

# DESIGNING PROGRAMS

# An introductory course for design students

# Introduction

Designing Programs is a set of Processing sketches that primarily introduce the basics of programming for graphic design students and design students at large. It is used as a pedagogical tool in my classes at the [École Supérieur d'Art et de Design](#) in Amiens, France.

This document serves as a visual reference to each chapter of the course. It is not a visual reference however of the sketches, rather it presents professional projects and artistic references that help to emphasize certain programming structures and techniques introduced in the sketches.

# Contents

- 1). Shape & Form
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  - 3). Randomness
  - 4). Geometry
  - 5). Interaction\_01
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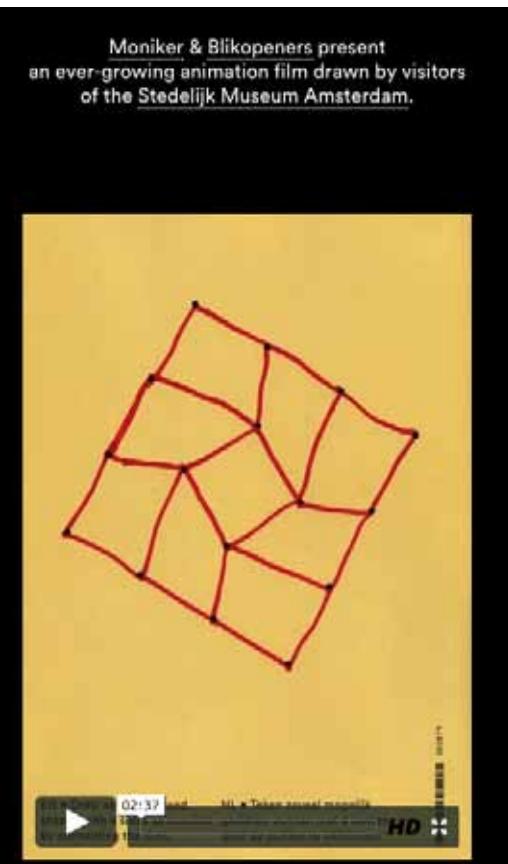
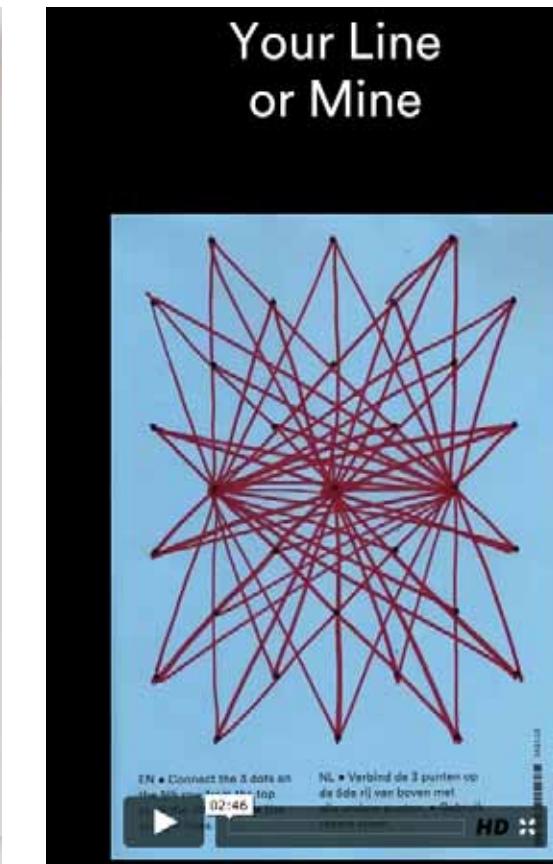
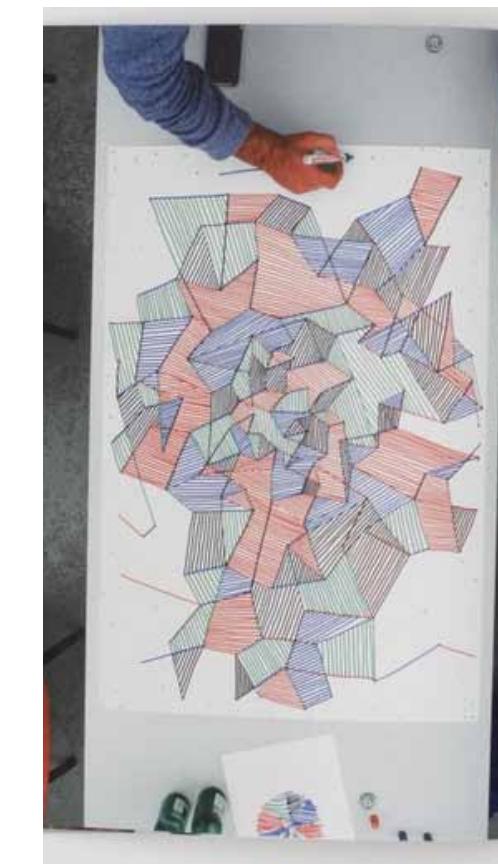
Projet CoDesign. ESAD 2014

# SHAPE & FORM

## The building blocks

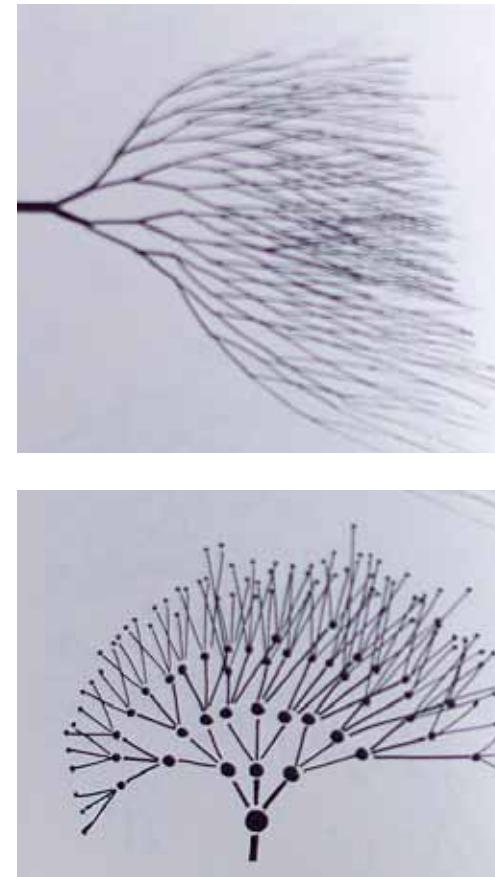
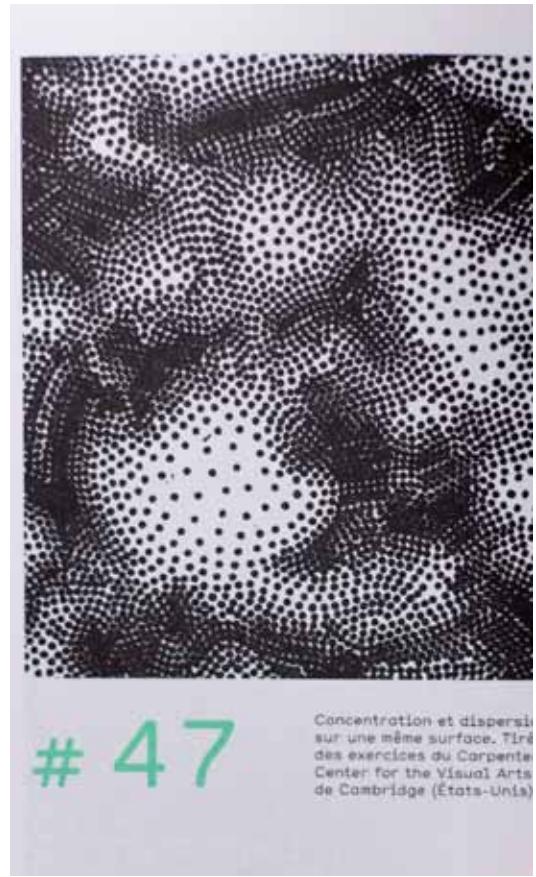
Shapes are the primitive formal elements such as circles, rectangles, triangles, point and line. It is from these basic fundamental graphic shapes that form ensues. Form is the combination of shape, hence making for more complex visuals.

The organisation and relationships of these shapes within a given space define the communicative qualities of an image.

