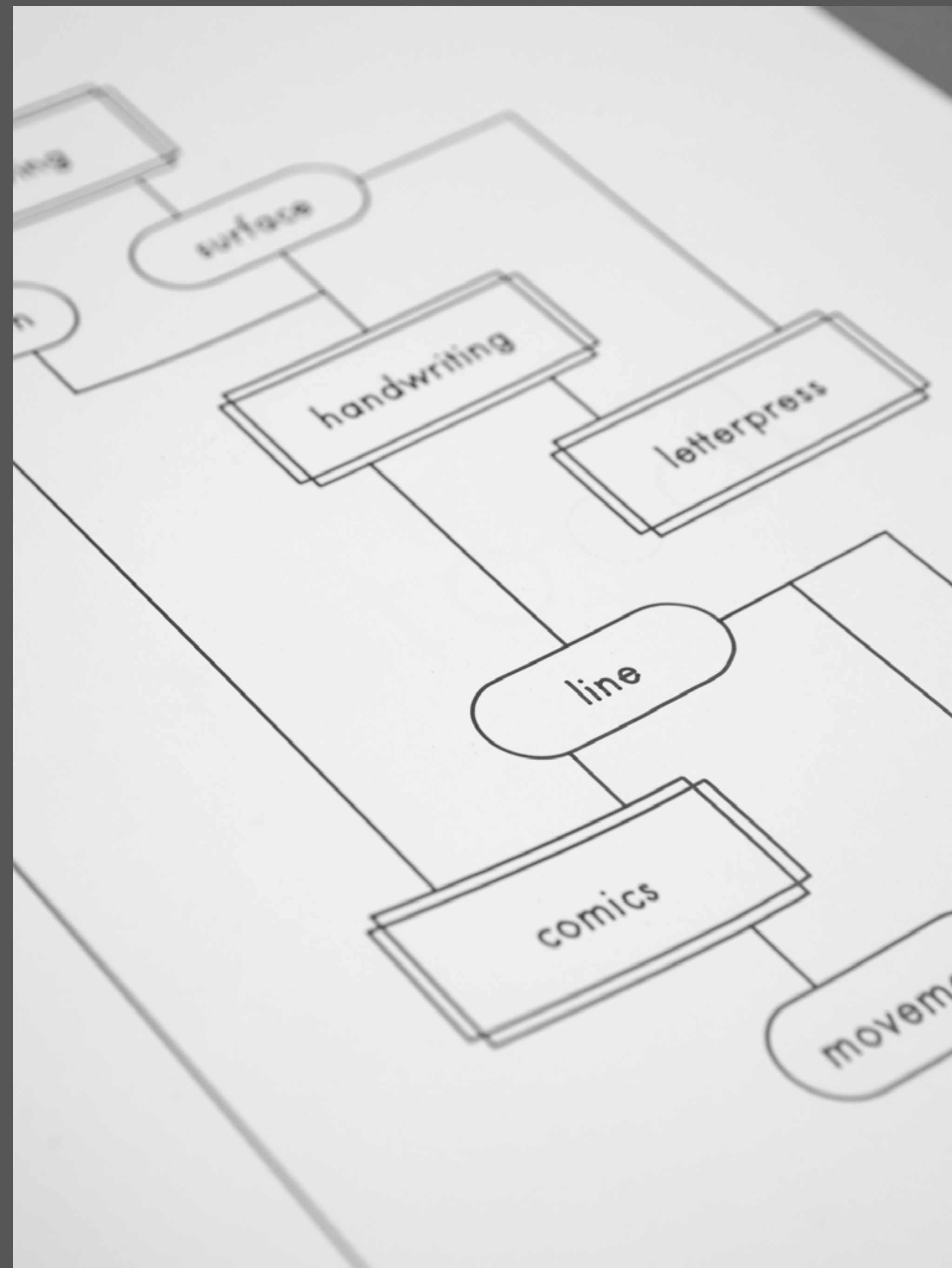


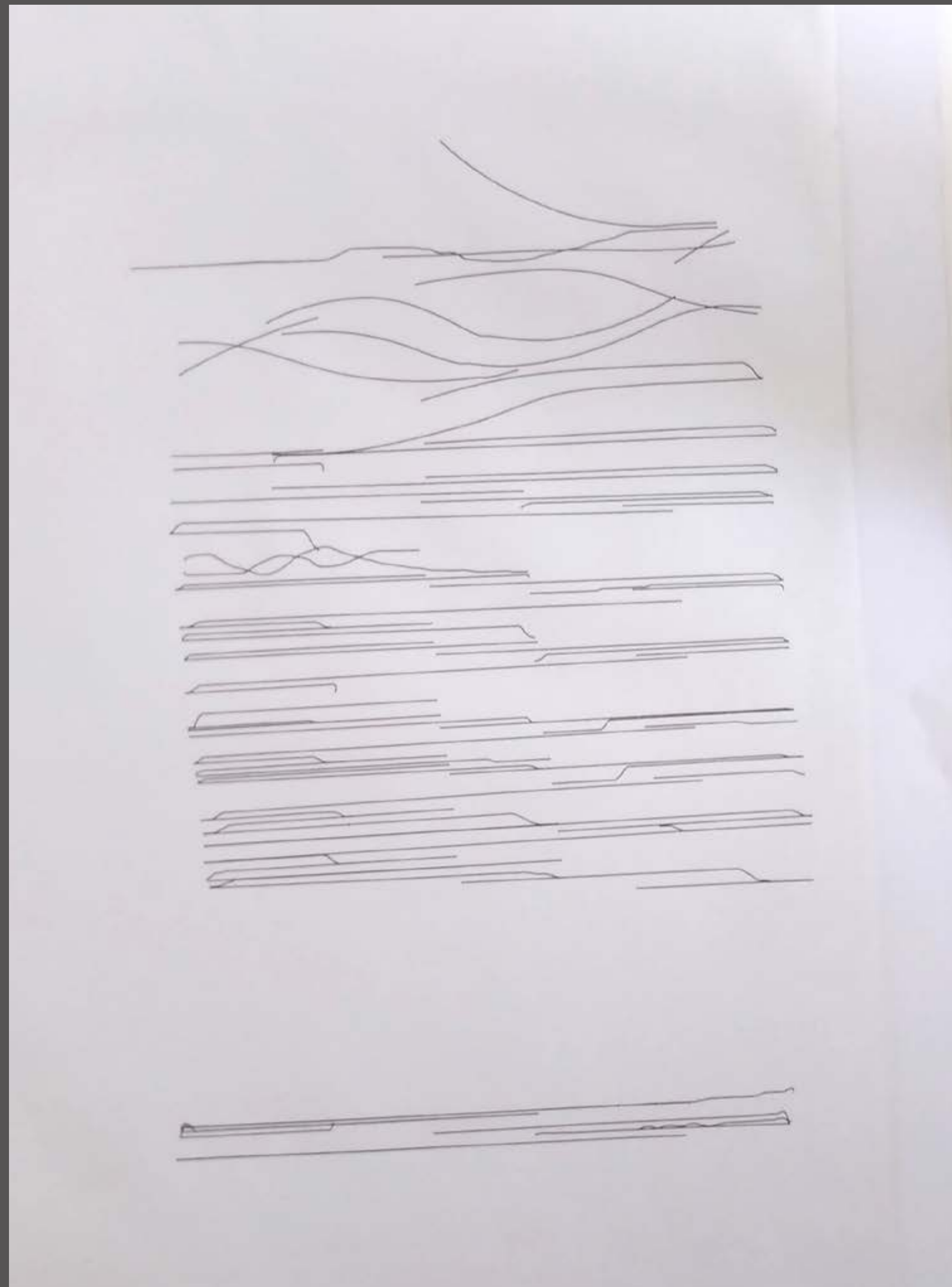
Left page: oubapo (French for “potential comics workshop”), is a comics movement from the early nineties derived from the literary avant-garde group oulipo. Using the same focus on constraints and randomness, comics created through the process of oubapo destructure the traditional elements found in comics along with the narration. Every element that used to act as a bead strung onto the narrative thread is now scattered over the page. Its narrative potential is only unlocked if the reader decides to create a story.

Right page: diagrams are a graphical way to simply explain complex ideas, processes, or concepts. Like oubapos, they are structured in a way that may not seem obvious or logical at first, even if they discreetly follow some organizational rules. A hybrid form for transmitting knowledge, diagrams can be viewed as pieces of visual design, a rigorous exercise on graphical structures and compositions. But they can also be studied and understood, getting their real original meaning of a graphical vehicle for knowledge, much more appealing and concise than a linearly written definition or demonstration.



using the loom to weave  
the textile becomes the pattern  
and the patterns the letters  
but then the words are pressed  
and the story stands still  
so the pictures begin to move  
seeming organized at first  
but not for long  
if they sometimes find  
meaning in the mess





One of our early tests with three hands weaving (human + plotter). Despite interesting results and possibilities offered by this collaboration, we ended up giving full control to the machine for safety reason, thus turning our rustic human-machine loom into a fully automated power loom.



# ULTIMATE\_DOWNLOADER

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An airborne trap to lure illegal downloaders

“A floating balloon fitted with a mini computer creates an open wifi hotspot to access the Internet. However all requests are directed to the same web page that allows to download illegal content. Seduced by the proposal, the user is instantly photographed and identified by the system, which then posts the picture, the reference of the hacked file, the place and time of the offence on a social media network. Appearing to be an open project, the device could have been commissioned by a major entertainment corporation or an anti-download lobby.”





Filled with helium, the balloon floats in the air at a stationary altitude. The payload it carries generates an open hotspot for people on the ground to connect to. Each and every request made will redirect to this website offering free download of copyrighted files. The trap won't close unless the person logged in to the rogue hotspot tries to download one of the files available. The balloon then takes a picture from above (like some amateur map-making balloon imaging) and publishes it on twitter along with other parameters (what file has been downloaded, when, and, optionally, at which gps coordinates) helping to locate and apprehend the culprit.

Taking inspiration from improvised, hackerspace-made, tinkered objects, i chose to keep the object to its bare minimum: a physical malware with no superfluous frills. Probably made by some teenage hacker in his bedroom to get some pocket money from an entertainment industry backed lobby fighting illegal downloading with some shadowy methods.



The payload consists of a lithium-ion battery, a camera, a wi-fi dongle and a raspberry pi powering a node.js server. The rpi creates the wi-fi hotspot through the dongle and the server takes care of controlling the whole hardware and software setup.





Example tweets of voluntary victims along with the trapping interface.

# RESTORE TO FACTORY SETTINGS

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Drawing connections between Finnish birds and music recognition softwares



Restore to factory settings is the master thesis i did for the theoretical part of my diploma project as a student in media design at Head — Genève. It is an exploration of how, from 1997 to 2016, sound, music, and sound design helped shape cellphones and the way we use and understand them.

