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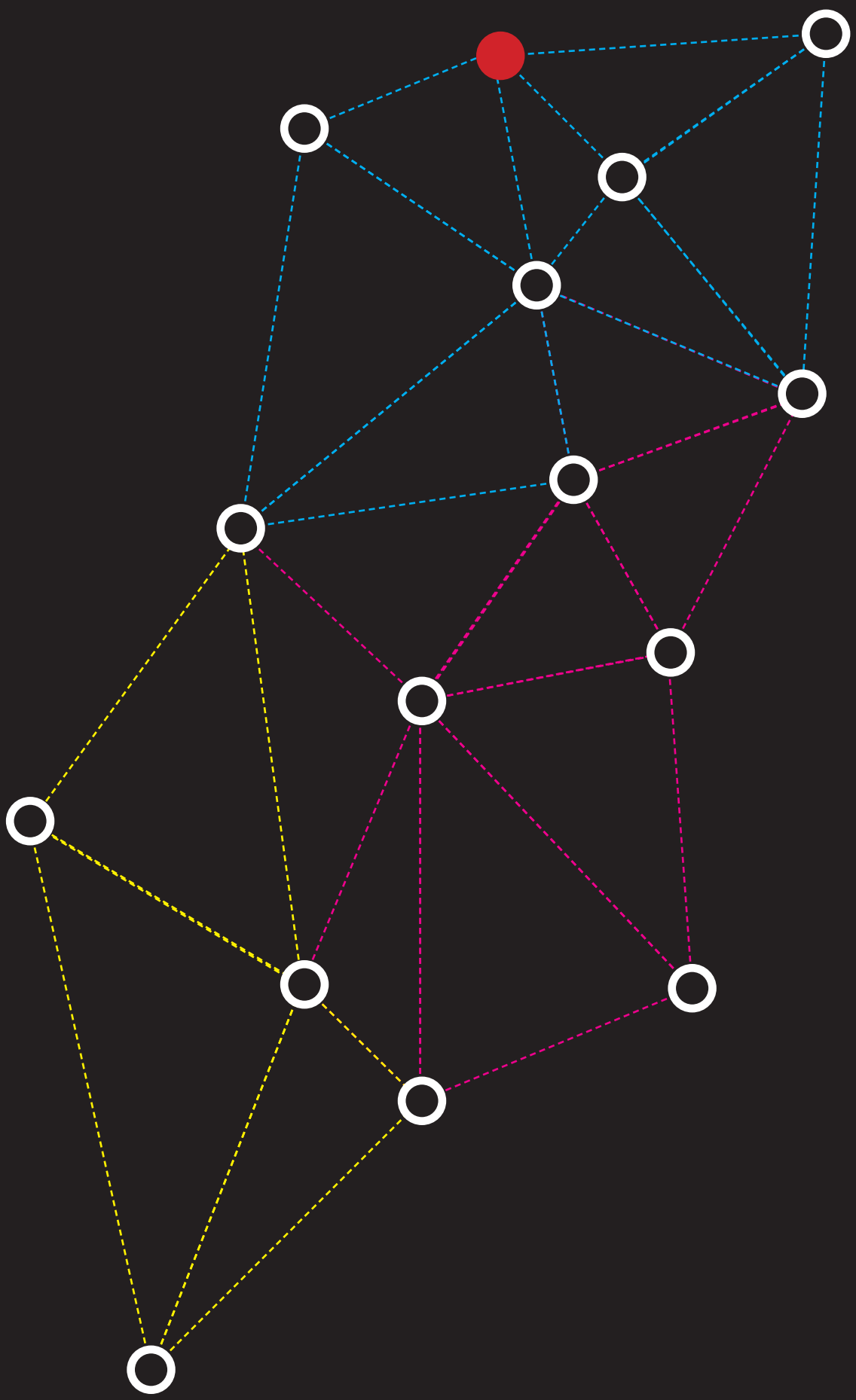


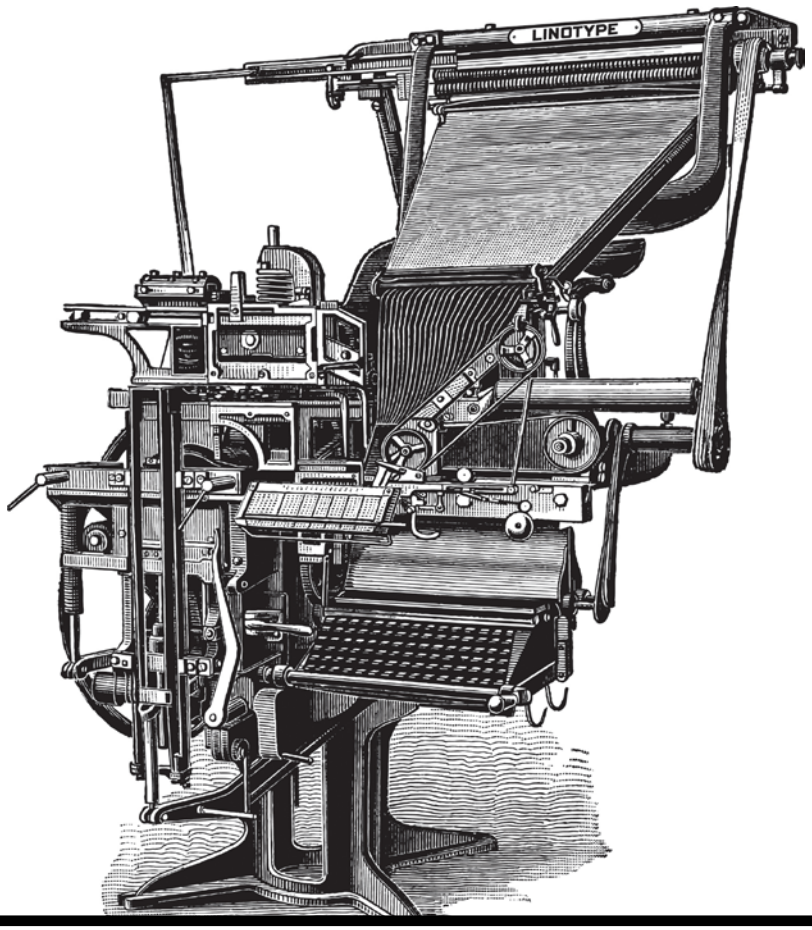
# Jurg Lehni

Works

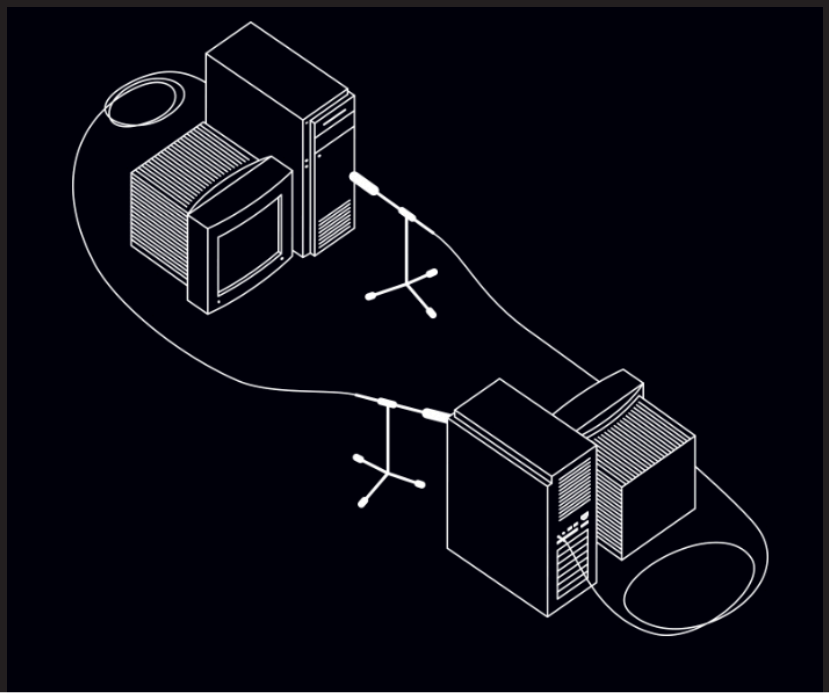

Jürg Lehni works collaboratively across disciplines, dealing with the nuances of technology, tools and the human condition. His works often take the form of platforms and scenarios for production, such as the drawing machines Hektor, Rita and Viktor, as well as software-based structures and frameworks, including Paper.js, Scriptographer and Vectorama.org.

Lehni has shown work internationally in group and solo shows at the MoMA New York, Walker Art Center,, Centre Pompidou, Institute of Contemporary Arts London, Victoria and Albert Museum, Design Museum London, Kunsthalle St. Gallen, etc.

He runs an independent practise in Switzerland since 2002, but has lived and worked in many places around the globe: As the Arts Council Visiting Professor at the UCLA Department of Design Media Arts in 2012 ~ 2013, running his own studio in London in 2008 ~ 2011, on a Swiss Design Awards residency in New York in 2007, and on a research residency at Sony SET Studio in Tokyo in 2006.




# DRAWING MACHINES



# SOFTWARE-BASED STRUCTURES

# Hektor

Jürg Lehni & Uli Franke
2002

Hektor is a portable spray paint output device for computers. It was created in collaboration with engineer Uli Franke for Jürg Lehni' s diploma project at ECAL (École cantonale d' art de Lausanne) in 2002.

Hektor's light and fragile mechanism consists only of two motors, toothed belts and a spray can holder. By the means of geometric triangulation and gravity, a custom software moves the spray can along predefined drawing paths and remotely activates the can's nozzle.