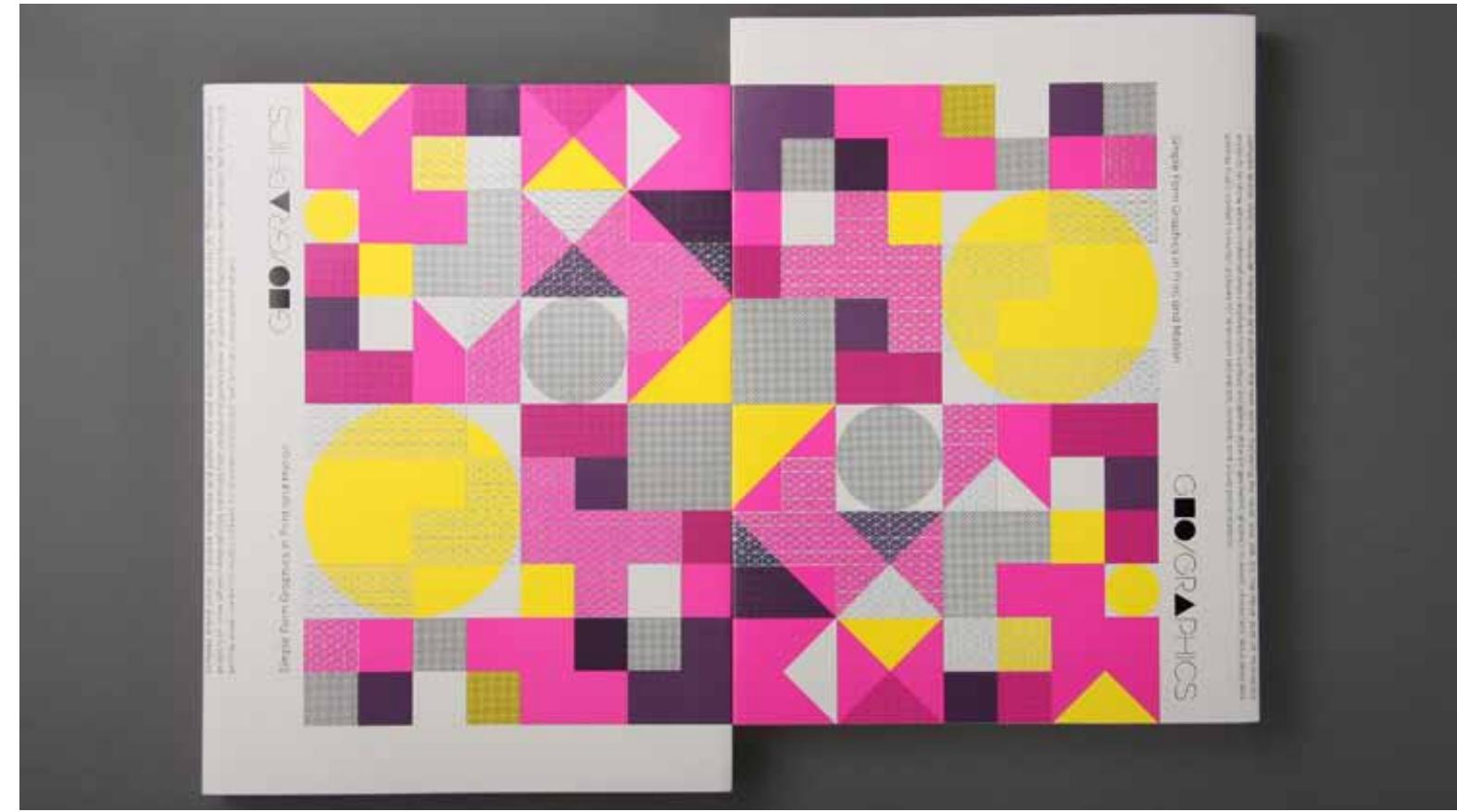


[Conditional Design Workbook. Studio Moniker](#)

[Your Line or Mine. Studio Moniker](#)



[Design & Visual Communication. Bruno Munari](#)



[Geo/graphics. Book published by Victionary](#)



[Close-up of Japan London 1985  
SEIJI OZAWA / THE NEW JAPAN PHILHARMONIC  
JAPAN NEW MUSIC FORUM  
ISSEY MIYAKE / BODYWORKS Fashion Without Taboos  
TADASHI SUZUKI and SCOTT WOODS SHO-GEKIJŌ The Trojan Women  
MITSUI GROUP](#)

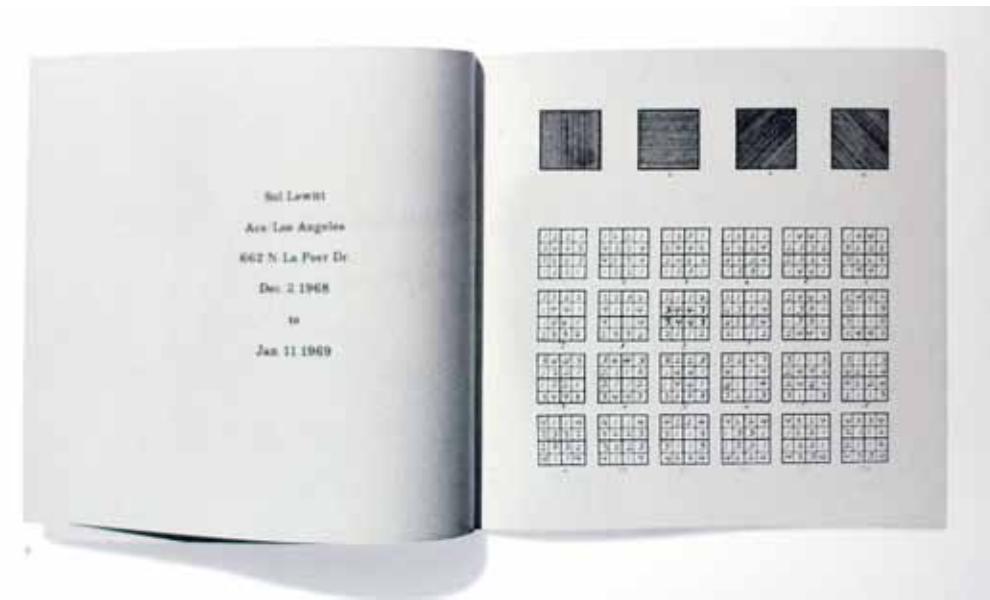
[Poster by Ikko Tanaka](#)

Moniker & Blikopeners present  
an ever-growing animation film drawn by visitors  
of the Stedelijk Museum Amsterdam.

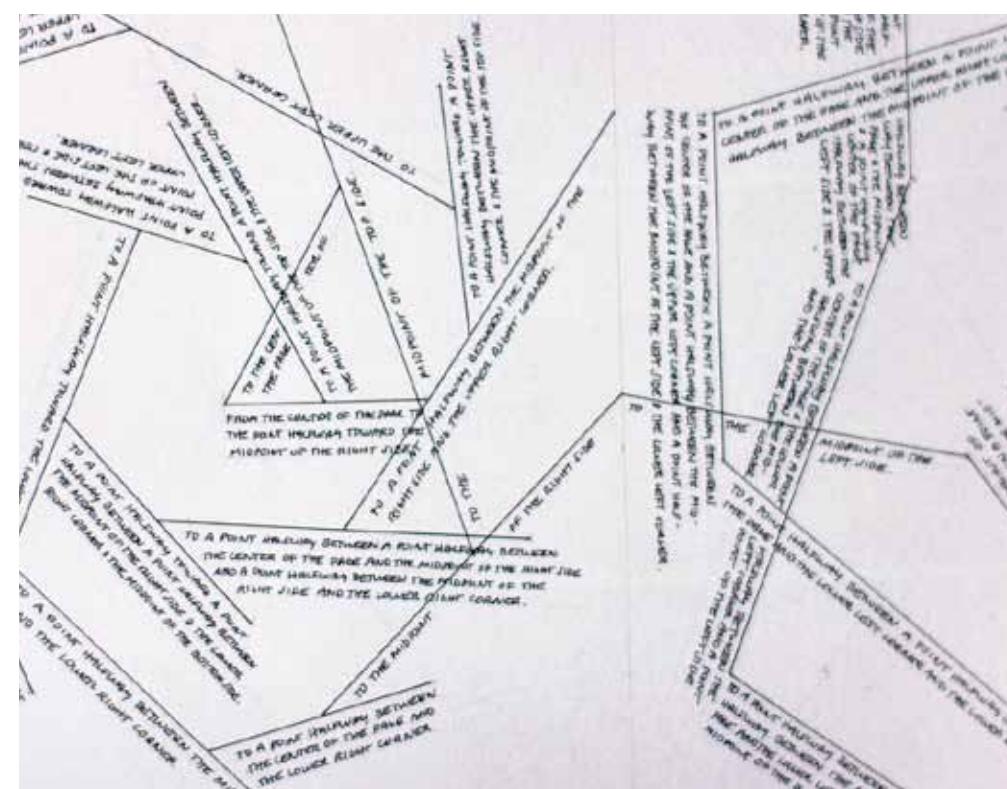
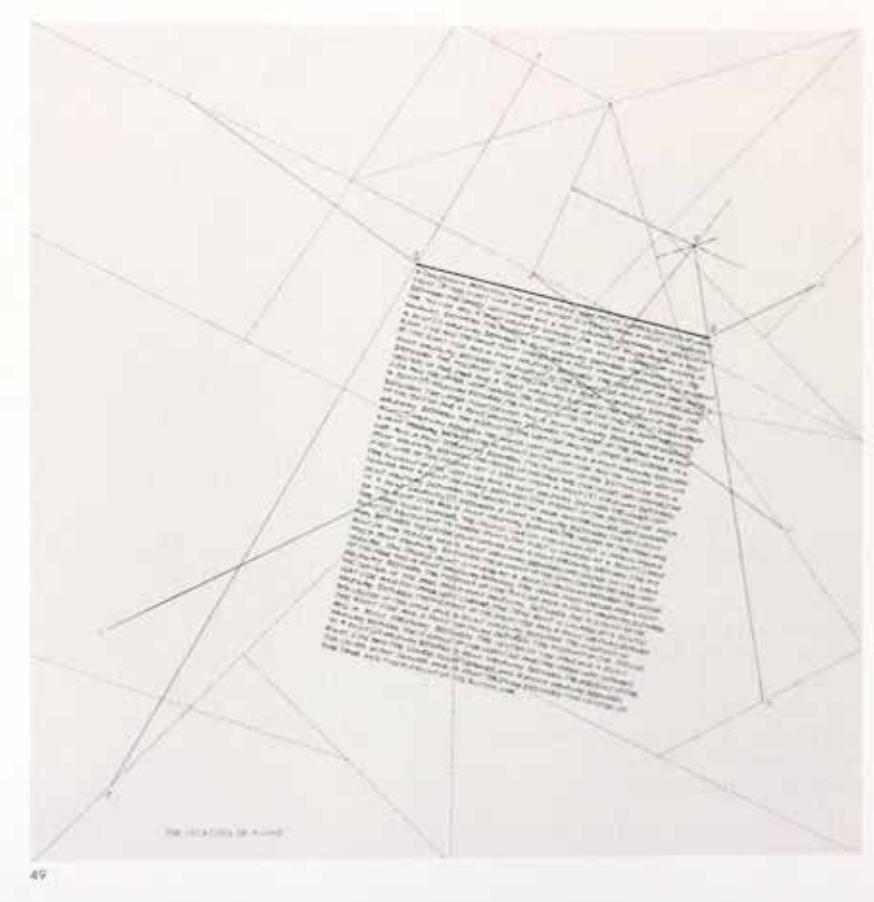
DRAWING SERIES, II A