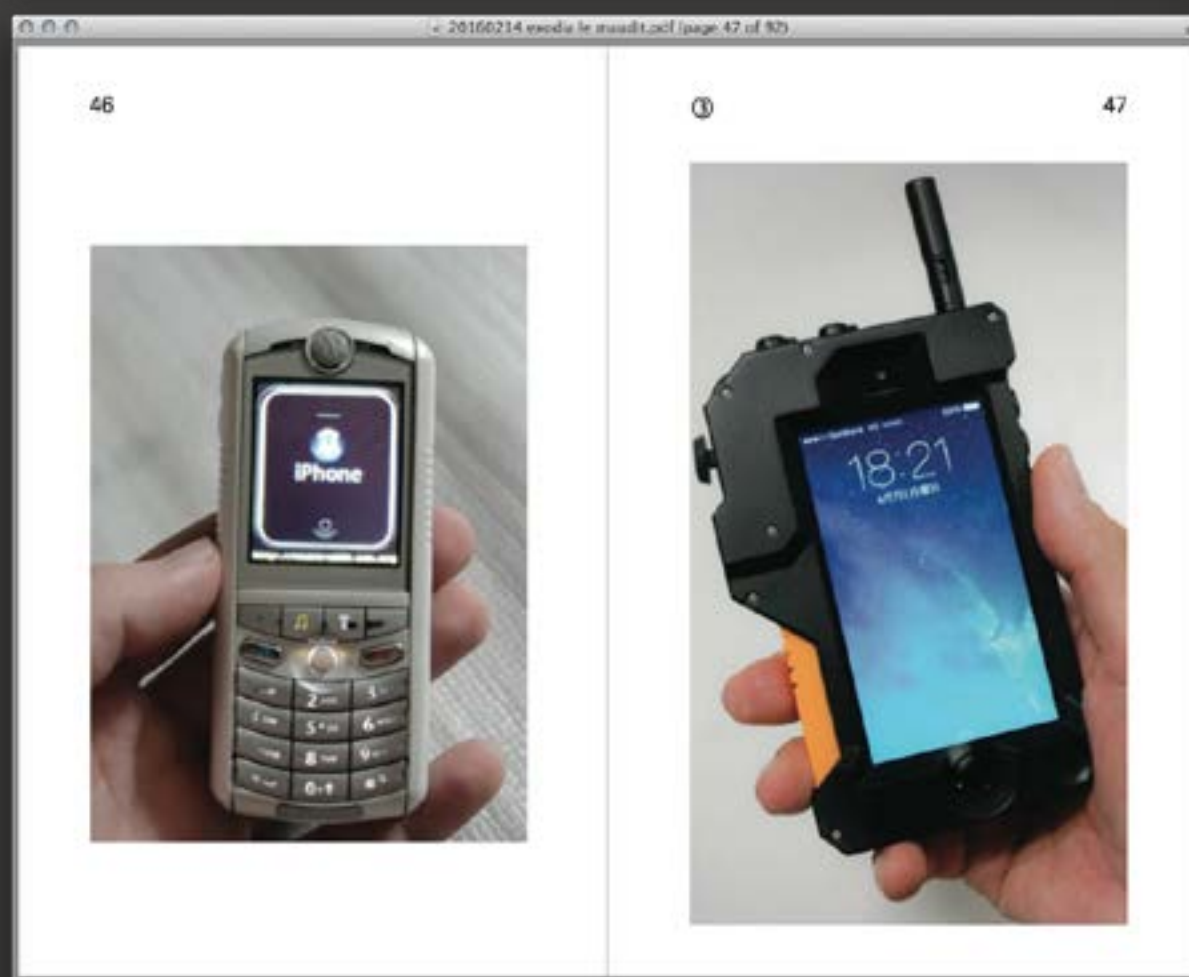
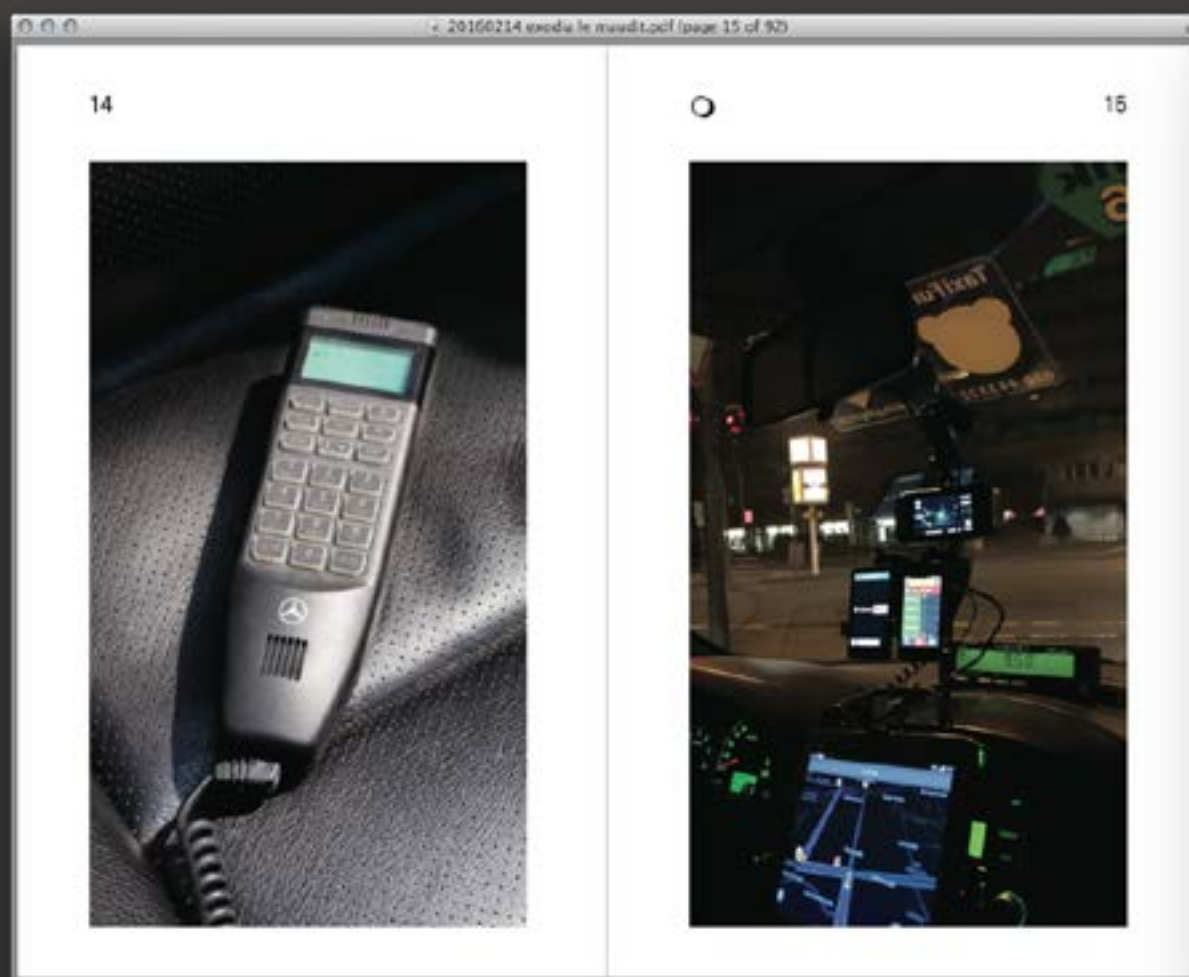
Using ringtones as a magnifying lens, i started with a study on the role they played in the end of the nineties, when cellphones began shifting from a tool for business people to a commonly found item among teenagers, gradually replacing the beeper. Customization being an important underlying aspect in that transformation, i use it afterwards along with the aspect of “the phone as an accessory” and “the evolution of sound synthesis chips” to braid an understanding of the evolution of ringtones in cellphones and their later demise in the following decade. I finally focus on music and voice in my last part and examine how they have contributed to reshape our understanding of mobiles in the past ten years (through music recognition softwares, voice assistants, podcasting, and so on). But rather than doing this by studying users, i investigate manufacturers instead, exploring how they projected (successfully or not) their visions for the future of cellphones on new ways for us to listen and talk to our phones, as well as for our phones to understand their users and the world around them.





Discussing with a friend one day, we suddenly hear a phone vibrating on the desk next to us. Thinking it was hers, i ask why she doesn't pick it up. "Mine doesn't vibrate like that," she tells me. That is, perhaps, the best explanation of the title of this thesis: restore to factory settings. If, nowadays, we all check our phones upon hearing a notification to realize it was from someone else's device, we also have become increasingly more sensitive to what our mobiles feel and sound like. The relationship we have developped to them is one of acute details and rythms, frequency responses and microphone locations.





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Digital Interface, un protocole de communication entre instruments et ordinateurs principalement utilisé dans le domaine de la musique électronique). Ce nouveau groupe de formats, cette fois-ci optimisés pour la communication entre ordinateurs, empêchait de pouvoir répliquer aussi facilement qu'avant les sonneries. De la même manière que le format des sonneries monophoniques variait suivant les modèles de téléphones, la compatibilité d'une sonnerie polyphonique n'était assurée que sur un nombre restreint de mobiles. Mais malgré ça, la polyphonie est considérée comme un âge d'or dans la culture des ringtones. À la sortie du Nokia 3510, le premier modèle du constructeur finlandais capable de jouer plusieurs sons simultanément, Nokia présentait la polyphonie comme une amélioration dramatique de la qualité sonore, "be it melodious sounds for ring tones, alerts or game sounds."<sup>36</sup>

Le portable sur lequel je vais m'attarder ici n'est cependant pas le 3510 évoqué plus tôt, mais un autre modèle, plus récent, le Nokia 7280. Déployé en 2004, il arrive dans un marché beaucoup plus mature du point de vue du son<sup>37</sup>, mais aussi du point de vue du rapport à l'objet téléphone portable. La série 7000 de Nokia dont il fait partie, se voit baptisée "Fashion and Experimental series." Si cette gamme n'est inaugurée qu'en 1999, soit deux ans après l'annonce du 6110 que j'ai abordé dans la partie précédente, on voit déjà un écart important se creuser au niveau du discours de la marque

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From a strategic point of view, this thesis was the opportunity to study an interaction design-related problem with the eye of a product designer. After graduating in product design and switching to studying interaction design, i never took the time to theoretically focus on the relationship between the two fields. The phone, as pervasive and multiform as it is today, proved to be the perfect entry point to do so.

Delving deeper into technical topics like integrated circuits manufacturing or microphone location, i examined their connection with the way we talk and listen to our phones. This thesis helped me rebuild my understanding of the mobile phone through the spectrum of my practice as a designer in both product and interaction design.