Due to mechanism' s fragile nature, Hektor appears to be in constant negotiation with gravity, causing it to sometimes tremble and wobble.

The machine was created to explore the ambiguous and poetic qualities that stem from the contrast between these low-tech aspects and the precision of the vector graphics technology that is at work behind the scenes. Following the urge to make a statement on today's clean computer aesthetics, Hektor was conveived as a post-industrial tool that is allowed to be unprecise and and convey these abstract mathematical geometries in a different, sometimes almost human way — a tool with an inherently particular and distinctive aesthetic.

Through the years, Hektor' s nature and aesthetic was explored through many projects in different contexts, often in collaboration with other artists and designers. These works gave Hektor its character and became the machine's body of work.

# Viktor

Viktor is a scalable, robotic chalk-drawing machine designed for large surfaces (up to 20 x 20 meters), driven by the same geometric principles that helped create Hektor.

As with Hektor, the interest was in the creation of a post-industrial device that is not striving to be perfect, but instead has a distinct character in its gestures when executing its line drawing onto walls.

Unlike Hektor, Viktor consists of four motors and belts instead of only two, allowing it to work on larger surfaces, to better position the tool and to apply just enough presure to leave a mark on the surface.

Chalk was chosen as an ephemeral contrast to Hektor's very permanent spray paint, giving the device its own character and voice. Due to these choices, the system lends itself for use as a platform for lectures and performances.

As an example, throughout the duration of the exhibition A Recent History of Writing and Drawing at the Institute of Contemporary Arts in London, guests were invited to perform with Viktor on seven Thursday evenings. Curated by Emily King, these events expanded on the themes of the incidental poetry and spare capacity of technology, placing the exhibits in the gallery in a context that goes beyond its four walls.

# Things to Say

Things to Say documents a series of collected drawings produced in collaboration with invited guests to perform with Viktor every Thursday evening throughout the duration of the exhibition A Recent History Of Writing And Drawing at the ICA in London in 2008.

The book was produced by replacing the blade in the vinyl cutter used in Empty Words with a felt-tip pen. A selection of the vector drawings originally executed by Viktor was then drawn, true to the scale of the chalk.

The resulting drawings were scanned and printed with white ink on black paper, to reference the original chalk drawings.

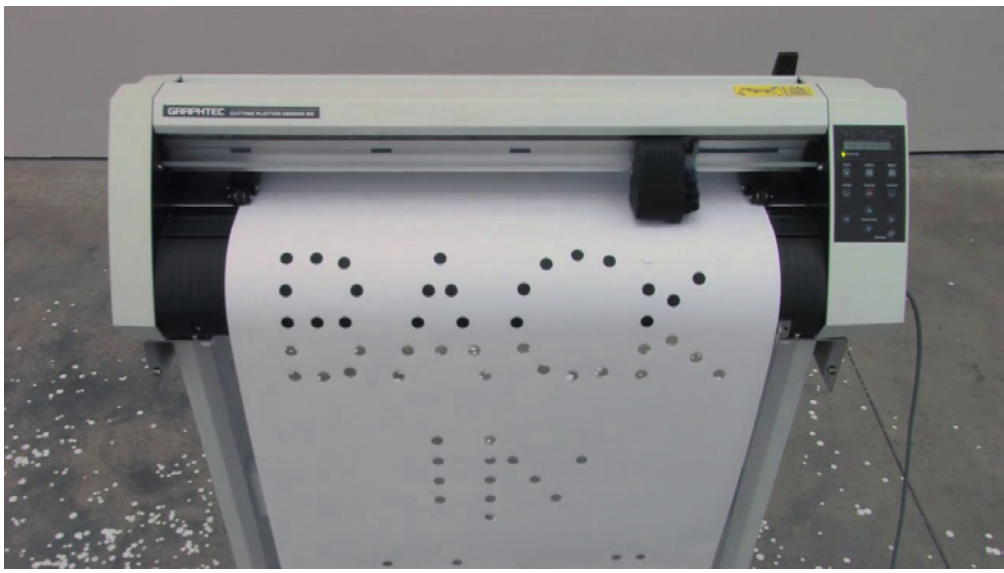

# Empty Words

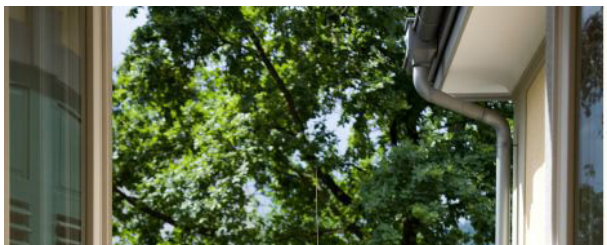
Empty Words is a system for typesetting and producing text-based posters consisting of only holes.

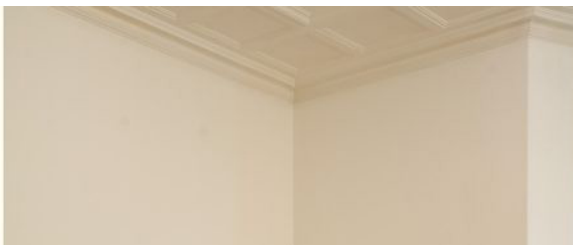
Using a gently modified standard vinyl cutter and a custom made software interface, each hole is cut in sequence at a controlled speed. Similar to a Linotype machine, the resulting setup becomes a tool for the production of textual works.

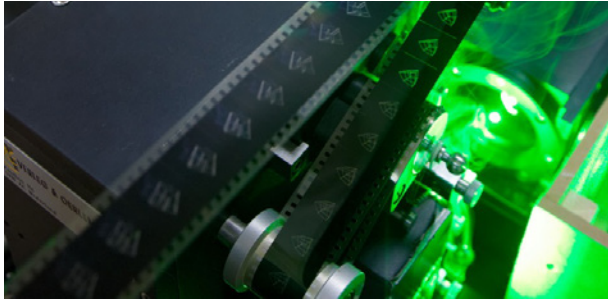
Running on a modified Apple TV connected to a rotated LCD display, the software allows visitors to type their own posters, while enforcing many constraints.

Unlike other computer systems today, the setup does not offer any layout options and defines a maximum of five lines of text, at an automatically determined type-size, limiting the options for the poster to be produced, while painfully rendering visible the always present limitations of any technology-based system for creative production.







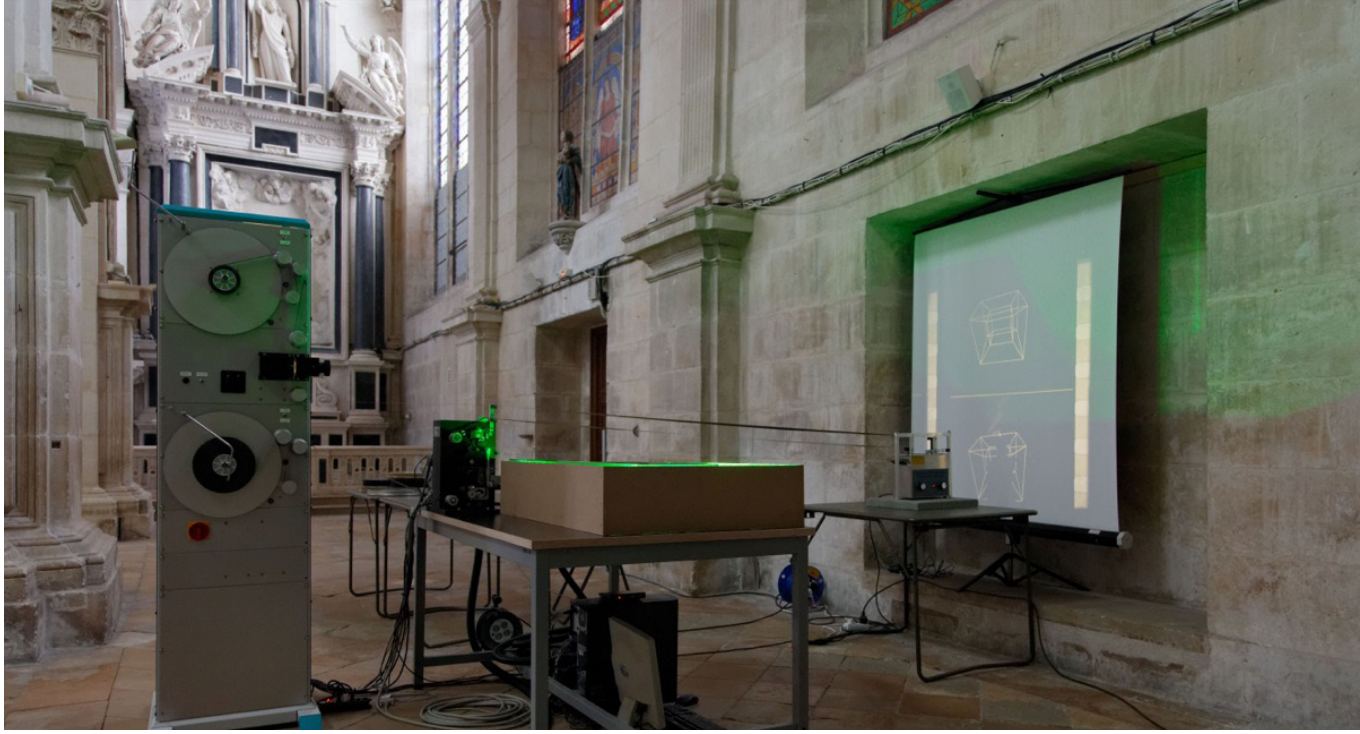
Things in the Air, Raphael Hefti, Jürg Lehni & Alex RichMuseum im Bellpark Kriens, Switzerland, 2009