|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |
| 3 | 4 | 3 | 2 | 3 | 3 | 4 | 3 | 4 | 3 |
| 3 | 4 | 3 | 2 | 3 | 3 | 4 | 3 | 4 | 3 |
| 2 | 4 | 1 | 2 | 1 | 4 | 1 | 2 | 1 | 4 |
| 2 | 4 | 1 | 2 | 1 | 4 | 1 | 2 | 1 | 4 |
| 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |
| 3 | 2 | 1 | 2 | 3 | 2 | 1 | 3 | 2 | 1 |
| 2 | 4 | 1 | 2 | 1 | 4 | 1 | 1 | 4 | 1 |
| 2 | 4 | 1 | 2 | 1 | 4 | 1 | 1 | 4 | 1 |
| 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |



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| 2 | 3 | 3 | 2 | 2 | 3 | 3 | 2 | 2 | 3 |
| 1 | 4 | 4 | 1 | 4 | 1 | 1 | 4 | 1 | 4 |
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| 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |
| 3 | 4 | 4 | 3 | 3 | 4 | 4 | 3 | 3 | 4 |
| 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |
| 1 | 2 | 1 | 2 | 1 | 4 | 1 | 4 | 1 | 2 |
| 3 | 4 | 4 | 3 | 3 | 4 | 4 | 3 | 3 | 4 |
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The individual pieces are composed of a form set equally within another and centered. Using this premise as a guide no further design is necessary.

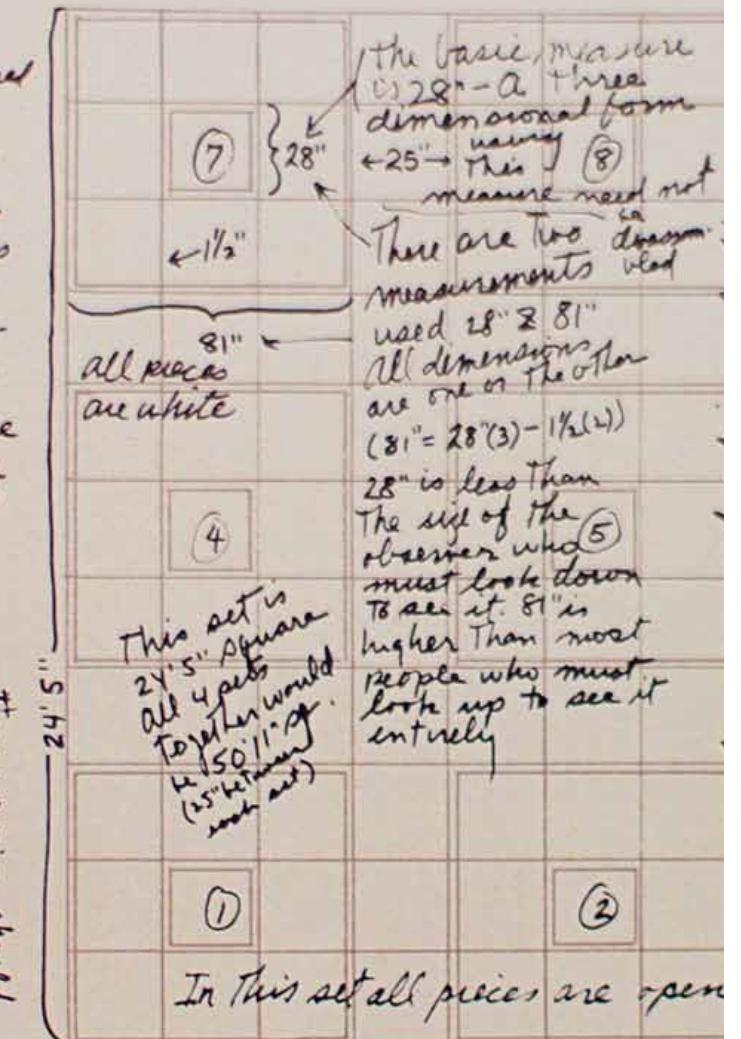
The cube, square and variants on them are used as grammatical devices.

These pieces should be made without regard for their appearance but to complete the variations that are pre-set.

These pieces were made by Treitel and Gratz of New York Jan-March 1967

SOL LEWITT DWAN GALLERY LOS

ONE SET OF NINE PIS



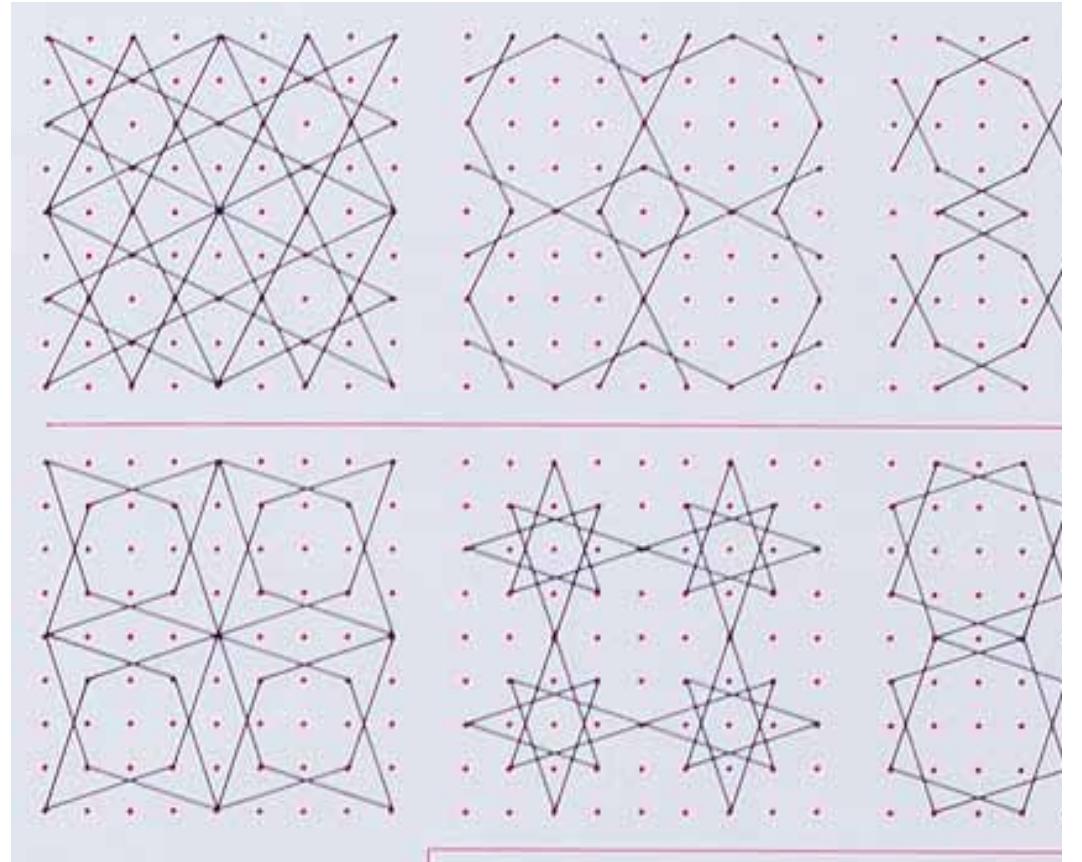
- ① INSIDE 28" x 28"  
OUTSIDE 81" x 81"
- ④ INSIDE 28" x 28"  
OUTSIDE 81" x 81" x 28"
- ② INSIDE 28" x 28" x 28"  
OUTSIDE 81" x 81" x 28"
- ⑤ INSIDE 28" x 28" x 28"  
OUTSIDE 81" x 81" x 28"
- ③ INSIDE 28" x 28" x 81"  
OUTSIDE 81" x 81" x 81"
- ⑥ INSIDE 28" x 28" x 81"  
OUTSIDE 81" x 81" x 28"