# WOYZECK

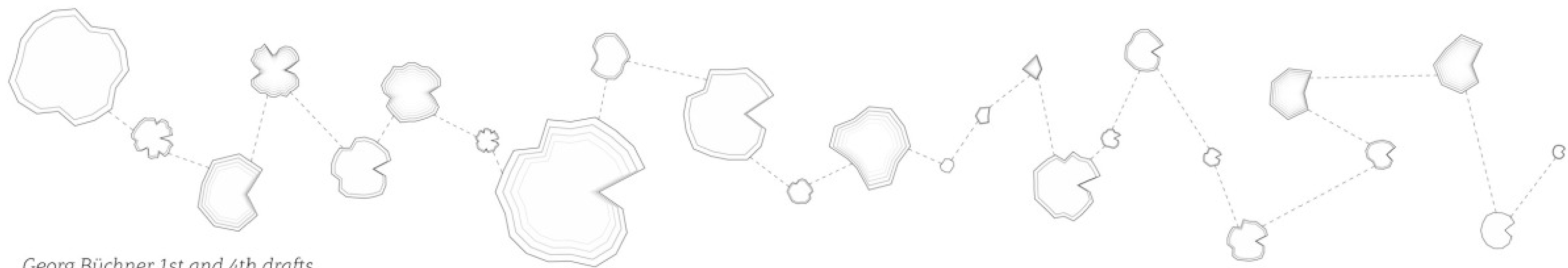
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Data-visualizing the clones of a theater play

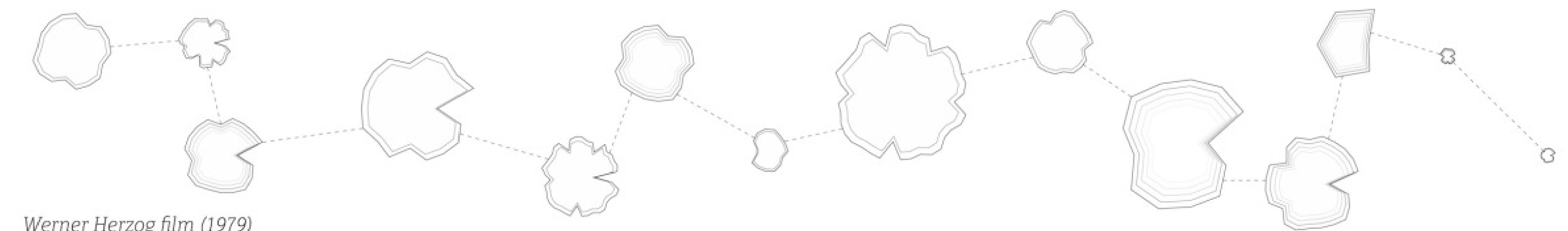


Woyzeck is among the most prominent theater plays in the German repertory. More or less dating back from 1837, it has in fact never been finished by its author, Georg Büchner, who passed that year. Since then, the fragments constituting the original text have been rewritten and reassembled again and again by every playwright and producer who has taken on staging it. Countless versions of the piece exist, some with minors adjustments only, while some others with considerable changes involving the order of the scenes, the characters playing, or even the story itself. For a one-week workshop centered around Basil.js, a javascript framework for Adobe InDesign, we decided to find a way to easily compare different interpretations of Woyzeck. We used Basil.js as a datavisualization tool to create diagrammatic representations of three versions of the play that we then released in the form of a A0 poster.

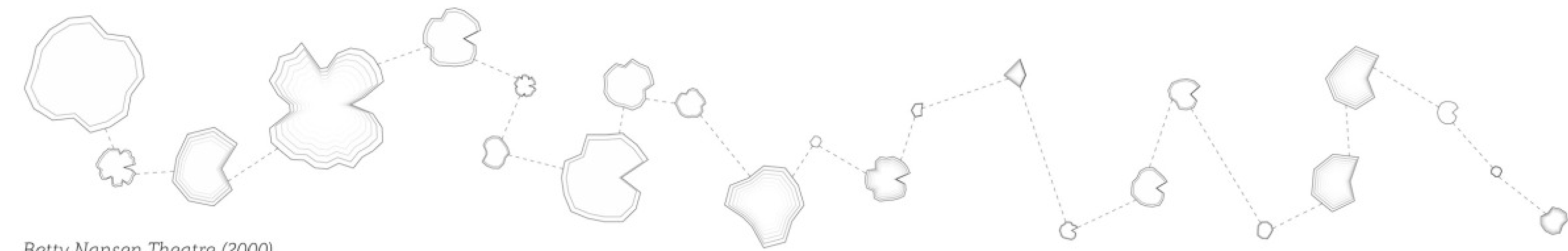
Woyzeck Georg Büchner



Georg Büchner 1st and 4th drafts

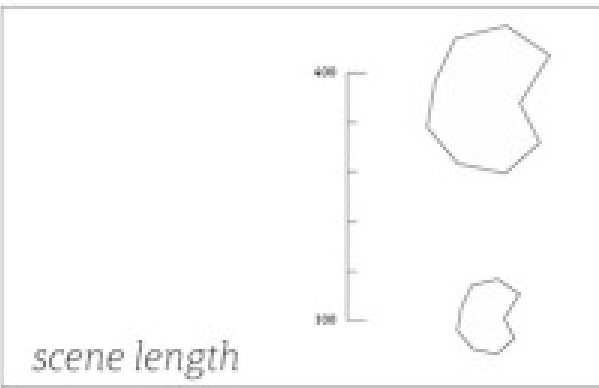
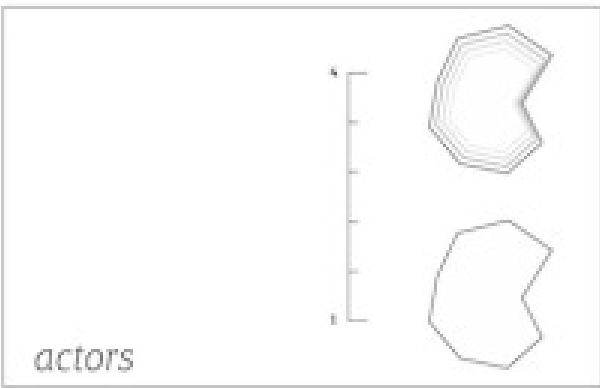
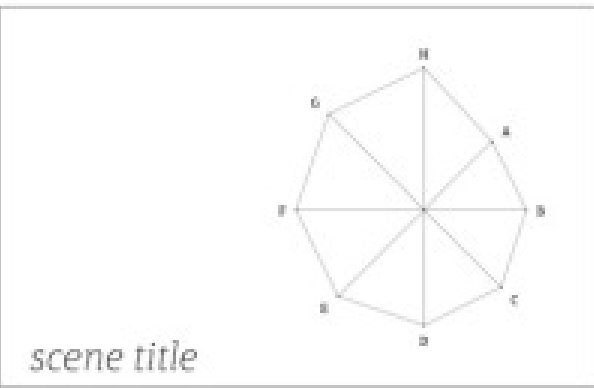


Werner Herzog film (1979)



Betty Nansen Theatre (2000)