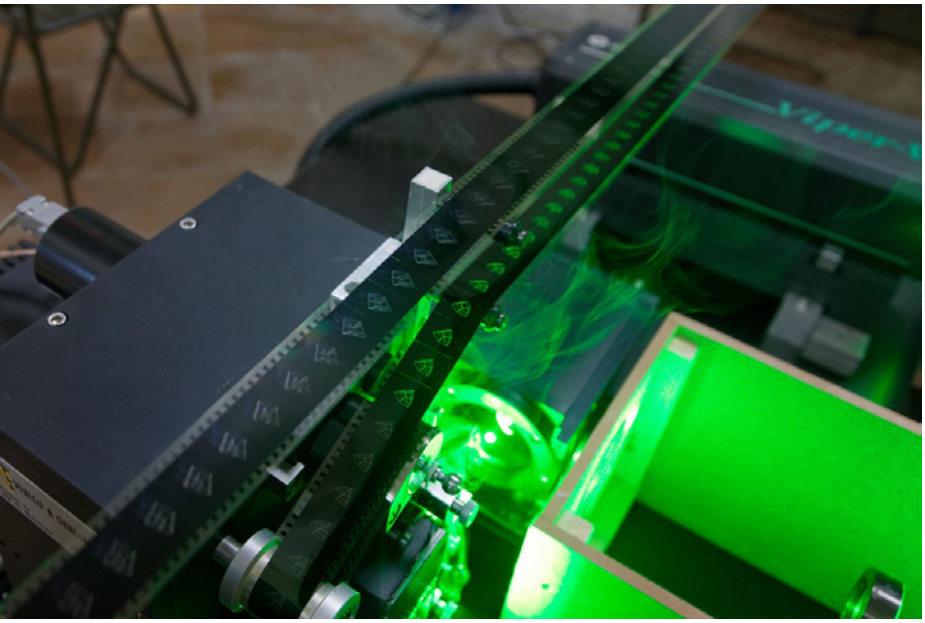
# Hertz

Hertz is an installation that creates a scenario of public engagement, by inviting the visitor to ride a bicycle that produces enough energy to run a low-power TV station, broadcasting a signal out into the local vicinity of the museum.

The migration from analogue to digital broadcasting at the end of 2008 freed most of the frequency bands previously used for airing TV programs, marking a significant transformation of media and the end of analogue broadcasting.

The signal transmitted by Hertz consists of images generated by Flood Fill, an algorithm that renders animations of black and white pixels that appear almost as the alignment of the snow-like fuzz received when the channel is dormant.





# Moving Picture Show

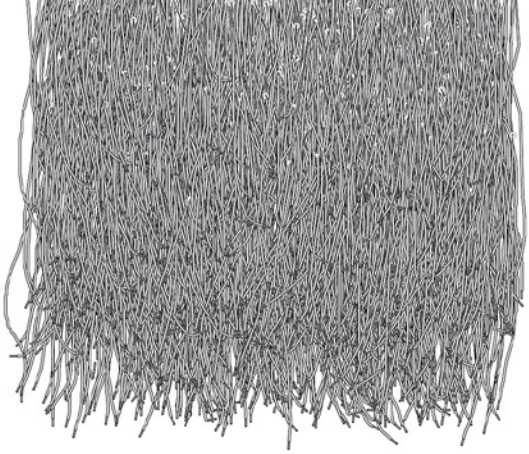
In Moving Picture Show a scenario of production for animated drawings and texts is created by reappropriating a process normally used by the movie industry to etch subtitles into 35mm film.

A high-power laser is moved rapidly over the surface of the film, burning away the emulsion layer and leaving thin lines where only the clear base of the celluloid remains. When projected, these lines have a specific optical quality, appearing to float above the image.

The current migration from analogue to digital film projection in cinemas across the globe is quickly turning the medium of 35mm motion picture film into a niche product for enthusiasts and archival usage, rendering obsolete and for the first time making available most of the technical equipment used to produce, process and screen such films.

Changing the working range of the laser in addition to modifying, extending and partly replacing the software and hardware interfaces on such a machine leads to new possibilities: animations and full-frame drawings can be realised on top of film. The film can either consist of existing material, film created purely for this purpose, or black, non-developed film.

This potential was explored at the 23rd International Poster and Graphic Design Festival in Chaumont, where the Jesuits Chapel was transformed into a workshop and a scenario of conception, production and projection for a series of short films.



# Scriptographer

Scriptographer's strength lies in the encouragement of a symbiotic relationship between an existing tool for computer assisted manual creation and the benefits of formulating bespoke processes in code.

Using Scriptographer, the user is no longer limited to the same standardised tools provided by closed software. The scripting environment allows the creation of mouse-controlled drawing tools, effects that modify existing graphics, as well as scripts that create new ones.

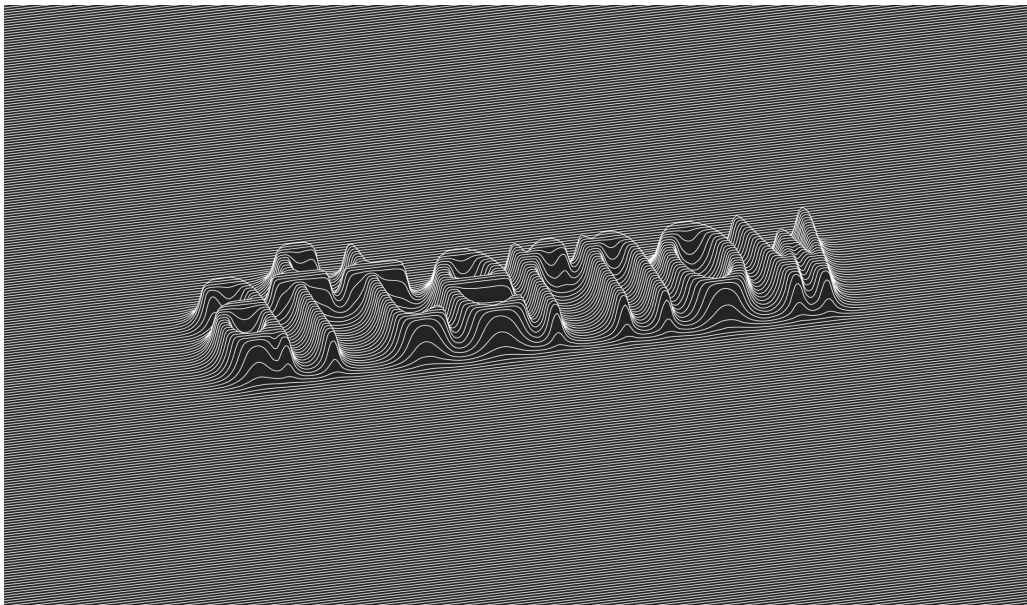
Since Illustrator is already part of the daily workflow of many designers, it removes one of the thresholds when teaching programming in art schools: Analogies can be drawn between manual ways of working and the code that tells Illustrator what to produce, and the results of the code's execution can be manually inspected afterwards. Through Illustrator's arrow tools, as well as the many palettes available to view information about the geometries and attributes of the created items, the results become almost tangible.

This method for teaching has been tested and improved over the course of 3 years in a research project and a series of workshops conducted by Jürg Lehni and Jonathan Puckey at ECAL in Lausanne. The results of the project have helped to greatly improve and simplify the platform as well as write tutorials and example scripts, to better support the teaching.

Scriptographer allows us to reclaim a more personal relationship we used to have with our tools, and reintroduce interesting points of friction and elements of craft into our highly optimised software, with the aim to learn to create tools ourselves. After all, the computer was invented as a tool to create tools.

Throughout the years, an active community has grown around the plugin, exchanging ideas, scripts and offering help on the Scriptographer.org website. The plugin was initially developed for Illustrator 9, and kept up-to-date and improved in functionality until Illustrator CS5. Unfortunately, the launch of CS6 brought too many changes in the underlying APIs and has therefore set an end to the project.

But the effort lives on in Paper.js, created by Jürg Lehni and Jonathan Puckey as an open-source vector graphics programming framework that runs on top of open-web standards such as Canvas 2D and SVG, with the aim to broaden the reach of Scriptographer's API and free it from the closed and expensive confines of Illustrator.