# SUPERFORMS

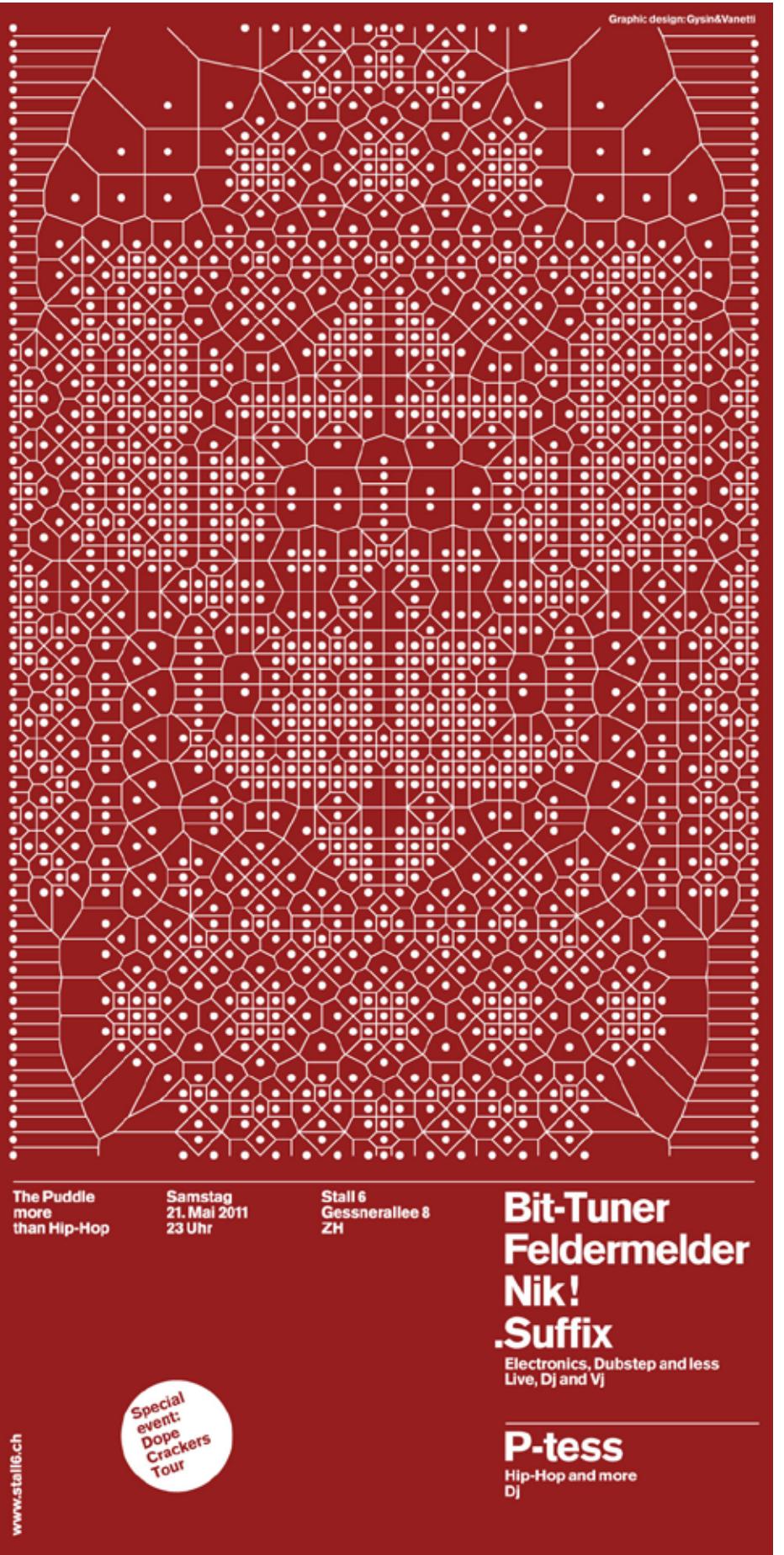
The simple to the complex

From simple form we can produce more complex images through repetition. Repetition is the underlying power of the computer and can be put to good use relatively easily within a program to repeat form and create engaging graphic patterns.

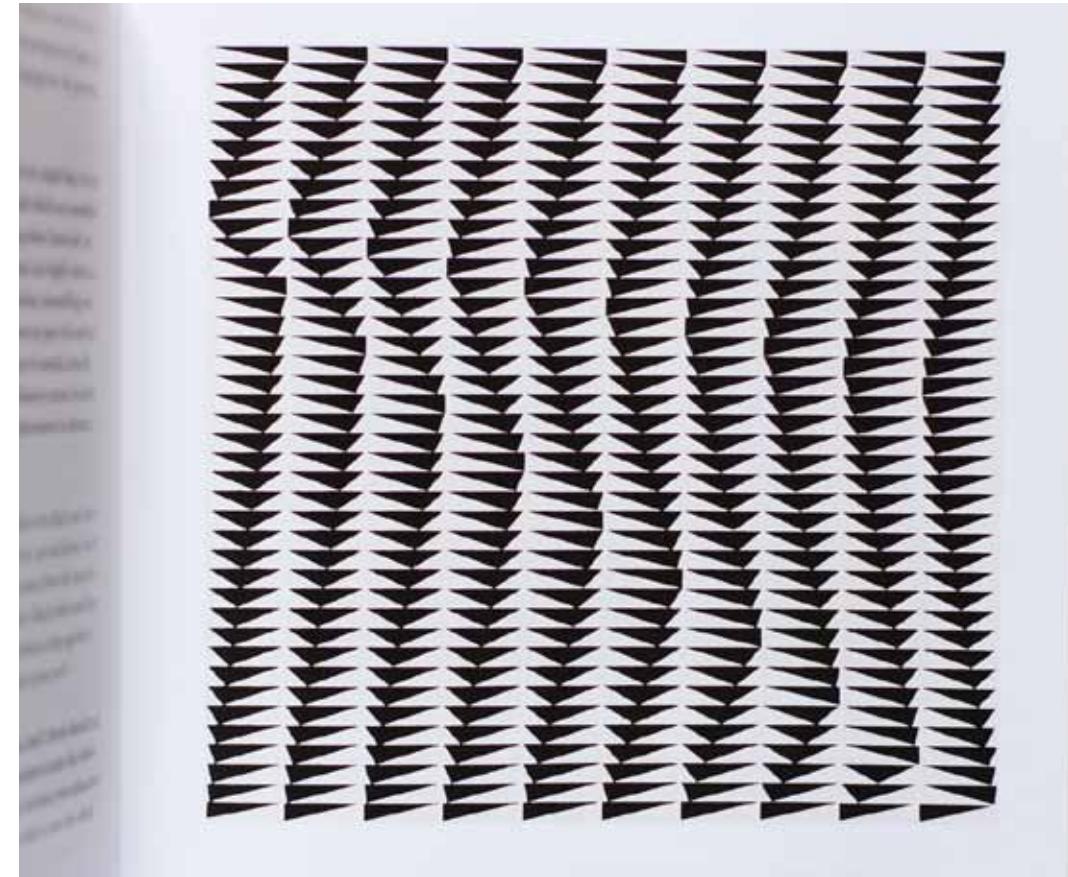
Patterns and geometric repetition have a long and rich history in the arts from the Alhambra Palace to book design.



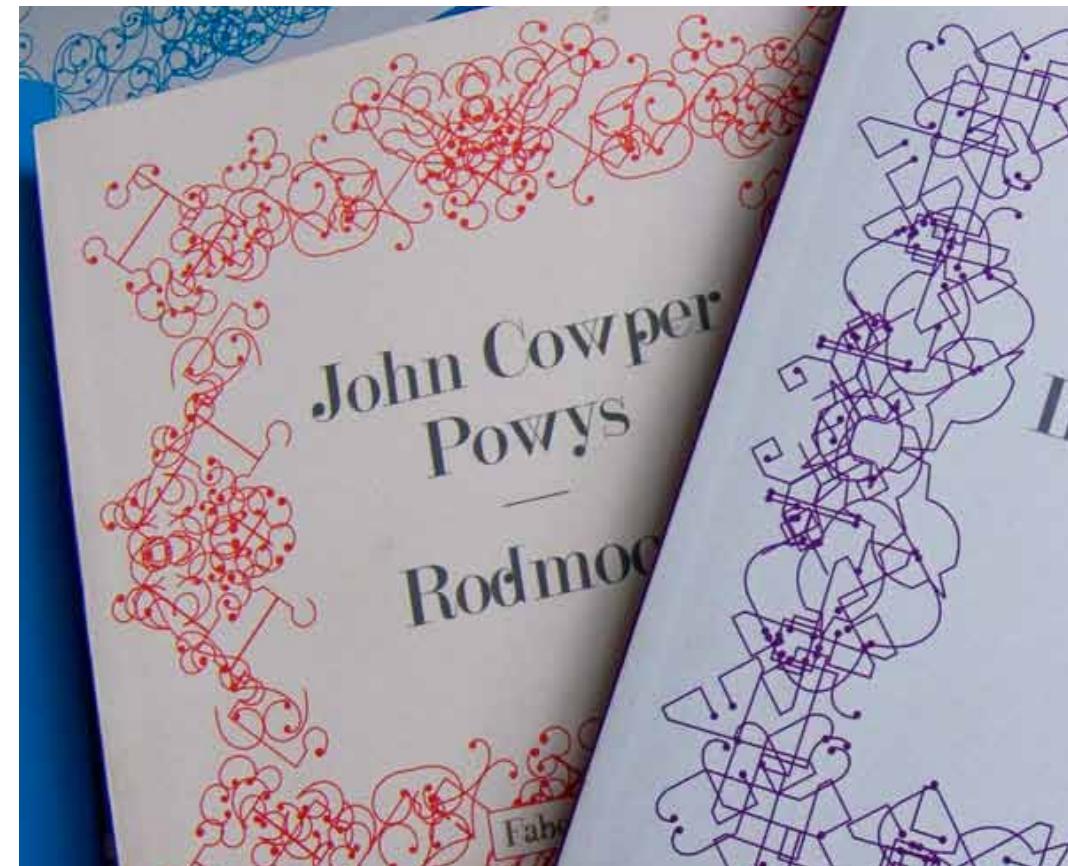
[Designing Programmes. Karl Gerstner 1963.](#)