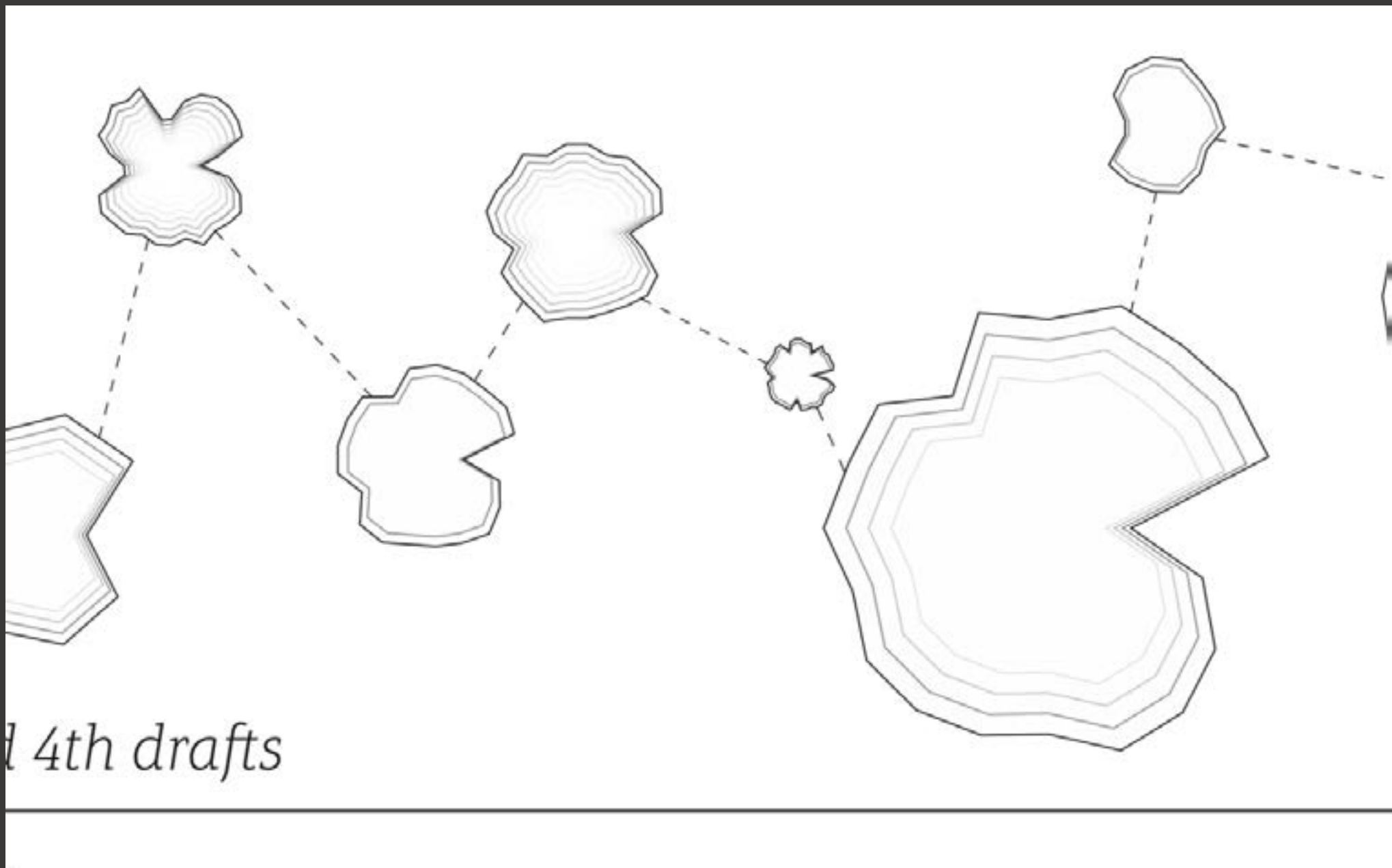
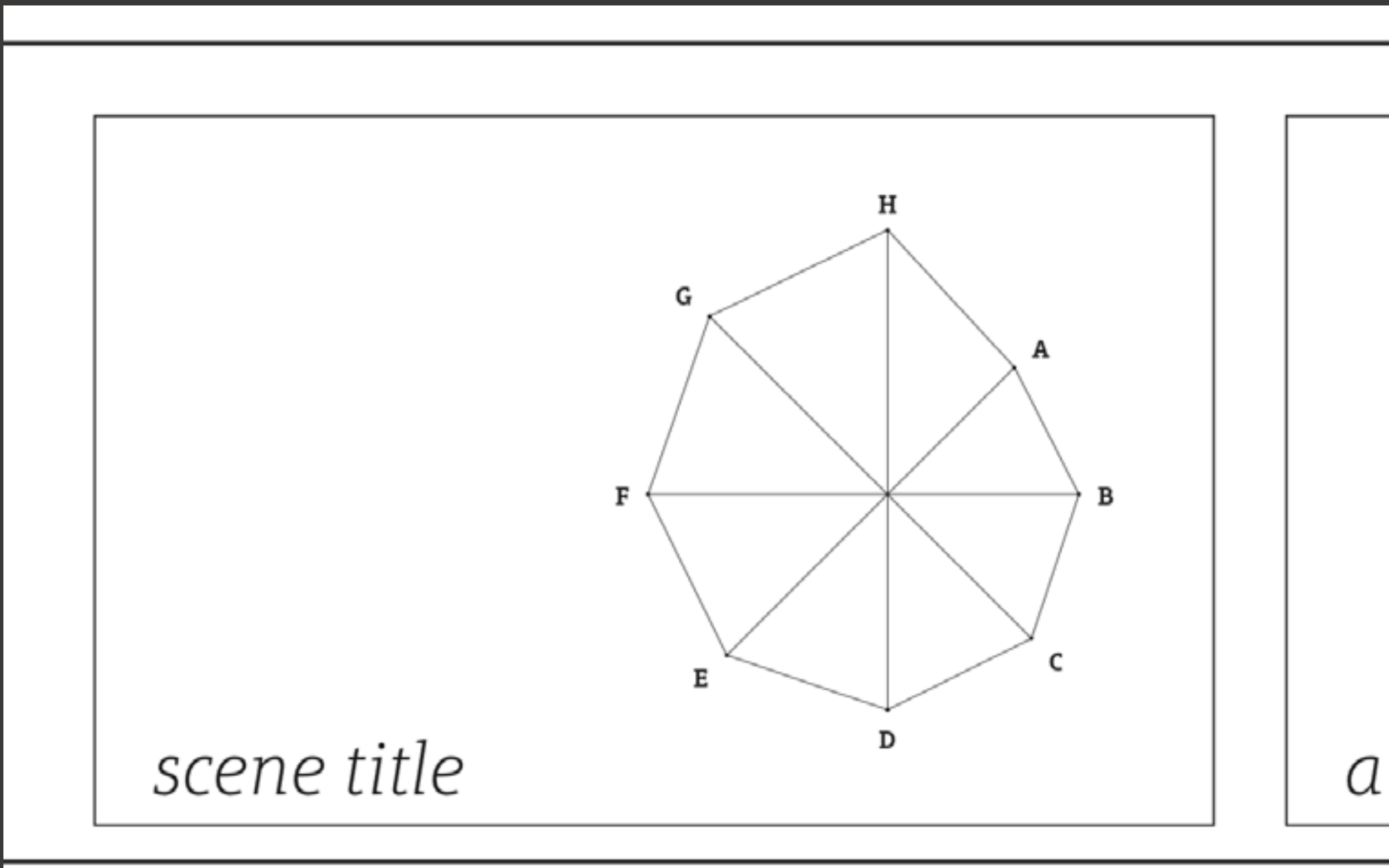
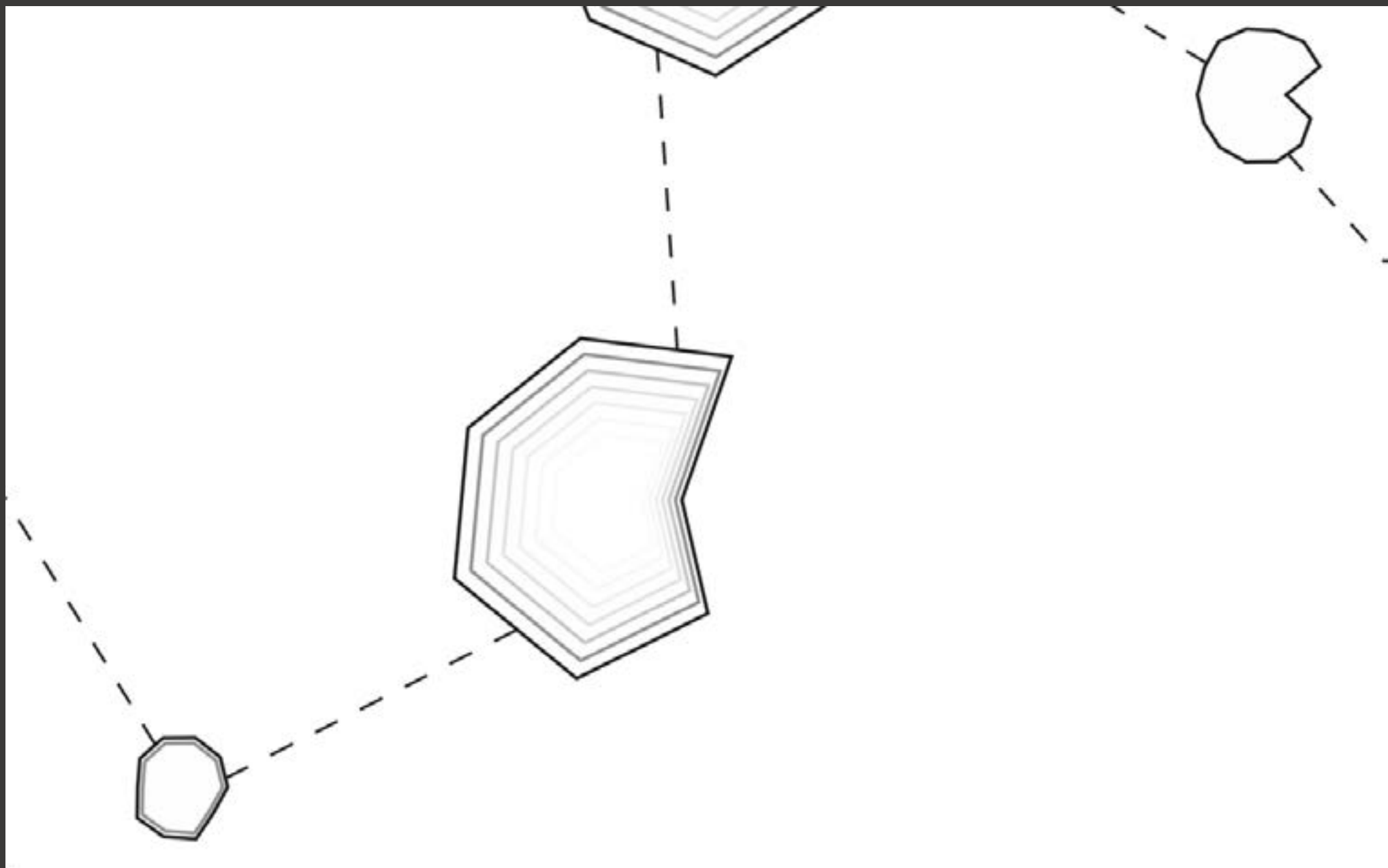
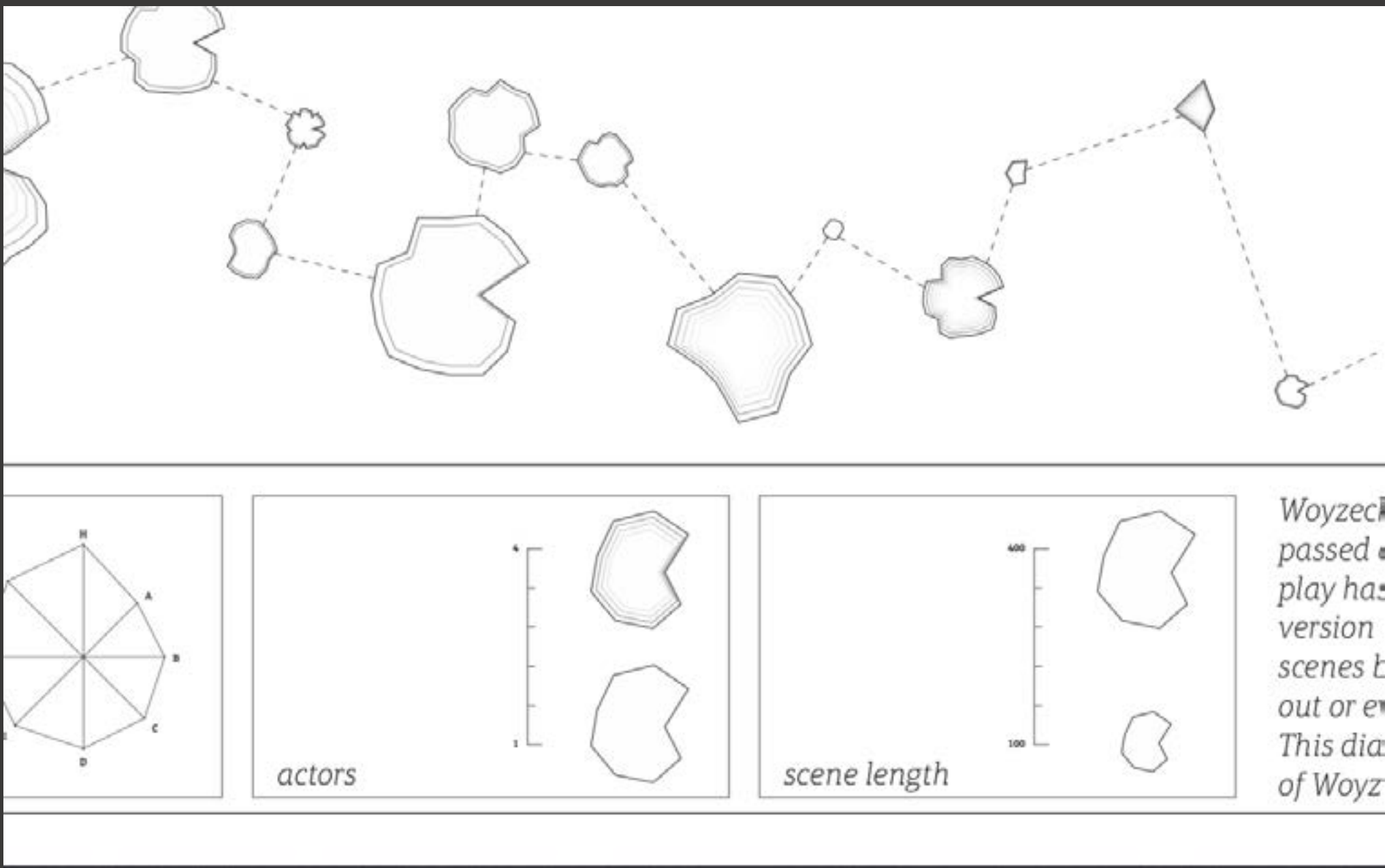
legend



Woyzeck is a play the author Georg Büchner left unfinished when he passed away in 1837. Although the writing as is was unpublishable, the play has been frequently performed since then. As there is no official version of the text, all the interpretations differ from one another, some scenes being played in different orders, while some others are simply left out or even written ex nihilo. This diagram shows a visual interpretation of 3 different performances of Woyzeck, using scenes as a point of comparison between the versions.