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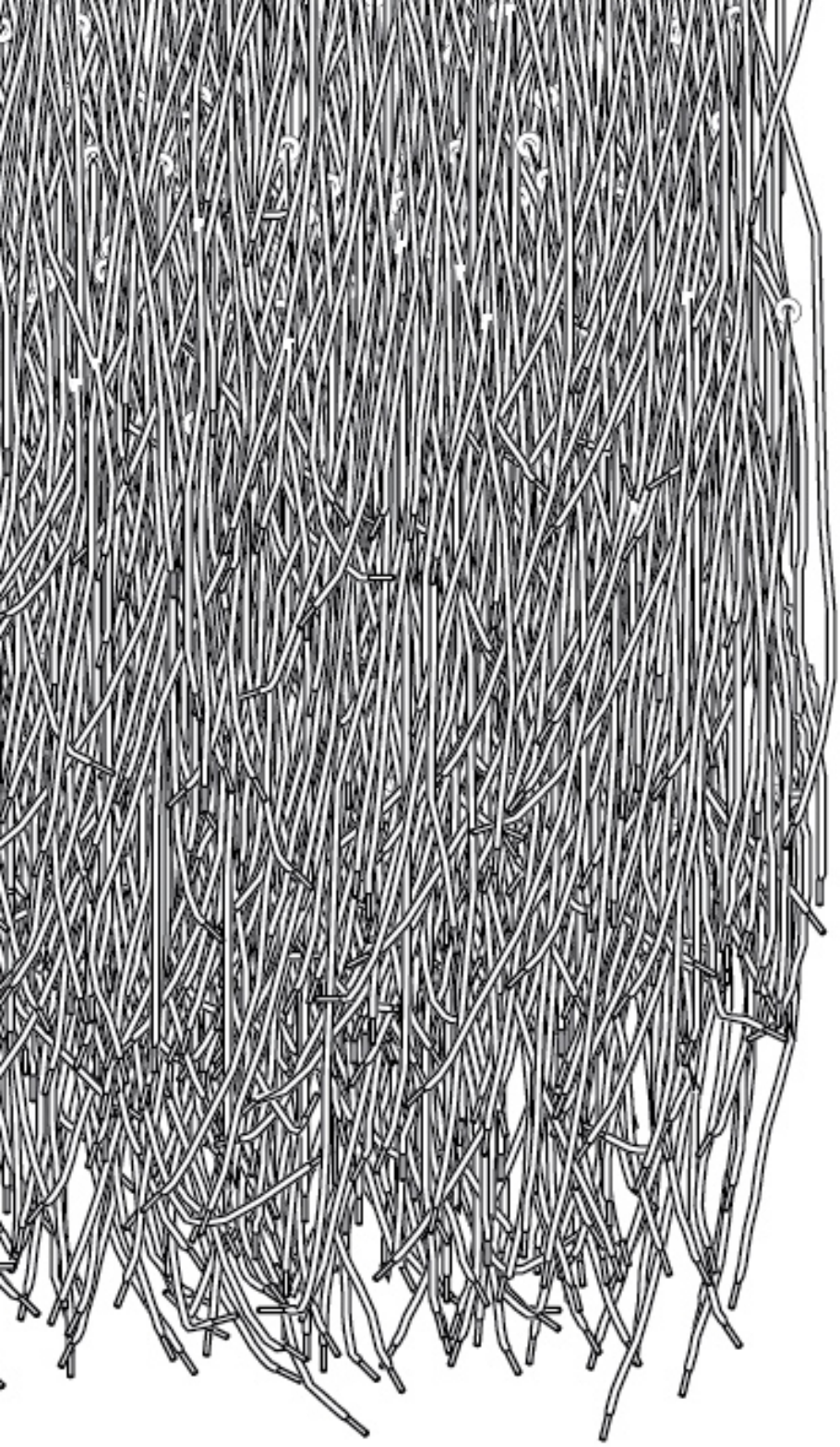

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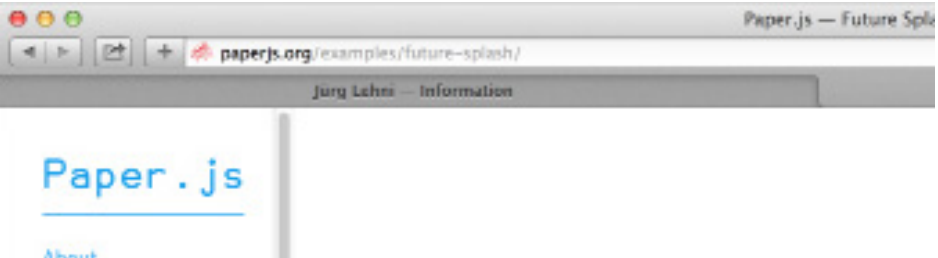
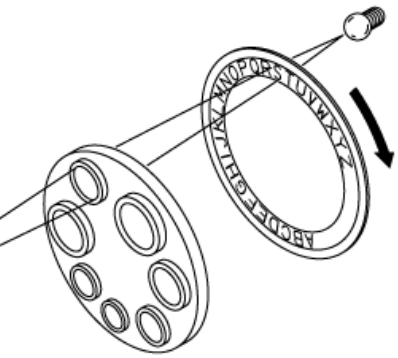
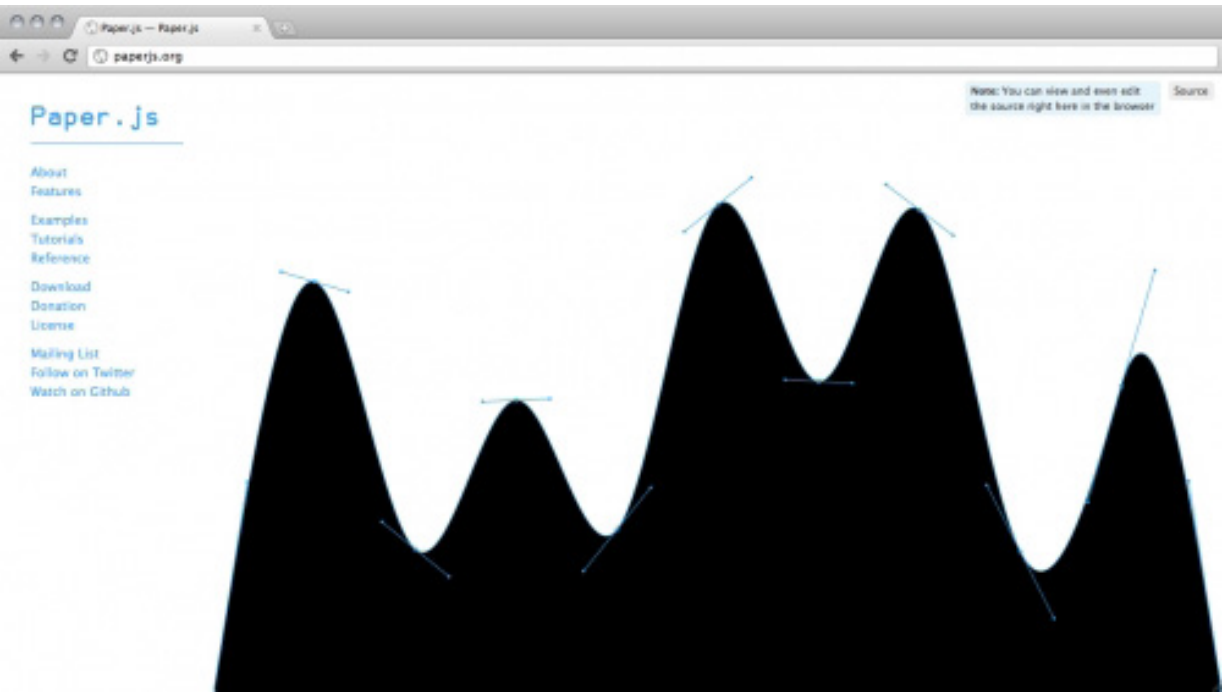
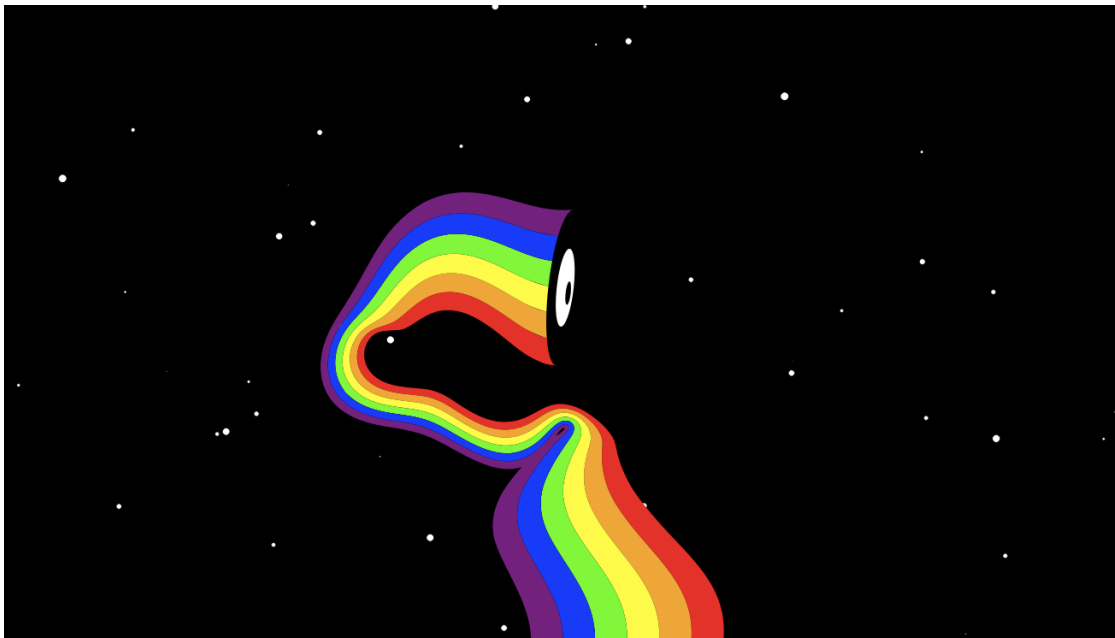