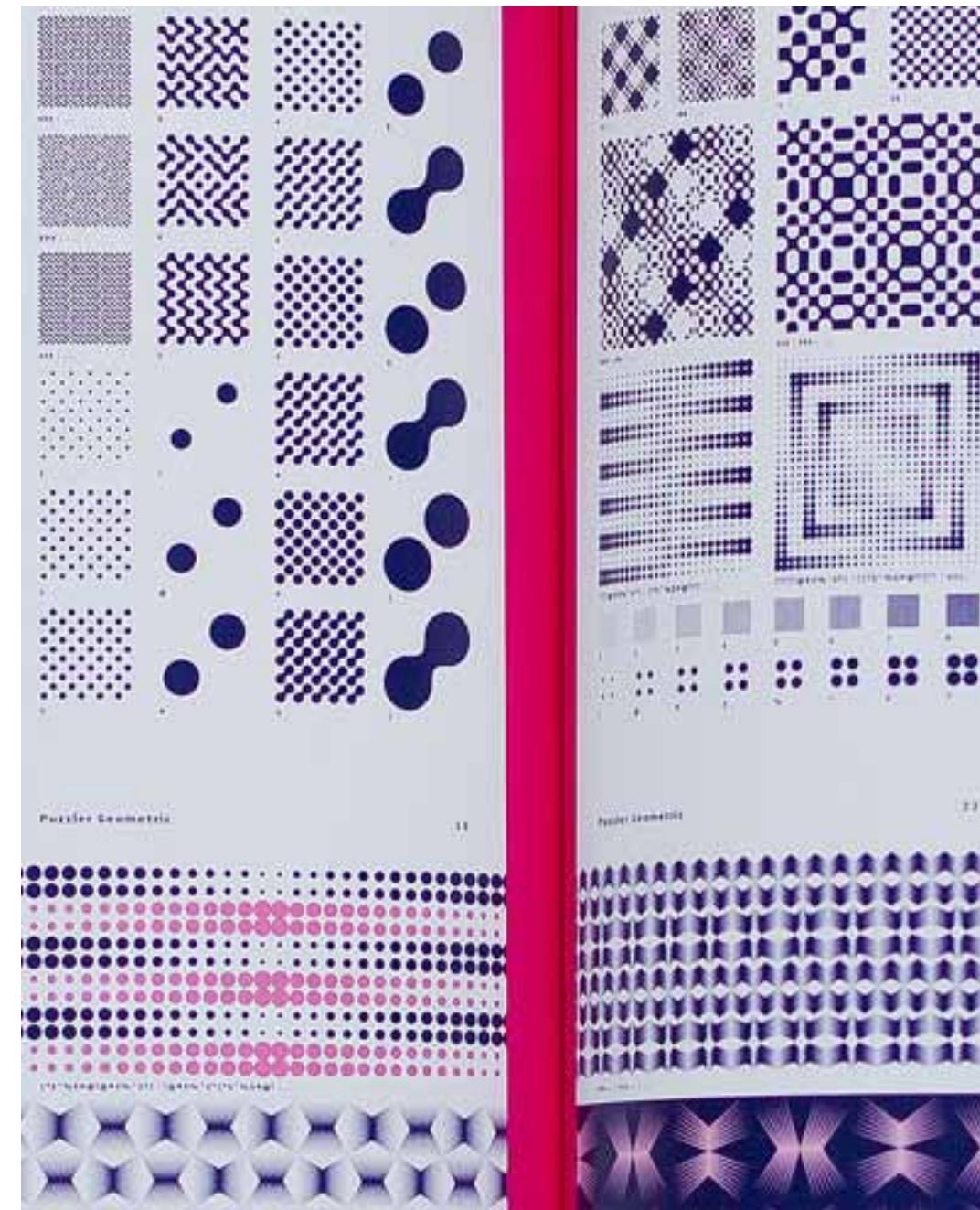
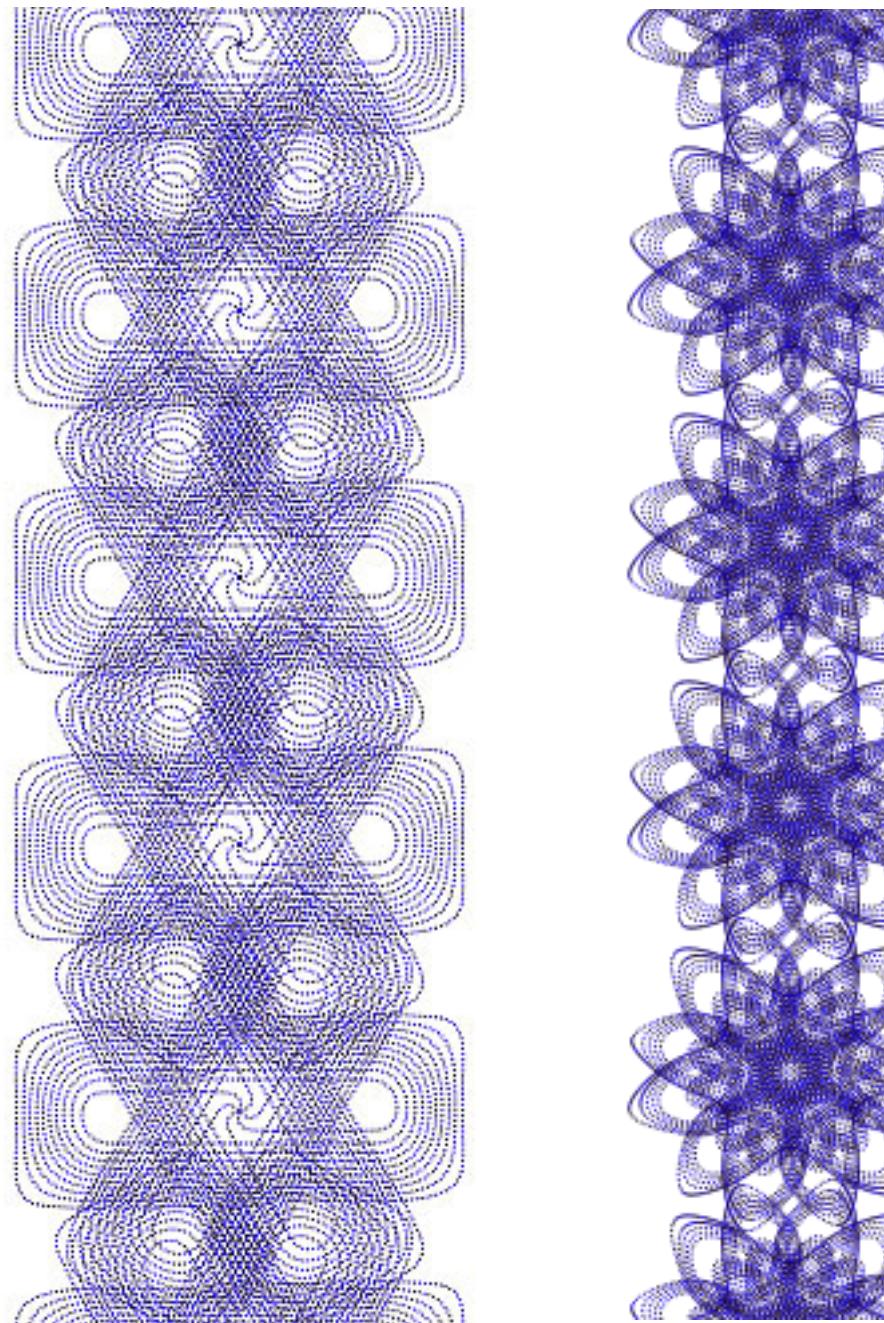
[Puddle Builder. Andreas Gysin.](#)