After the workshop, i made another poster using the same dataset captured by our team. Removing the colors we used in the original poster, the new one plays in a geometrical manner with a more topographical way of showing each interpretation of the play. Here, only the shape of the scenes can help understand the common traits between the different versions, each of them forming an archipelago vastly different from the others.



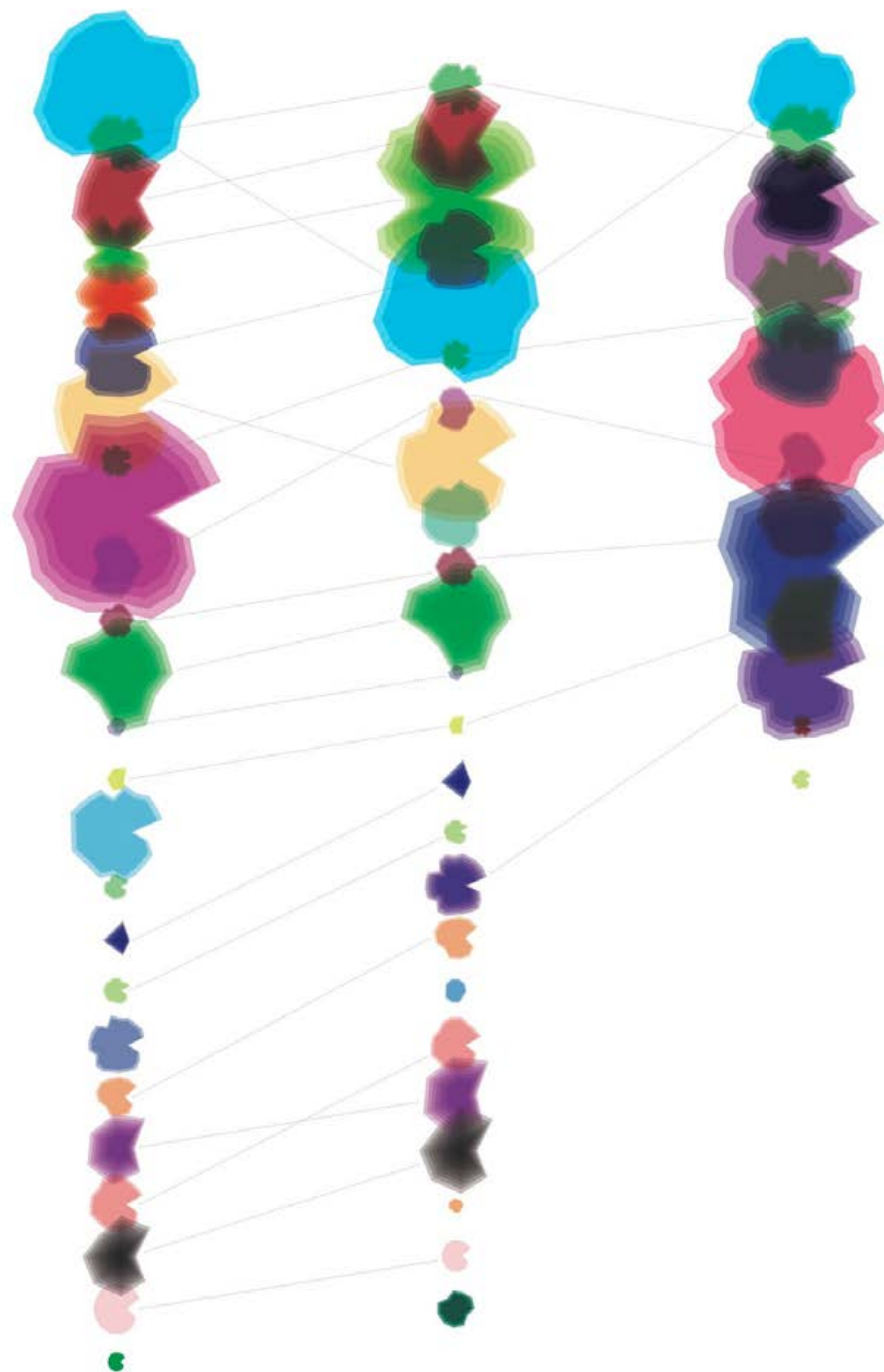


# Woyzeck

Film Klaus Kinski

Georg Buchner 1st and 4th Draft

Betty Nansen Theater



The original version of the poster that was made during the one-week workshop.



# QRCORE

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Prototyping a possible future for lottery games

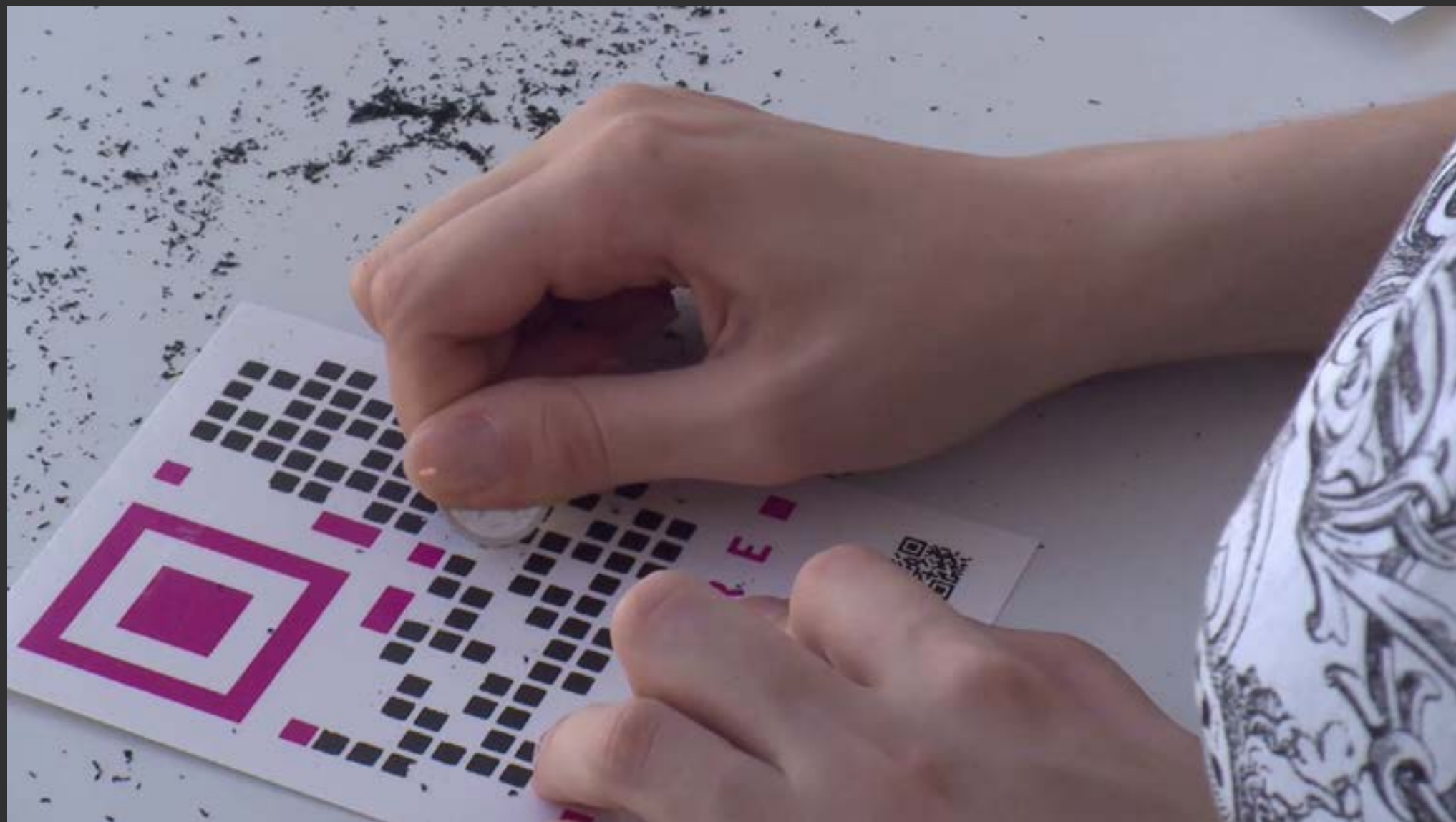
Qrcore is a design fiction project exploring near future uses for mobile cameras. We produced a video depicting a future where qr codes are not generated by machines anymore. Embedded inside scratch cards, they become part of a new perspective for lottery and gambling games, involving social networks upgrades and police tickets quotas betting. Scratch cards are played with smartphones, while the players, blinded by the encoding technique of the qr codes they don't know, try to generate them correctly and validate them with their cameras.

Through a first research phase, we looked at different languages used by cameras today and that we don't entirely grasp, like face recognition, optical character recognition, or 3d imaging for example. Focusing on qr codes, we then did a field study of people's perception, understanding, and use of them in Geneva. Our study was centered around public spaces full of billboards, leaflets, or store fronts: supports where qr codes have thrived for promotional or informational uses. We then used the results of this research to develop design concepts for future uses of them, and produce a video showcasing our conclusions.