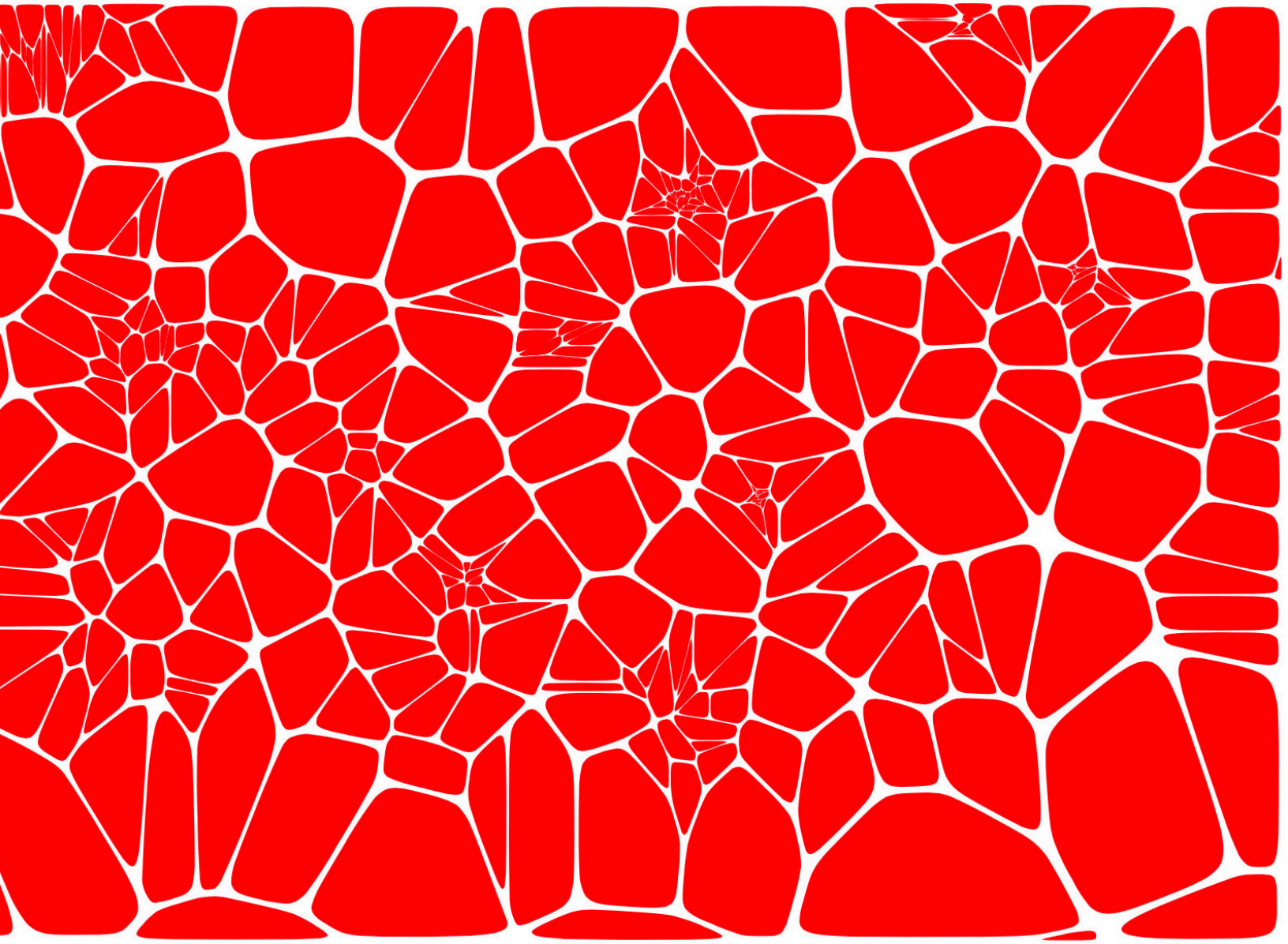


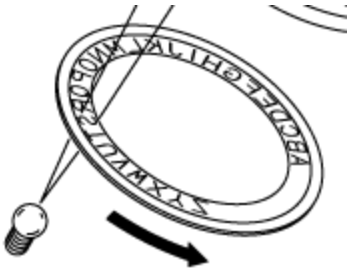
# Paper Js.

Paper.js is an open source vector graphics scripting framework that runs on top of the HTML5 Canvas. It offers a clean Scene Graph / Document Object Model and a lot of powerful functionality to create and work with vector graphics and bezier curves, all neatly wrapped up in a well designed, consistent and clean programming interface.







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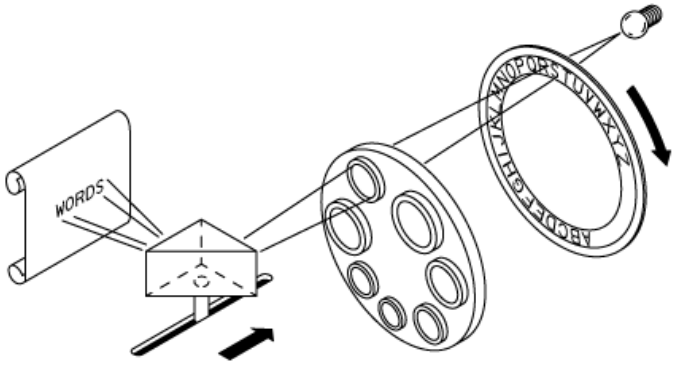
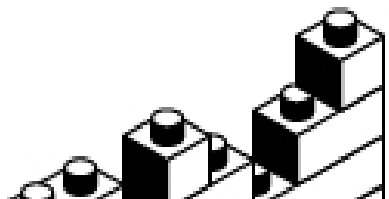
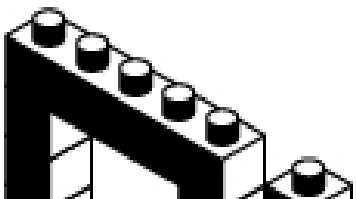
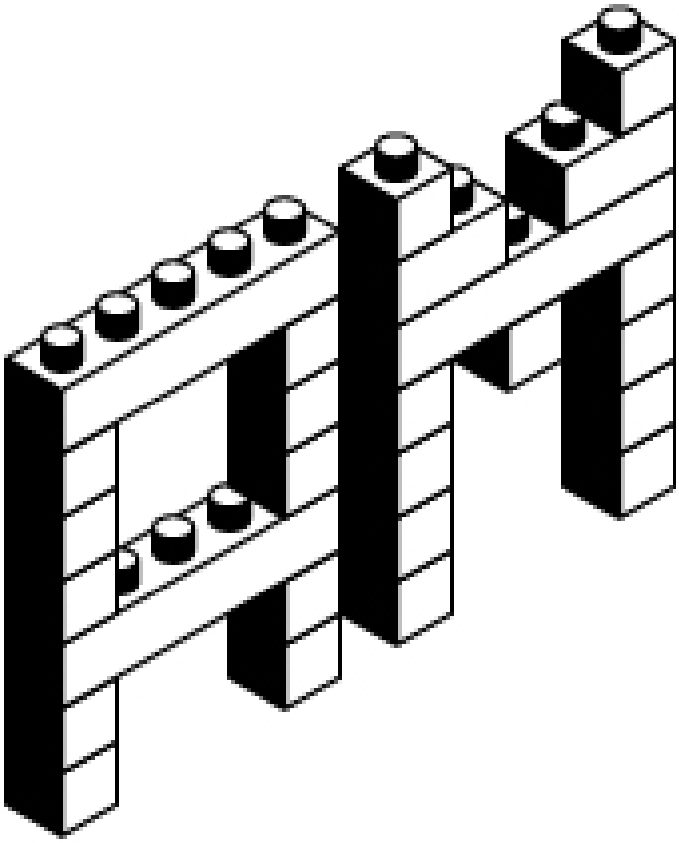


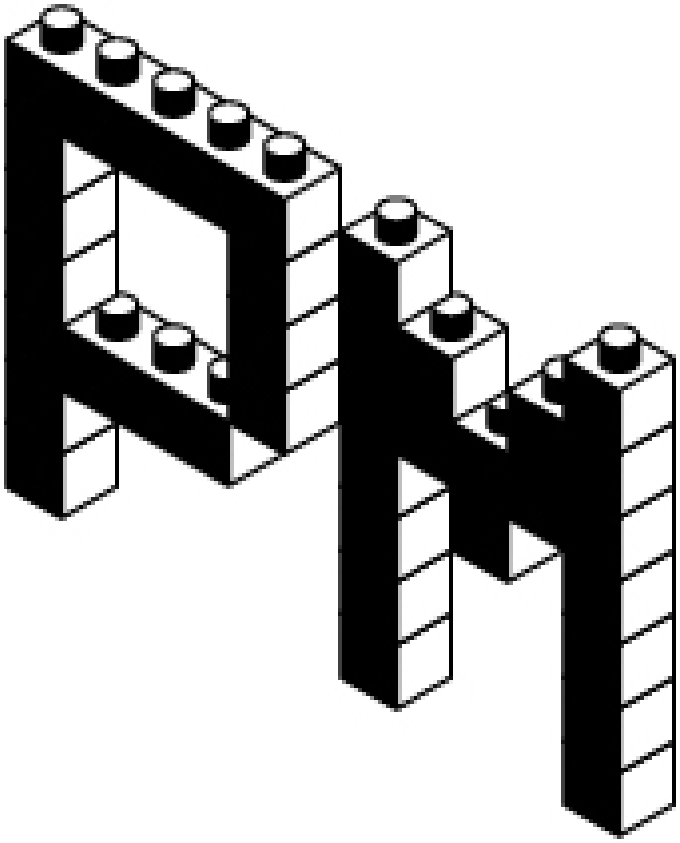

# Typeface as Program

In 2009 the École Cantonal d'Art de Lausanne (ÉCAL) published Typeface As Program, a book which originated in the efforts of its graphic design programme to teach type design as a separate discipline. The book summarises a series of workshops, including workshops on the technical processes of type creation, and includes a comprehensive essay by Jürg Lehni on the nature of digital type design and font software. The print run was limited, and as is generally the case with books published (and subsidised) for specific occasions, Typeface As Program has long been sold out and will not be reprinted.