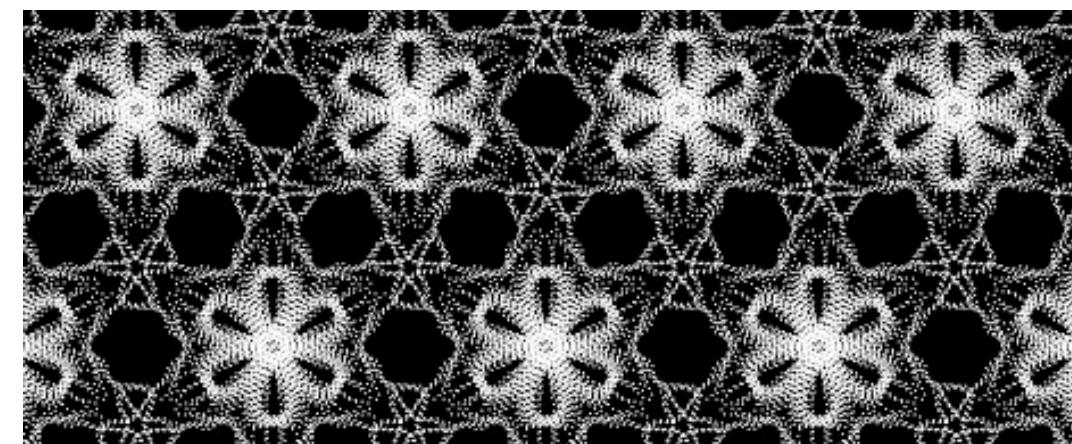
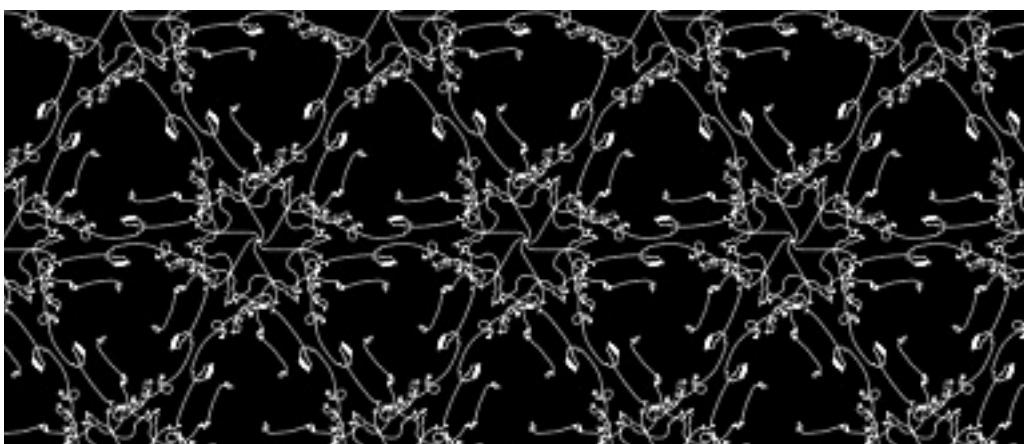
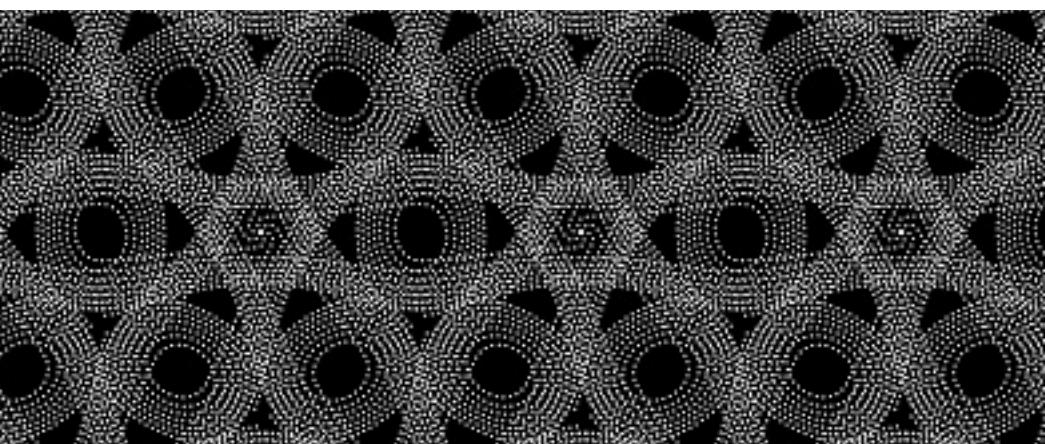
[Bridget Riley](#)



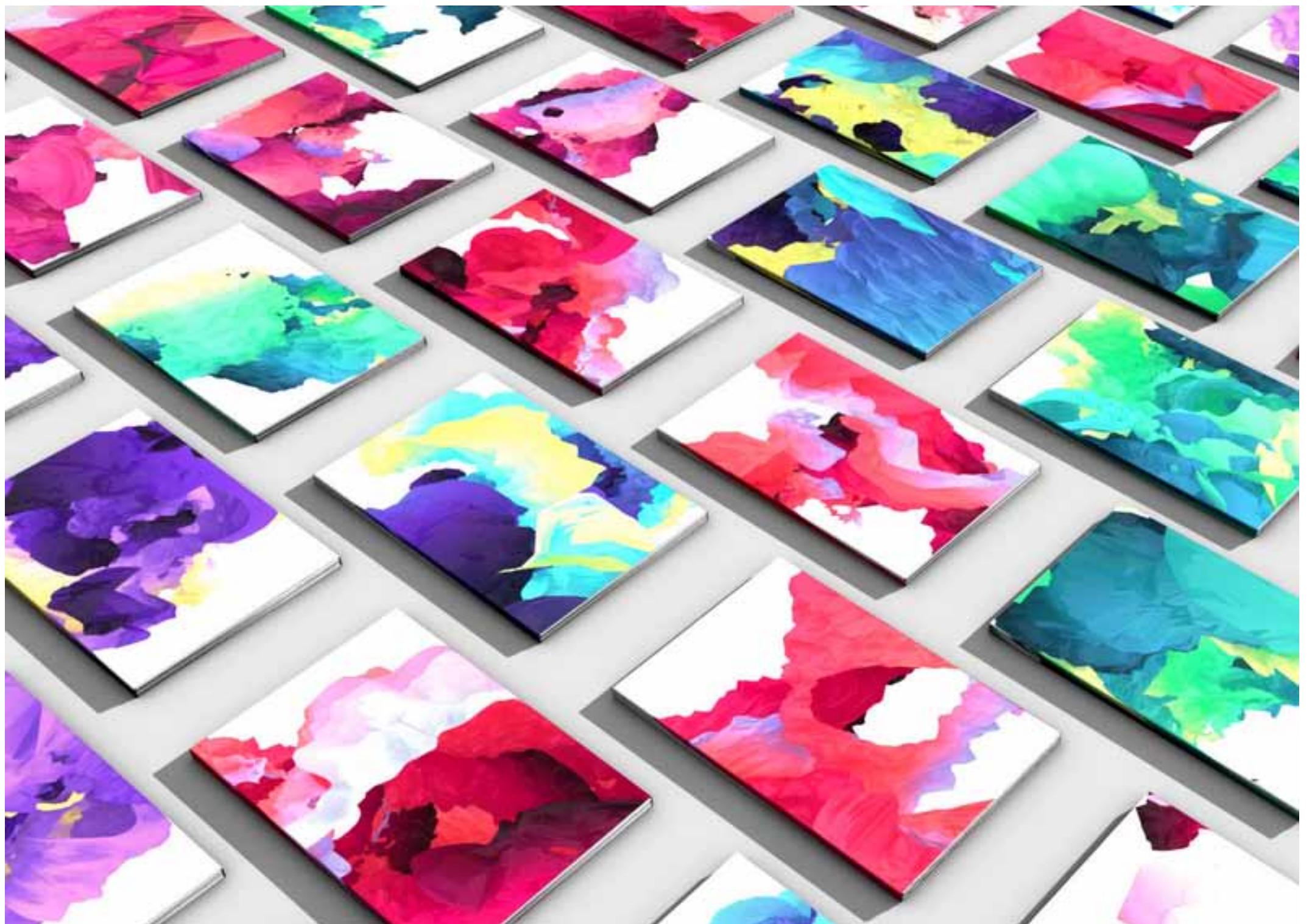
[Faber & Faber Books. Marian Bantjes & Karsten Schmidt.](#)



[Draw Me Loops FOR Ever](#). Screen grabs from a custom pattern generator application