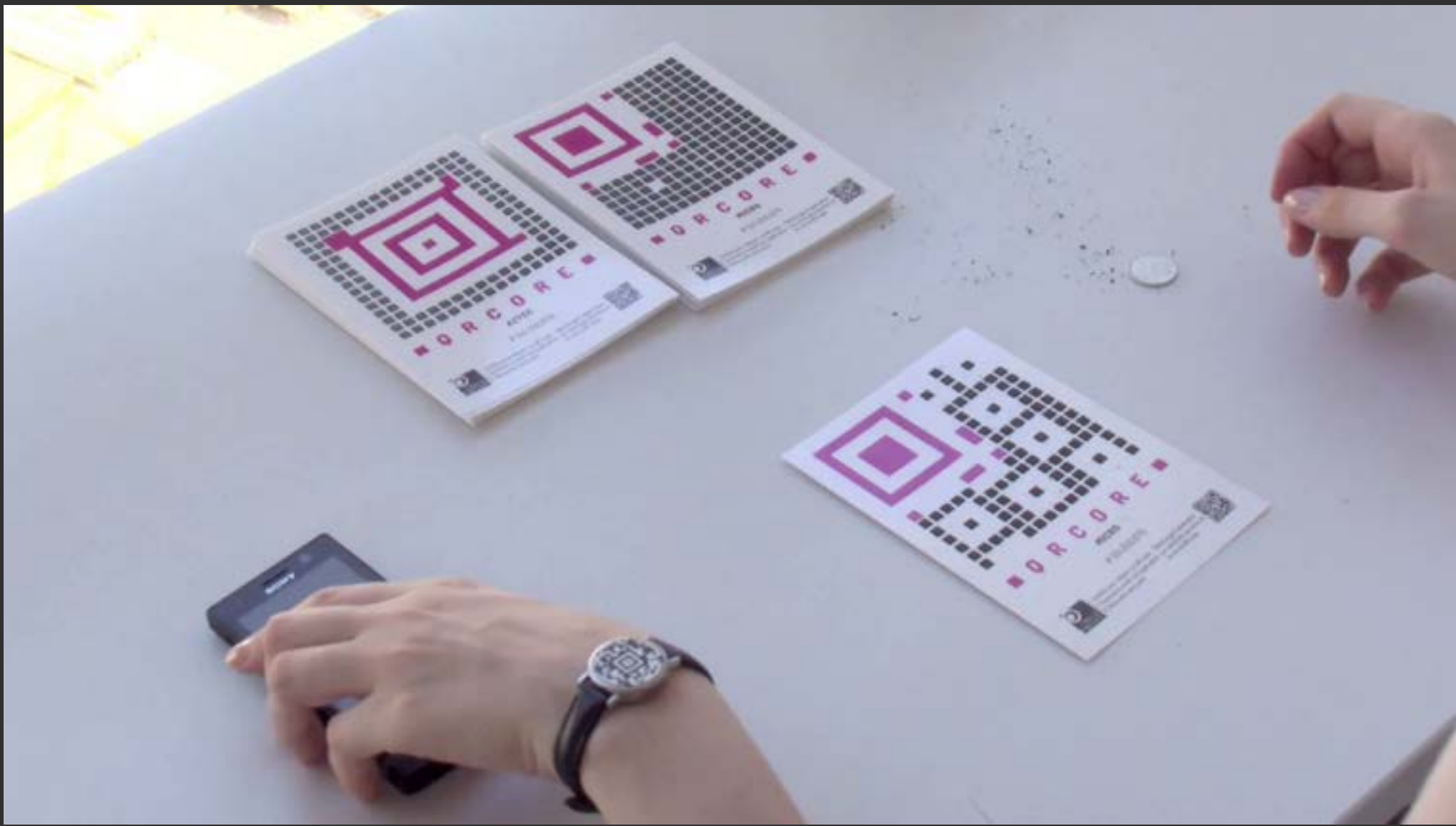




The video follows a woman buying a bunch of scratch cards from a newsstand where commonly found snacks and cigarettes meet random number generators and upgrade lottery games for social networks. She then proceeds to methodically try and find winning patterns inside the qr codes to be scratched. The video can be found at: [vimeo.com/132325021](https://vimeo.com/132325021).







The project was twofold. The first part, fully oriented towards theoretical research and field study, helped us learn and put into practice ethnographic methods and tools in our usual design research processes.

The second part was quite interesting for us as a team of two. As designers we are used to make short films to document or showcase projects. But here the film is the project in itself. It is self-contained and needn't abide by the same rules as an explanatory film. Despite timing and budget constraints, we could envision new ways to show our work and learn how to deal with location shootings, expanding teams, and so on.





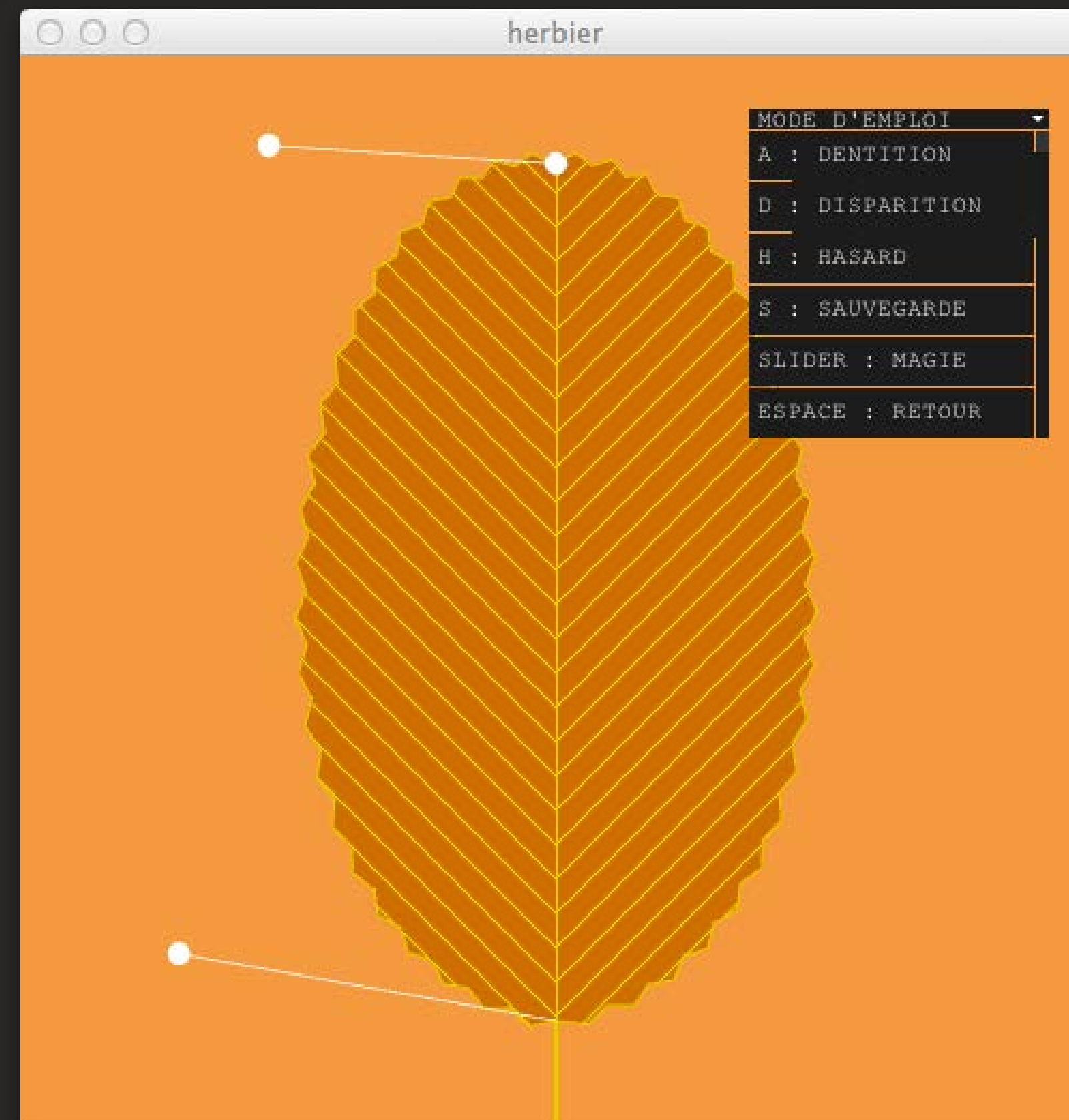
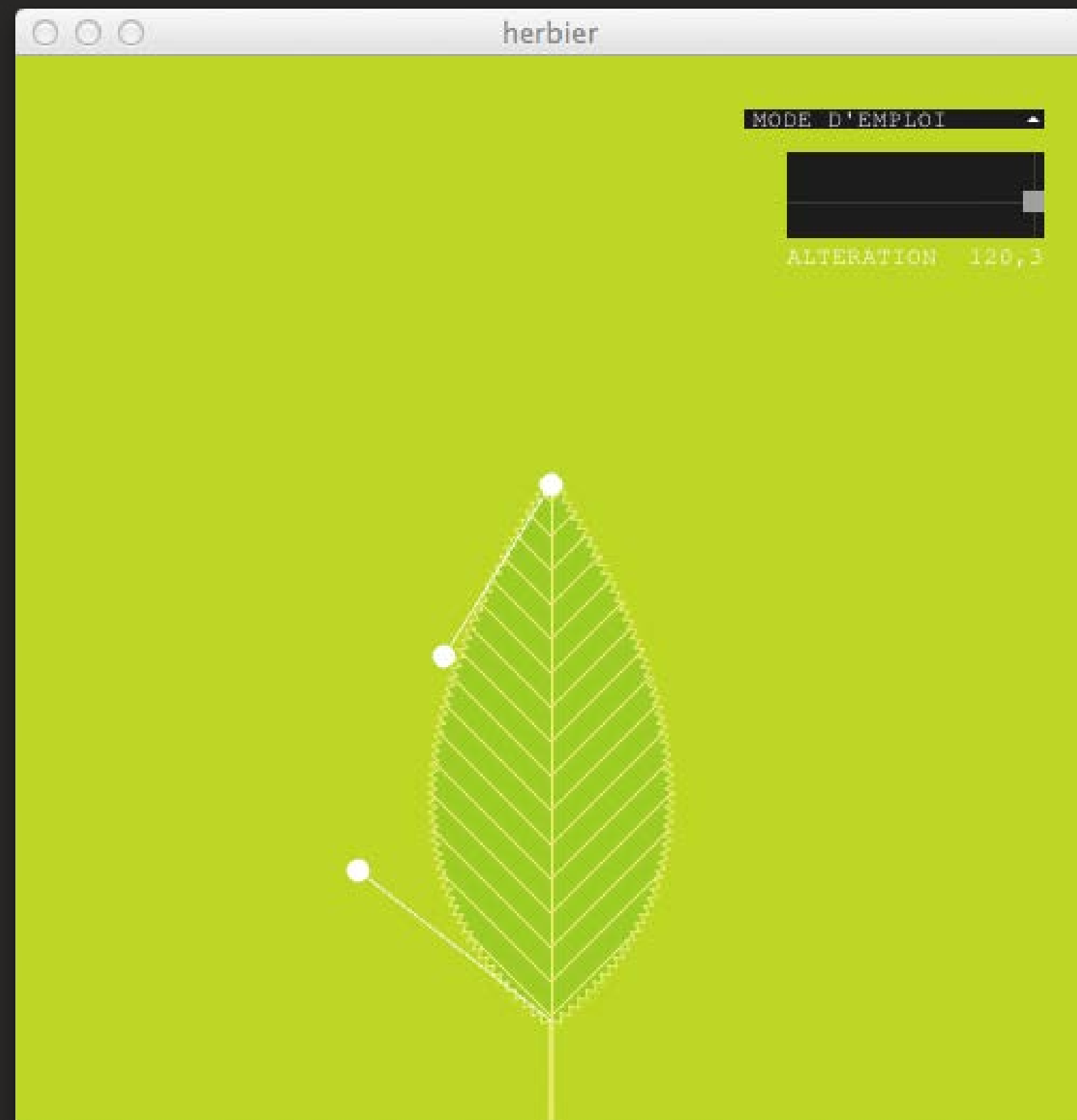
# HERBIER