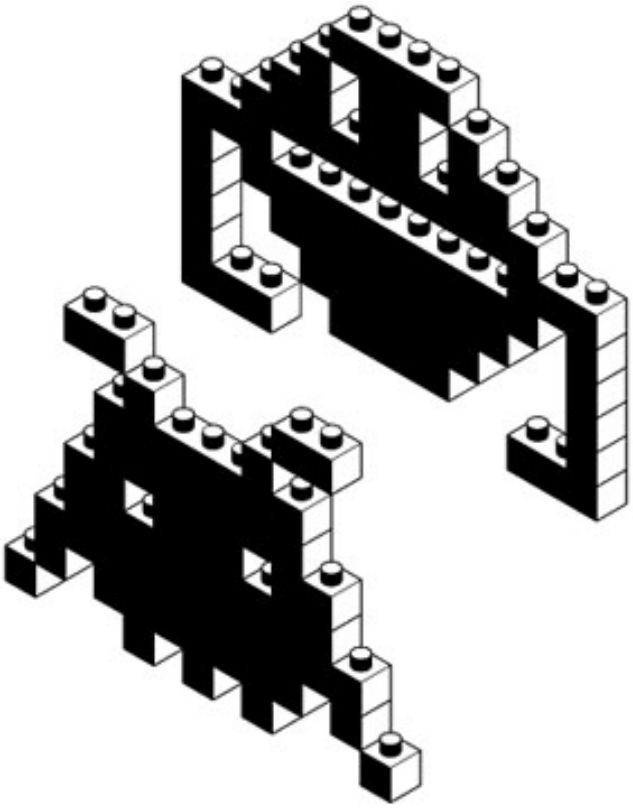








# Lego Font Creator



This little application was a collaboration between the designers Urs Lehni and Rafael Koch with the developer Jürg Lehni, as a progression from the design of their Lineto Lego fonts. The irresistible logic of the Lego brick prompted them to start thinking about how the fonts could be shown in an interactive type specimen, offering ways to play with it online.

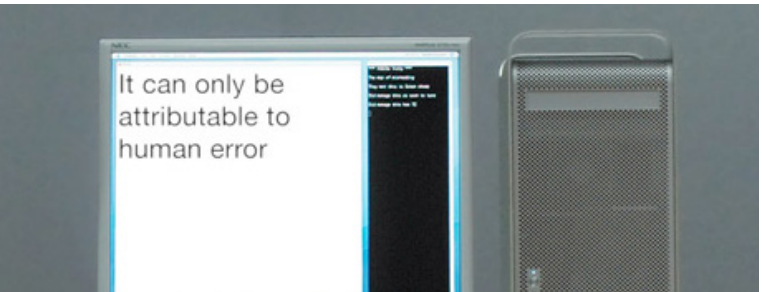
They later developed it into a stand-alone Shockwave application, offering a set of preselected design elements and both Lineto Lego font alphabets to play with. Results can be exported as vector data and opened in vector-oriented graphic design programs like Adobe Illustrator or Macromedia Freehand.

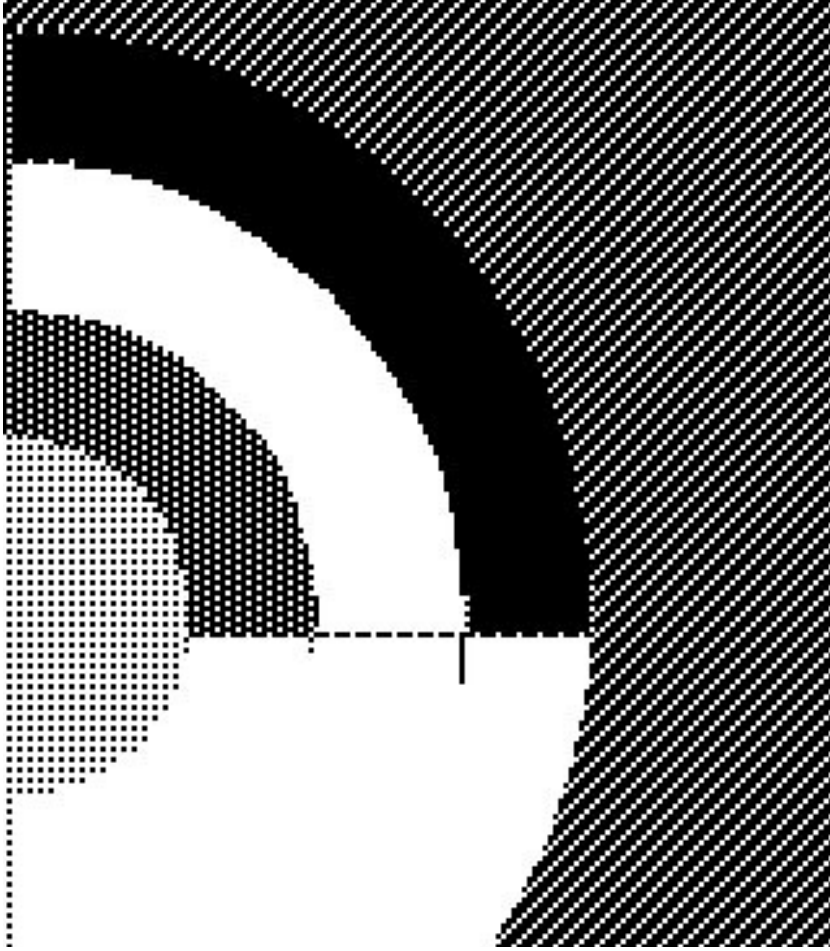
# Flood Fill

Flood Fill is an animation technique based on an algorithm of the same name, normally used to colour in regions of neighbouring pixels in an image editor, intentionally slowed down to unveil its inner mechanisms.

While still in use in today's drawing applications such as Adobe Photoshop, the algorithm had its debut in the early days of computer graphics, where the technical limitations unintentionally revealed the elegance of a machine process made visible.

The inspiration stems from the pixel graphics software Geo Paint on the C-64 computer. Due to the limitations of the hardware, its paint bucket function was slow and was executed directly into the





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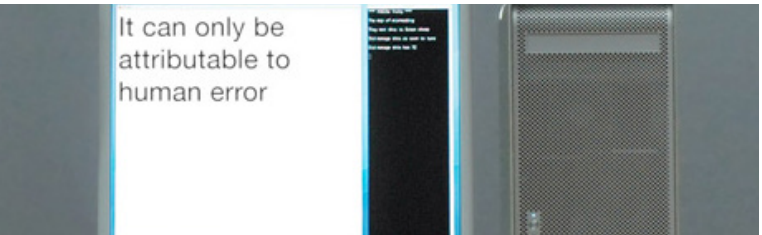
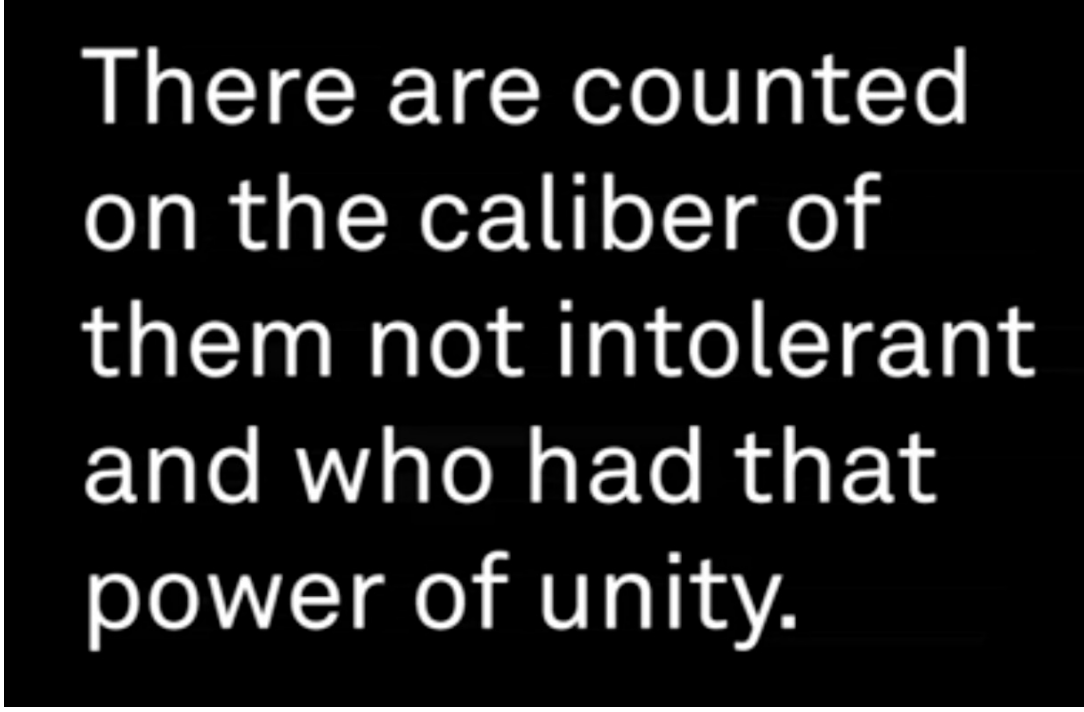
The inspiration stems from the pixel graphics software Geo Paint on the C-64 computer. Due to the limitations of the hardware, its paint bucket function was slow and was executed directly into the video memory.

There was something hypnotic about the motion and sequence of these pixels flowing into their shapes, like sand into a container. It felt a bit like watching the computer absent-mindedly executing phone doodles.