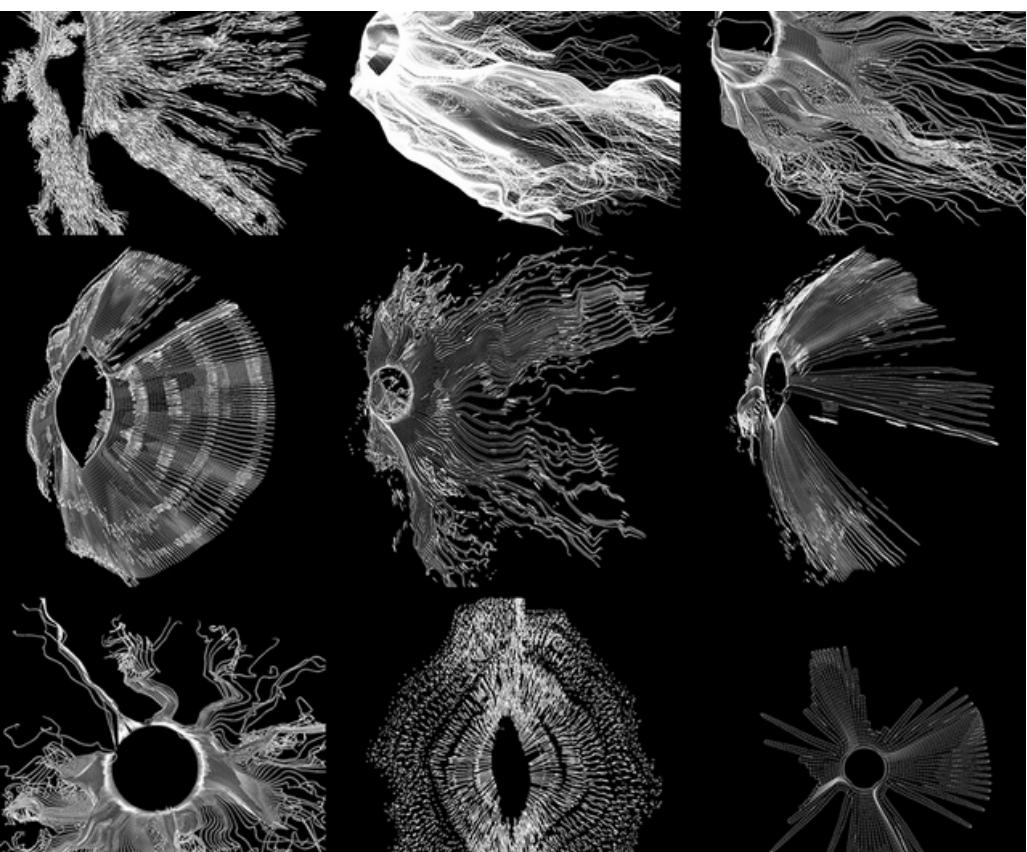
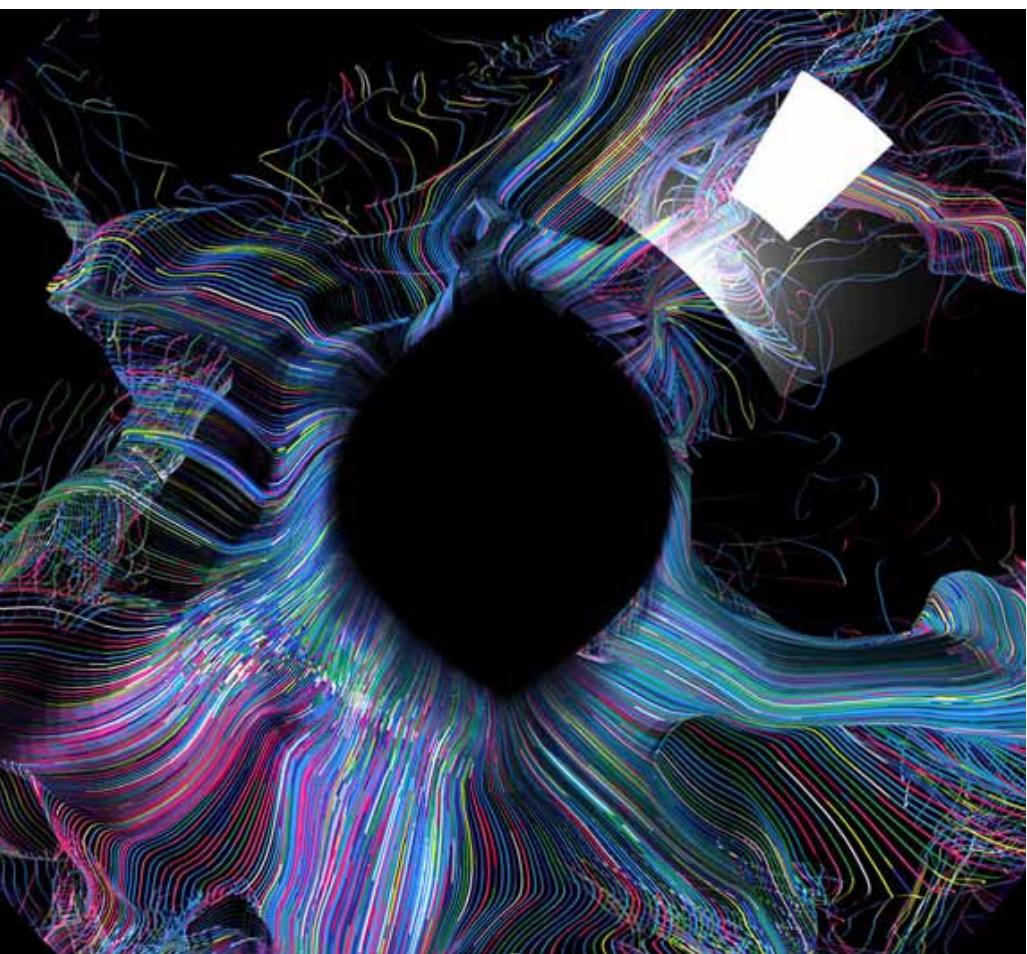


Research material above showing rotational symmetry system. Images below showing further iterations of the system.



[10,000 Digital Prints. 2012. FiELD Studio](#)

In the above project, *Digital Prints*, studio Field used the repetitive power of the computer to automatically print out uniquely generated images.



[Big Eyes. Brand Identity. 2014. FiELD Studio](#)



## Poster Chaumont 2010. Karel Martens

Although the above posters are not necessarily created using programming, they each share qualities of repetition of form to build up the bigger picture