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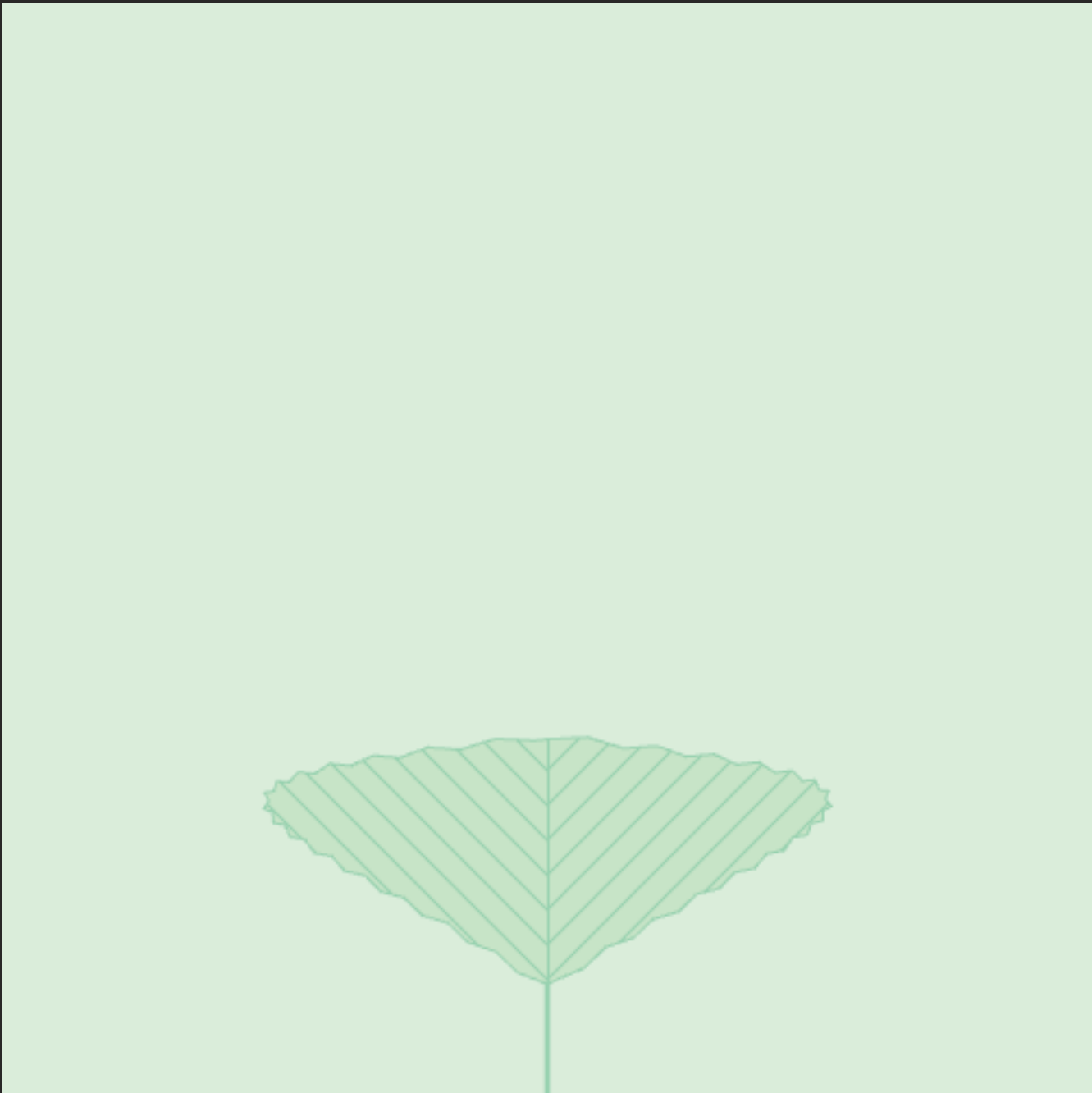
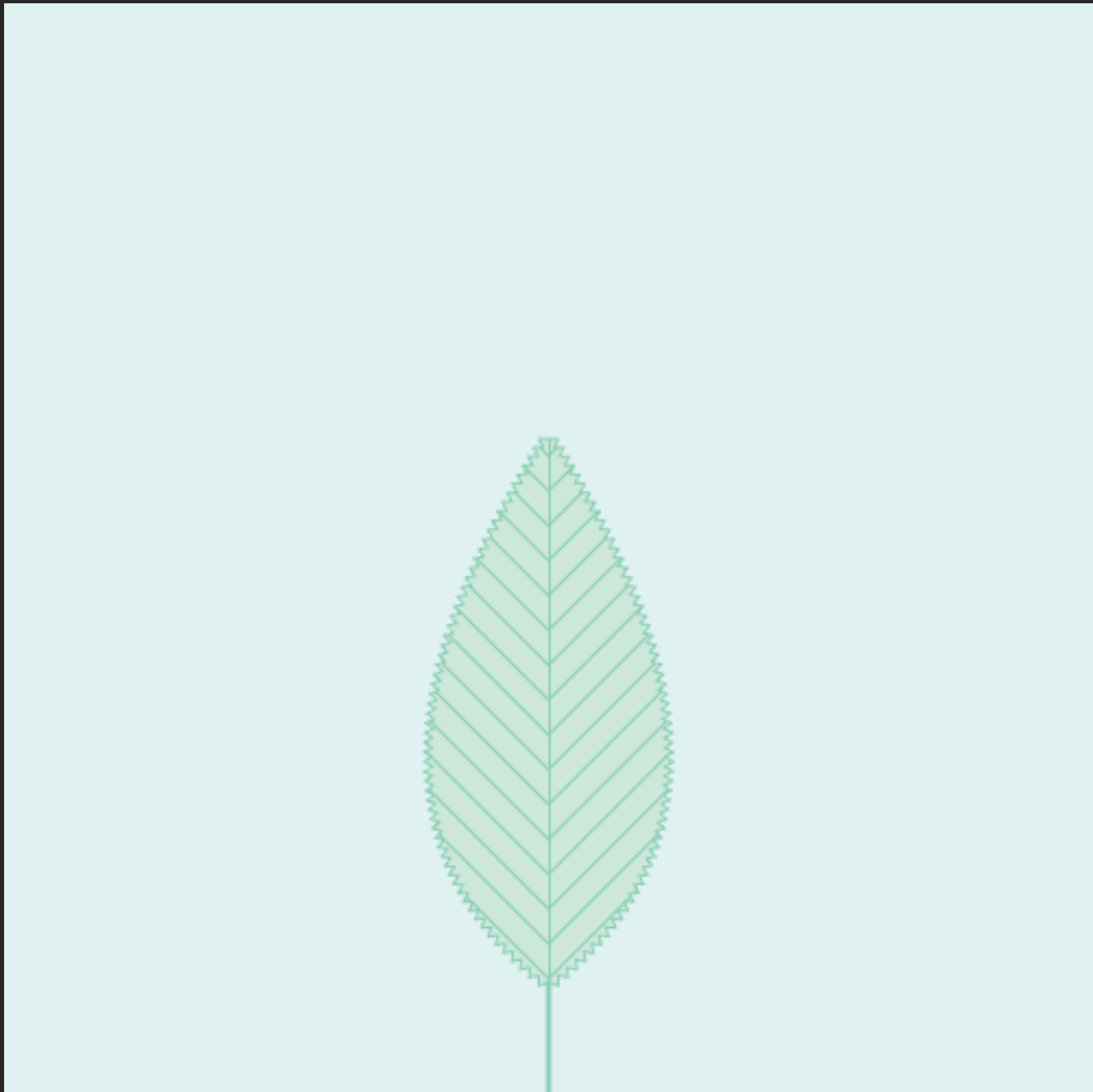
A digital herbarium for generative plant species

One of my first programming projects, Herbie is an application that helps creating and finding new leaves. Different parameters allow manual control over the leaf's shape and borders, which can also be generated randomly. Even though it is quite simple in its principle, i have remained fondly attached to it over the years.