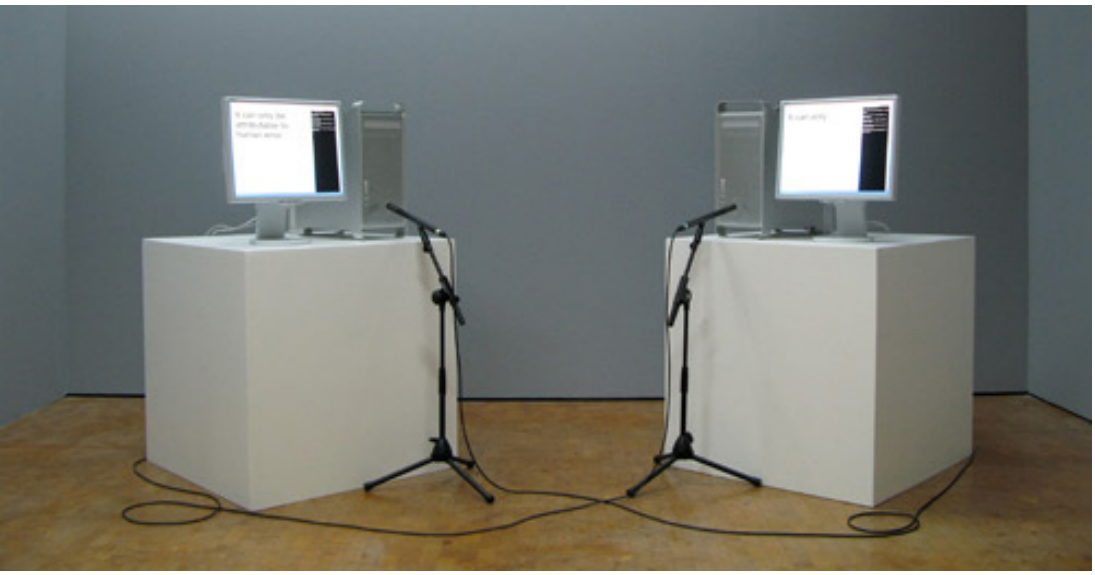


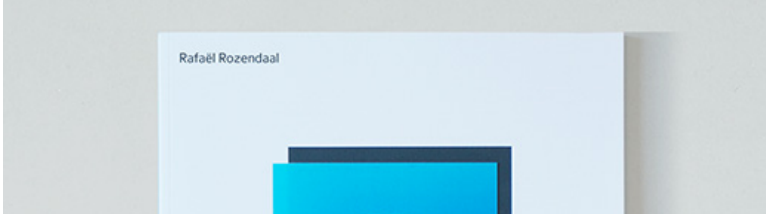

# Apple Talk

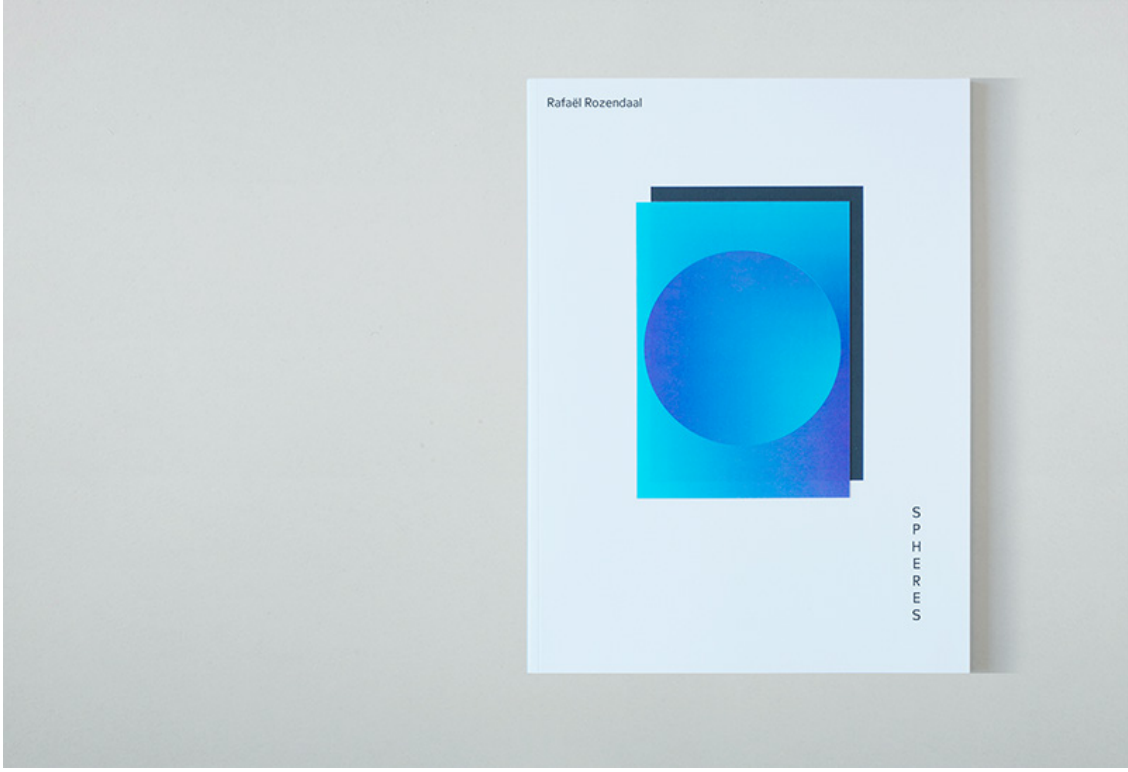
Apple Talk confronts two Macintosh computers with the imperfections of verbal communication. Using two microphones, text-to-speech and voice recognition software, the two machines continuously transform written sentences into spoken words and back into written form in an endless loop, leaving room for error and automatic interpretation.

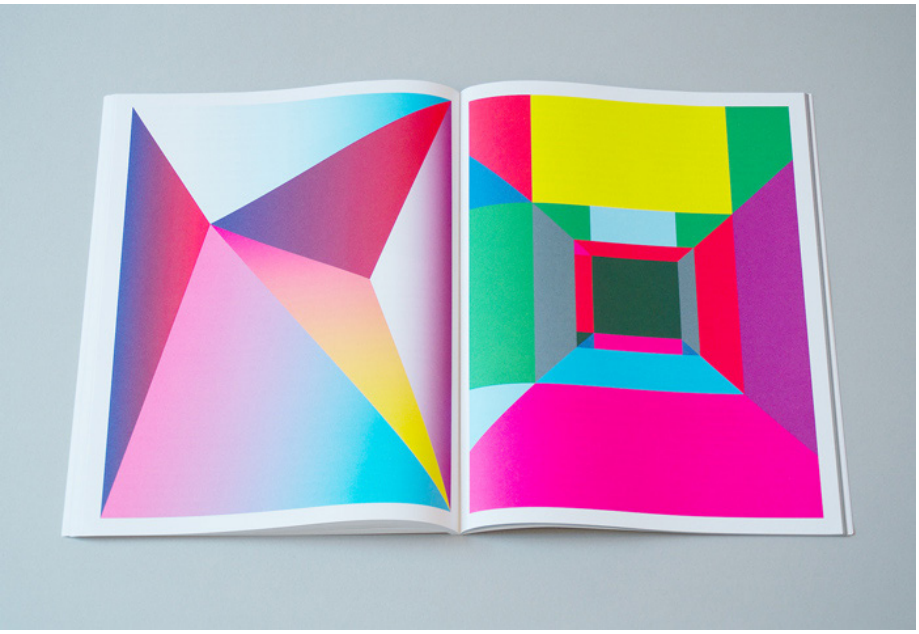
With its similarities to the Telephone game (somewhat offensively called Téléphone Arabe in France, and Chinese Whispers in England), it results in a constant permutation of text and a production of poetic errors and leftovers.

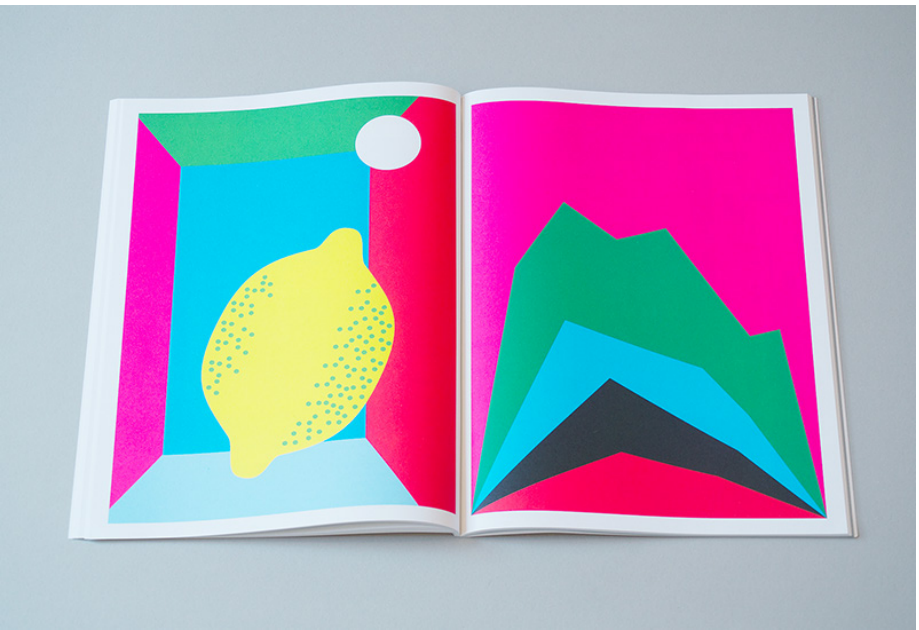
The first version of the installation was created by Jürg Lehni as a contribution to a group project with Franz Hoffman, Pierre Terrier and Jerome Rigaud at ECAL in 2002, entitled Analog Information. An entirely new version was created in 2007 for the exhibition Man-[in the]-Machine at ZKM, Karlsruhe, with texts selected with the German writer Stephan Krass.