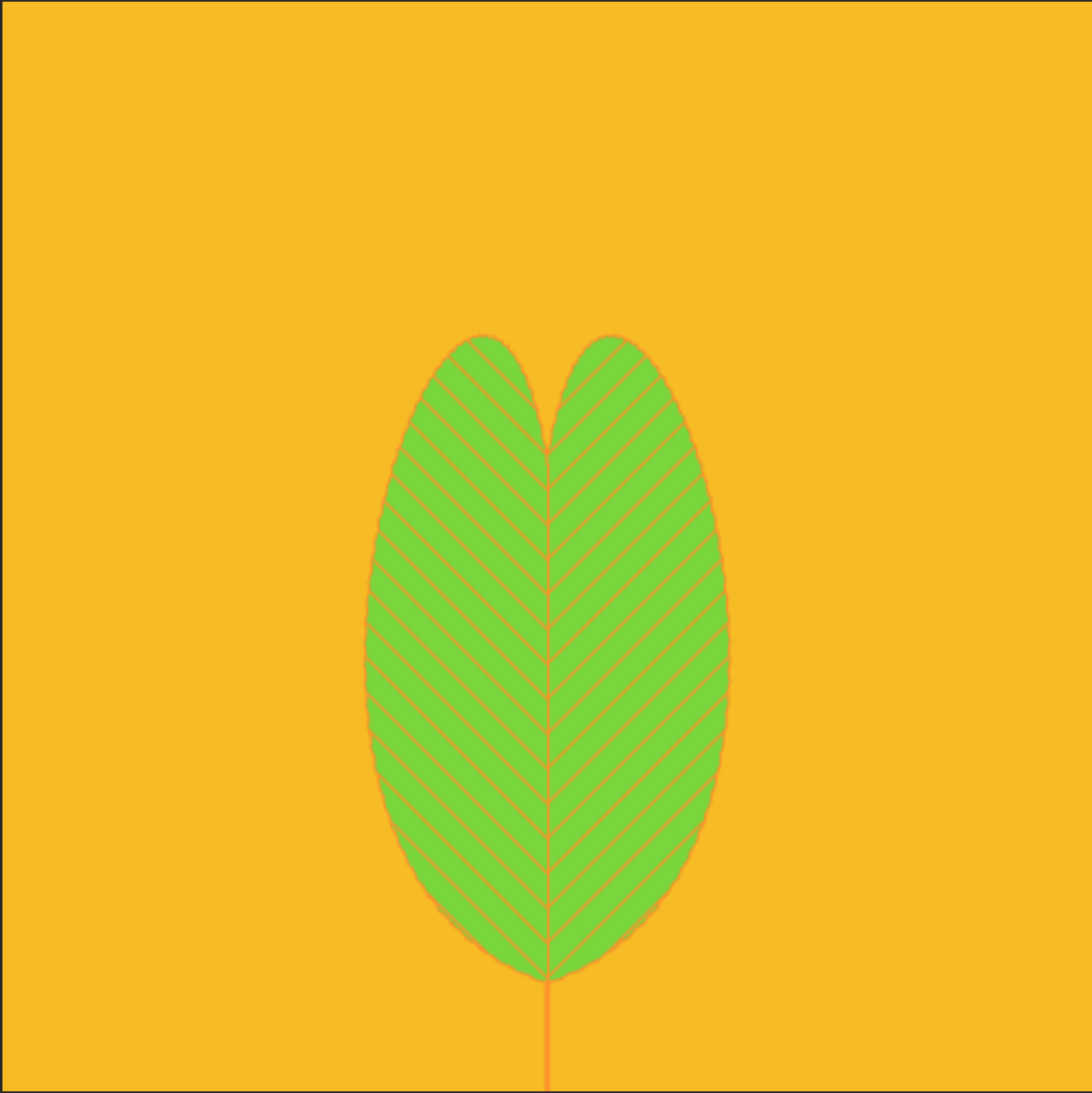
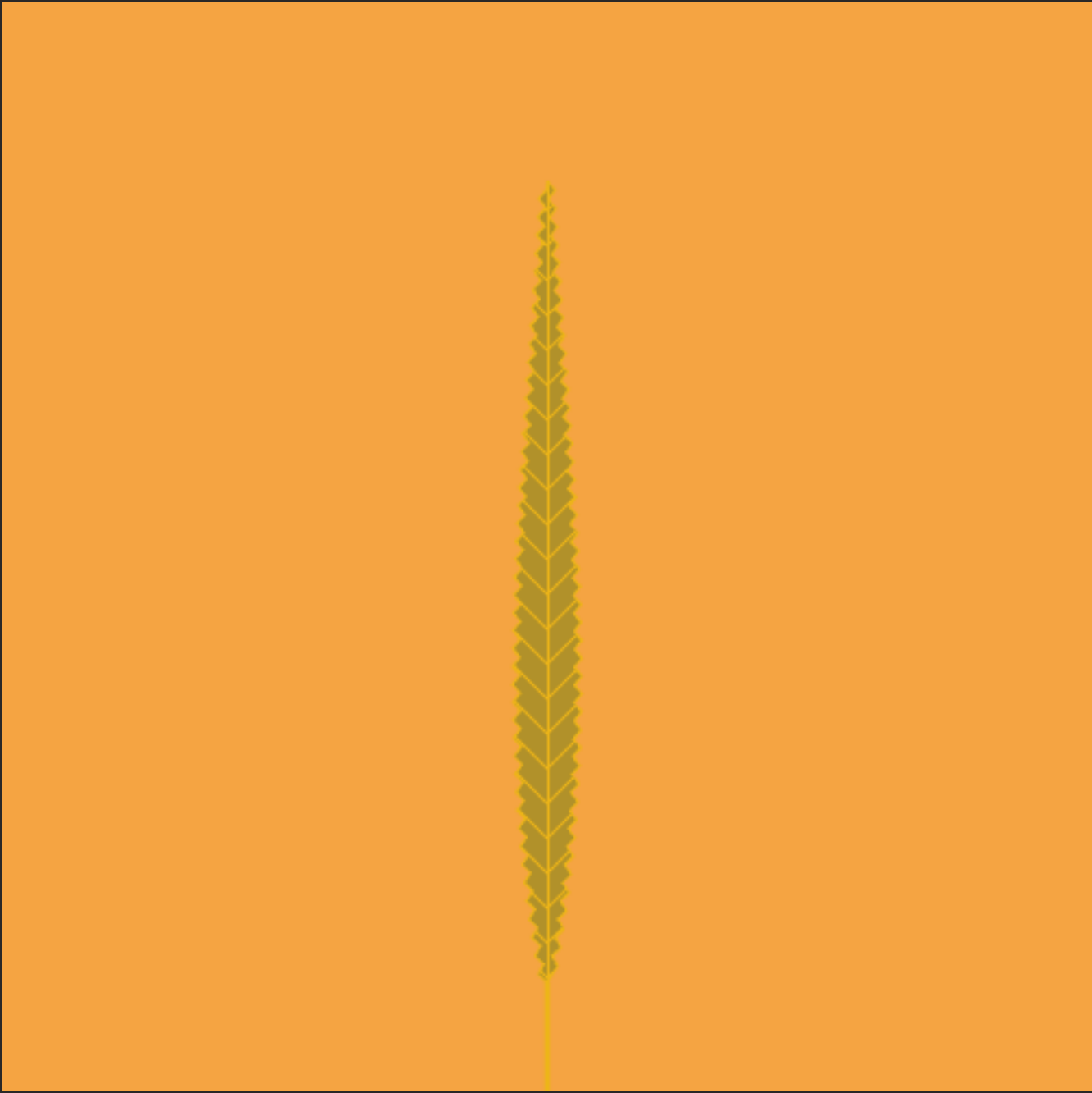
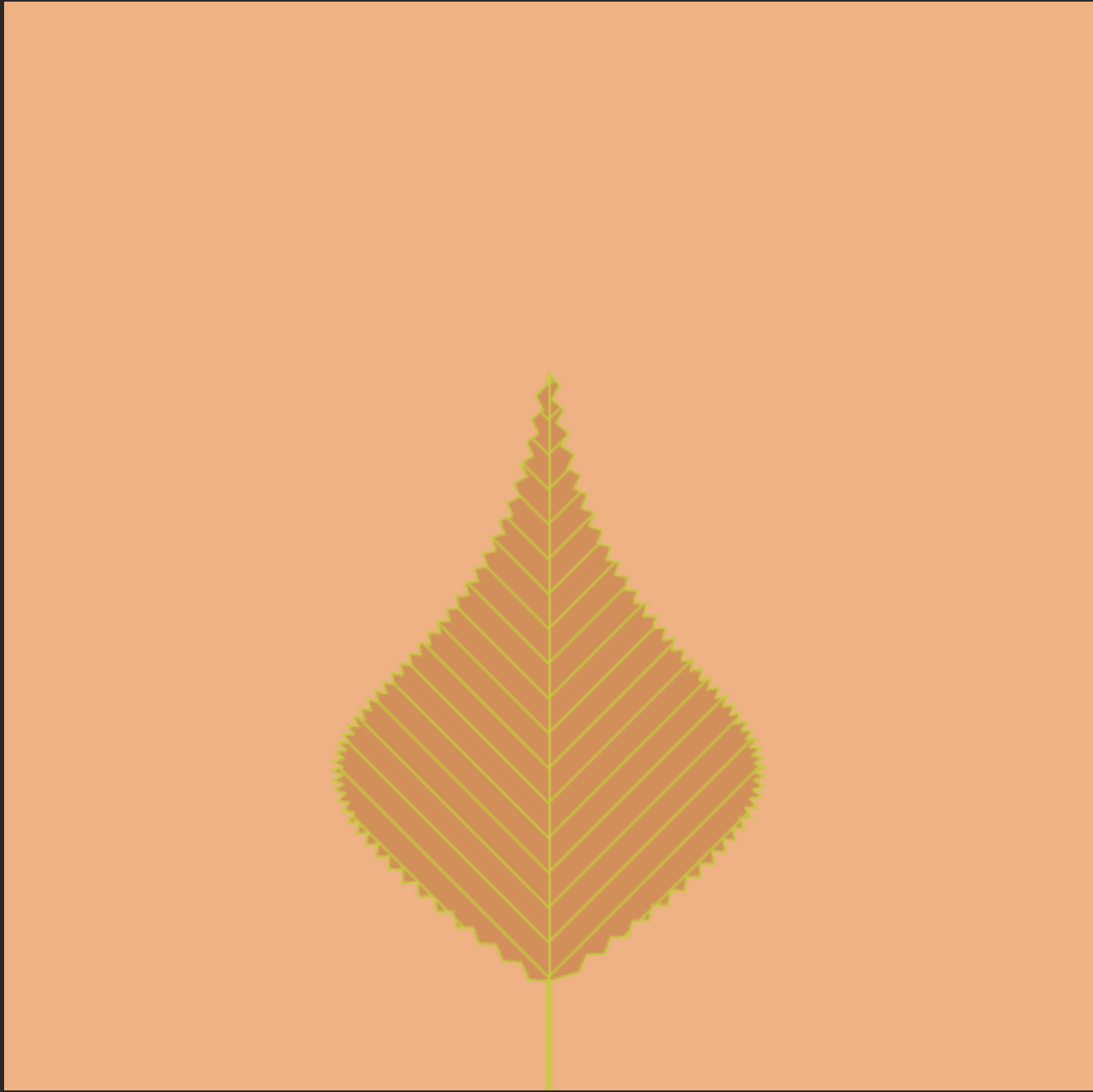




The interface enables control over the leaf with vector-drawing tools and an x-y slider. Other parameters help generate new leaves and save them.



Different specimens, gathered throughout the year.







THANKS  
FOR  
YOUR TIME



If you would like to get in touch or just to talk over a cup of tea, please feel free to send me a mail at [etiennejn@gmail.com](mailto:etiennejn@gmail.com), pm me at [@etienneforce](#), or call me at [+33 6 28 06 35 05](tel:+33628063505).

I'm based in Paris right now, but my heart will always belong to the internet.