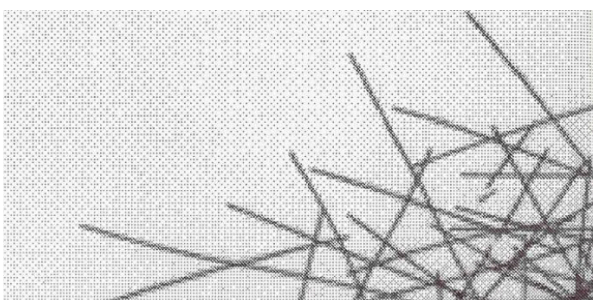


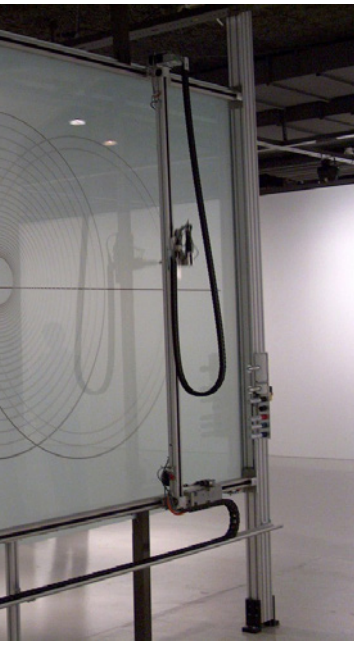



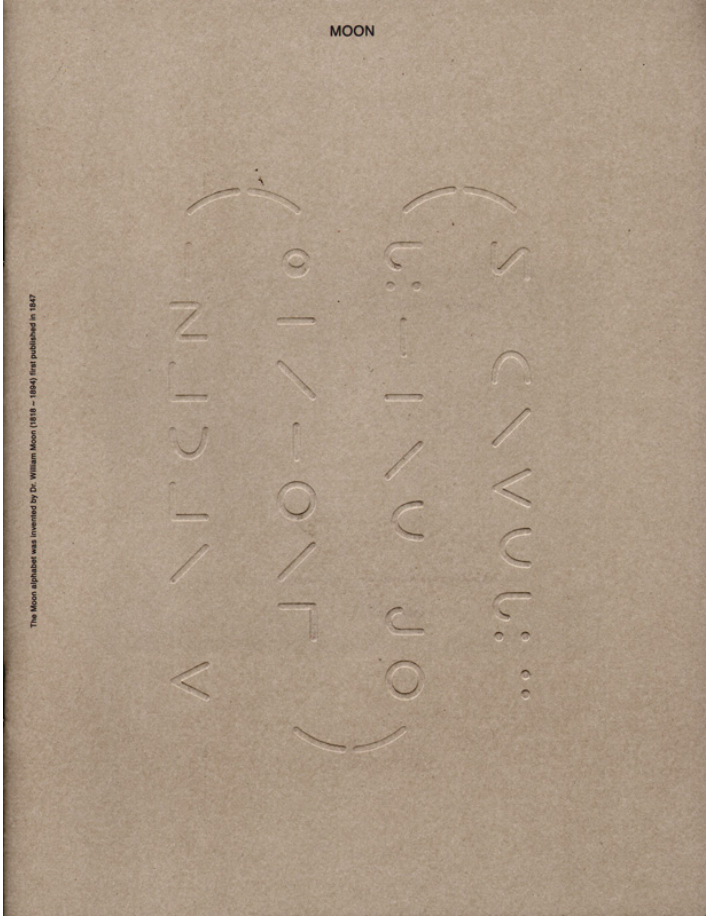


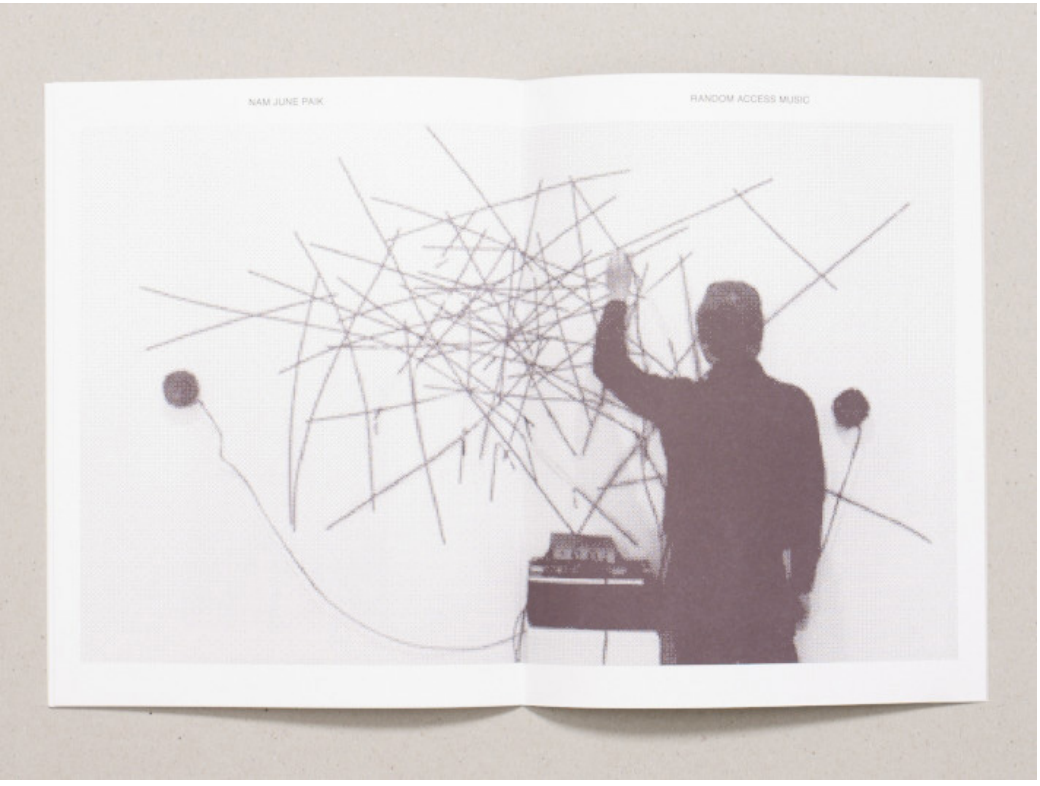
# Compression by Abstraction

Rafaël Rozendaal and Jürg Lehni discuss their shared interest in vector graphics, which are based on mathematically-formulated geometrical entities such as lines, curves and points, in contrast to more commonly used bitmap graphics, in which values are assigned to grids of pixels. The text was first published in Spheres Magazine by Swiss graphic designer Philippe Karrer, and later made available for online reading on Rhizome.org.








# Research Notes

Research Notes attempts to celebrate how we find ourselves doodling while on the phone, testing pens in stationery shops, our belief in folklore, the need to misuse technology or whose idea it was to fly aero planes in formation to write messages across our skies.

Selected from the shared archive A Recent History Of Writing & Drawing, the book provides references to things old, new and maybe forgotten which together can offer an alternative understanding of our habit to document and communicate thoughts and ideas.

Upending assumptions that any one kind of communication is more authentic, more direct or more valid that any other, meaning, texture and poetry is found in the most unlikely places.



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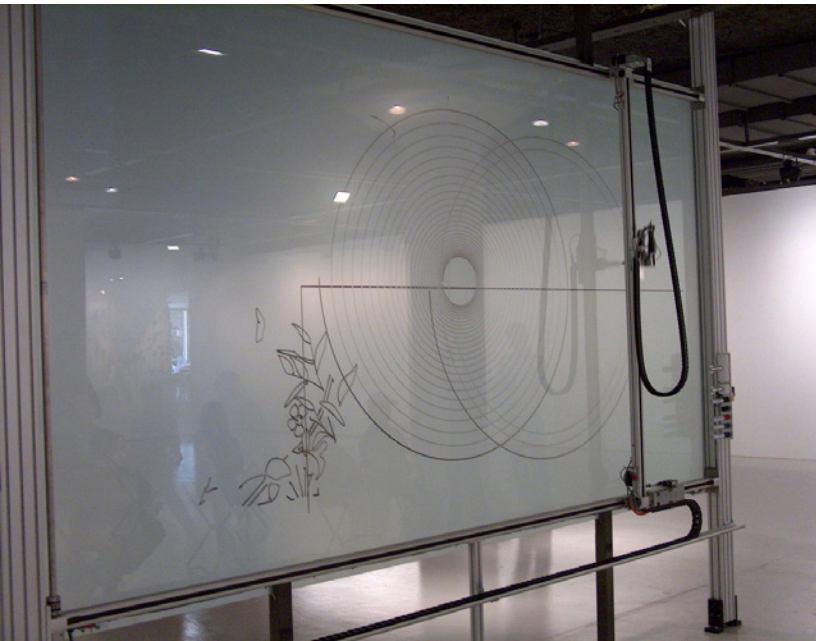
# Rita

Rita is a recording and playback device for drawings, capable of displaying constantly changing content by reproducing line drawings and erasing them again.

The installation was originally conceived to extend the architecture of an existing building, by drawing directly onto a window that faces the outside, communicating to passersby and luring them in.



Rita allows the instrumentalization of the drawing and the play with its narrative qualities by controlling the sequence and dynamics of the drawing process. Its flexible tool-head can change between four whiteboard markers and two sponges of different sizes.

Erasing was made an active component of the process, adding the possibility to change already drawn lines, as well as to clear the entire surface for the next drawing. Rita continuously reproduces without ever producing anything, as its results are not there to stay.

The focus is instead on the moment of the creation and the simulation of the dynamics and expression of drawings, rather than their finished form. The tension between a personal drawing and its automated reproduction and simulation by a machine holds ambiguous and poetic qualities.