## Identity CNAP. Akatre

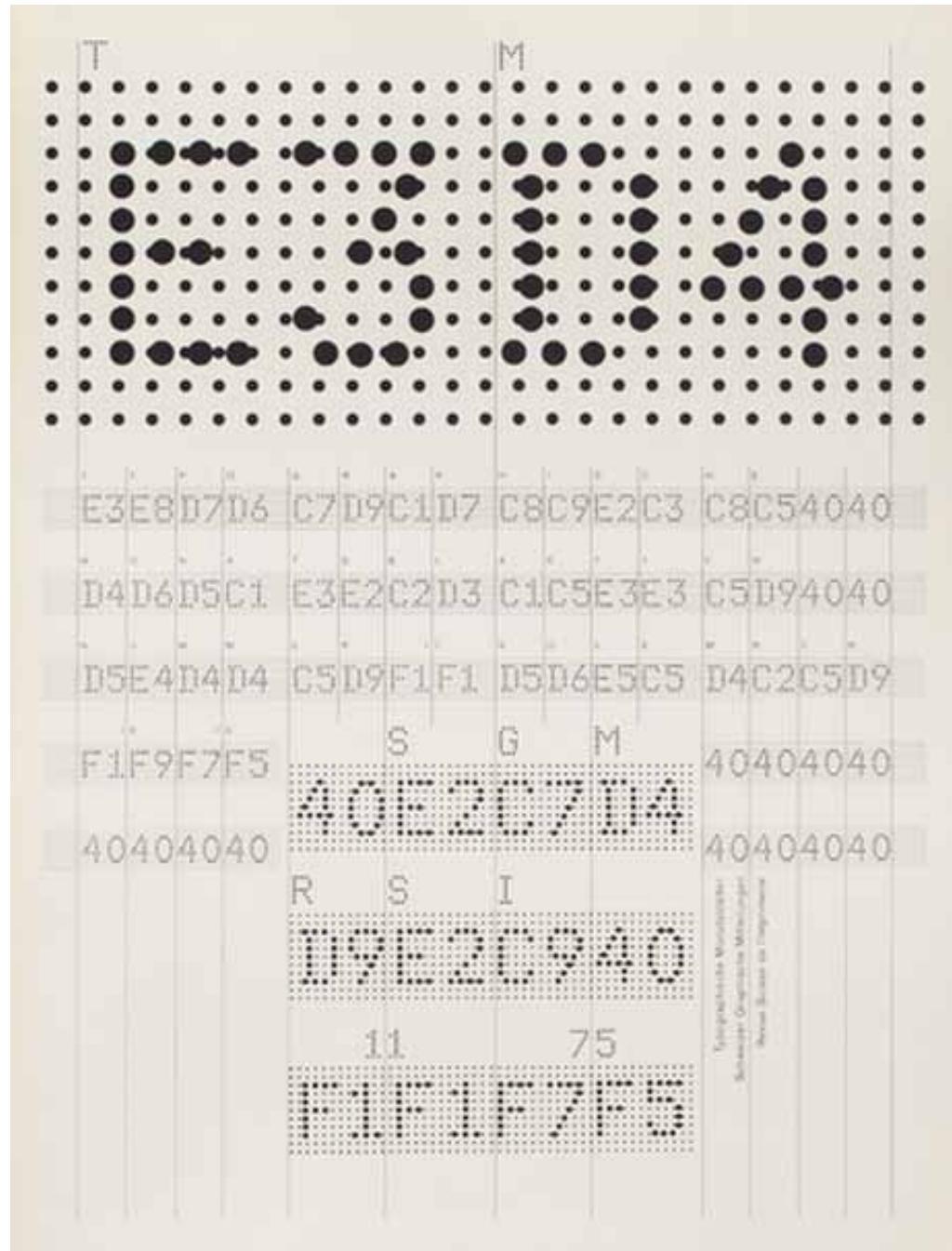
## Poster 2011. Cheval Vert



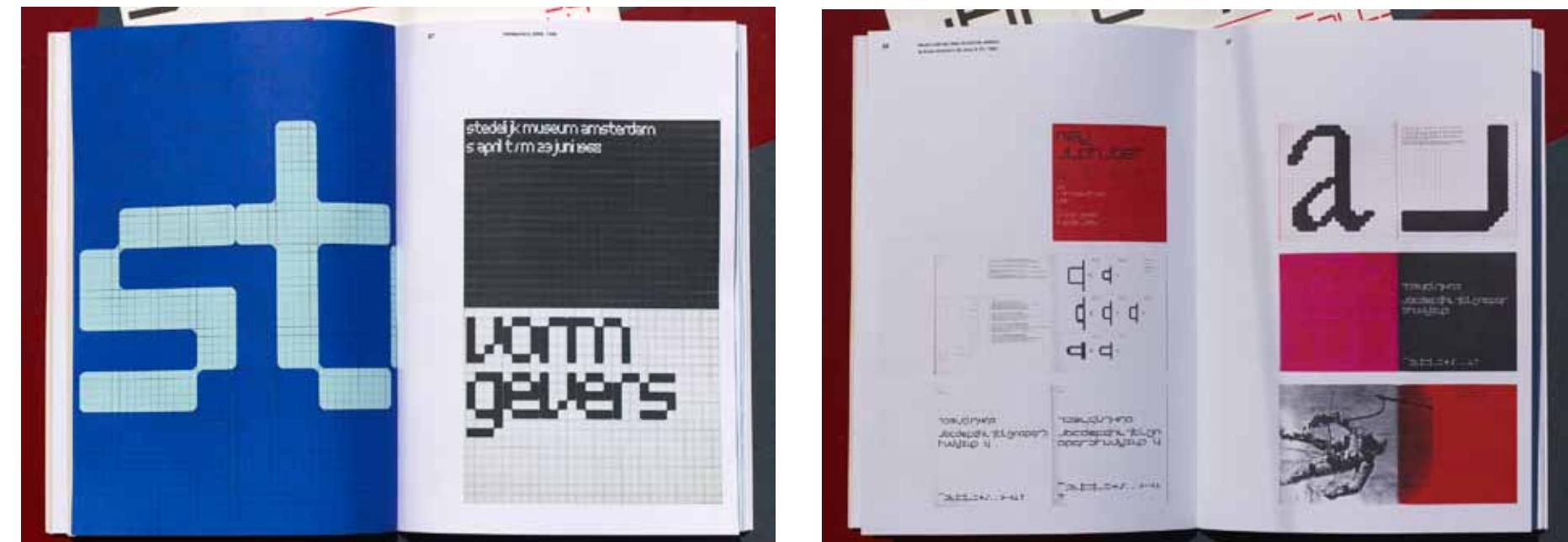
# LETTER FORMS

## The shape of language

There is a long tradition in experimenting with letter forms and this is an extremely fertile terrain to explore with code enabling for dynamic and interactive typographic systems.



[Cover Design. TM Research 1975.](#)



[Alphabets. Wim Crowell](#)

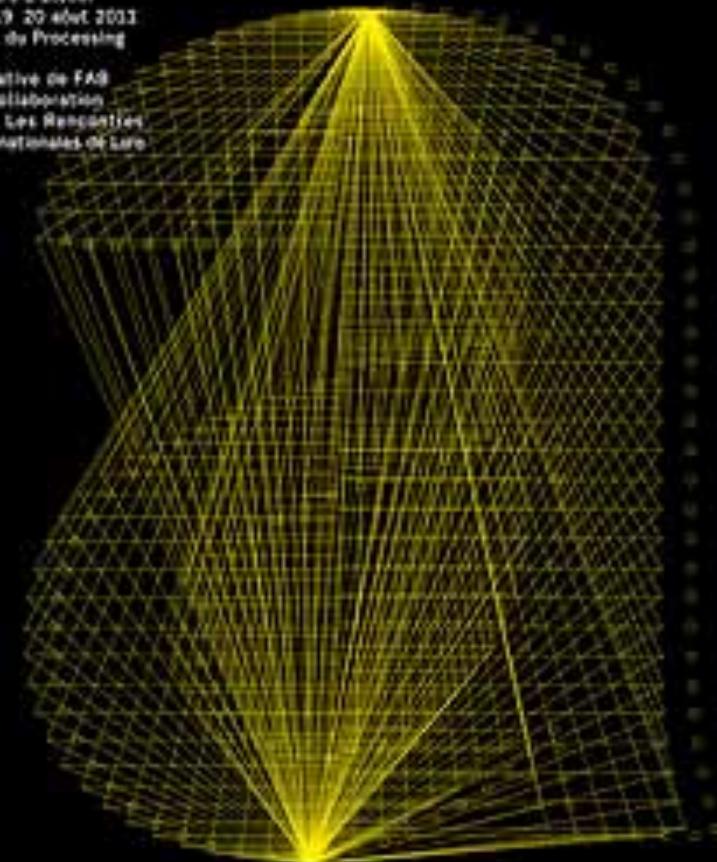


[Wissensbilanz. Rainer Kohlberger. 2011](#)

# workshop typographie générative

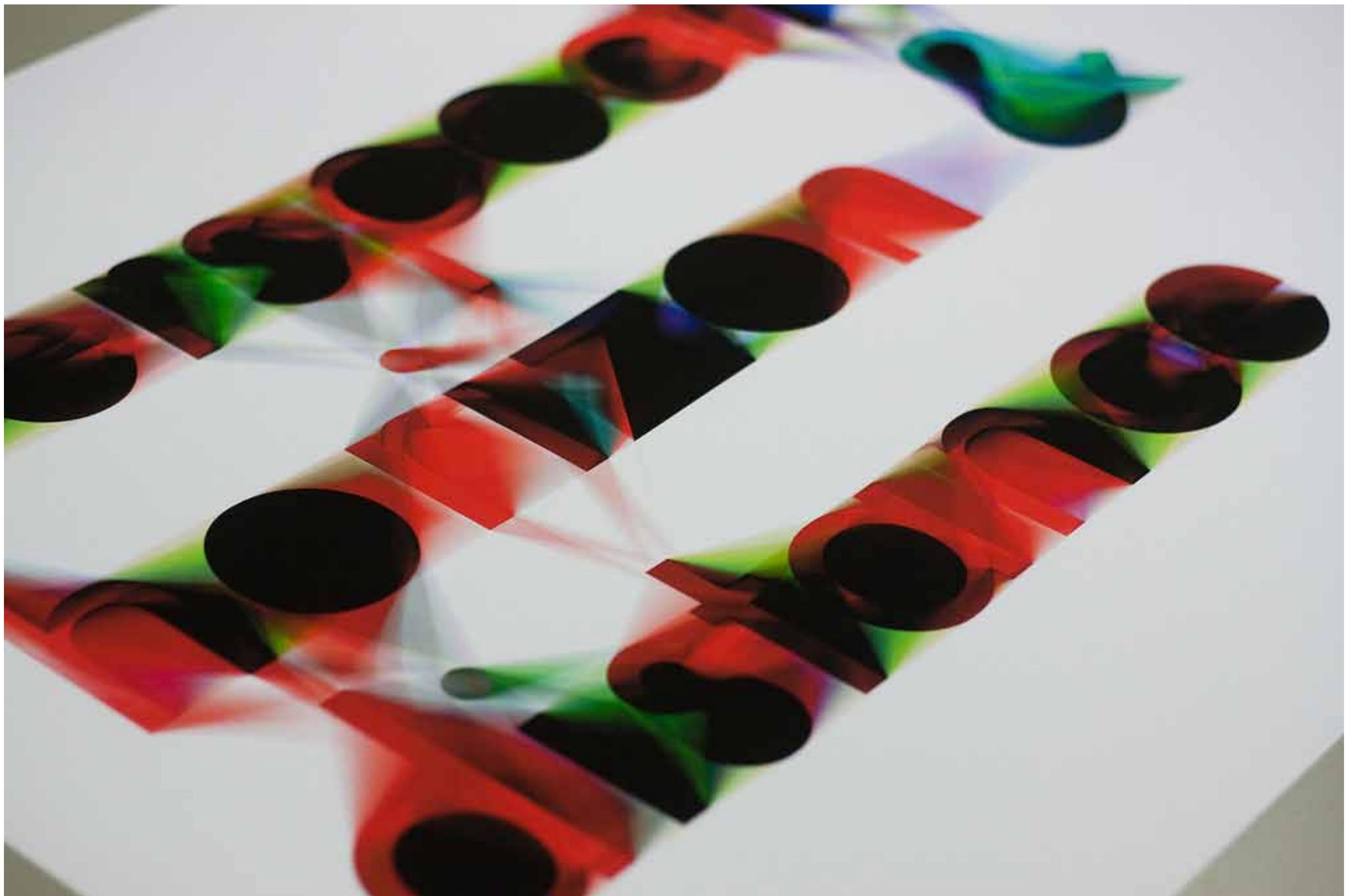
3 jours d'atelier  
18 19 20 aout 2011  
avec de Processing

initiative de FA8  
en collaboration  
avec les Rencontres  
Internationales de Lyon



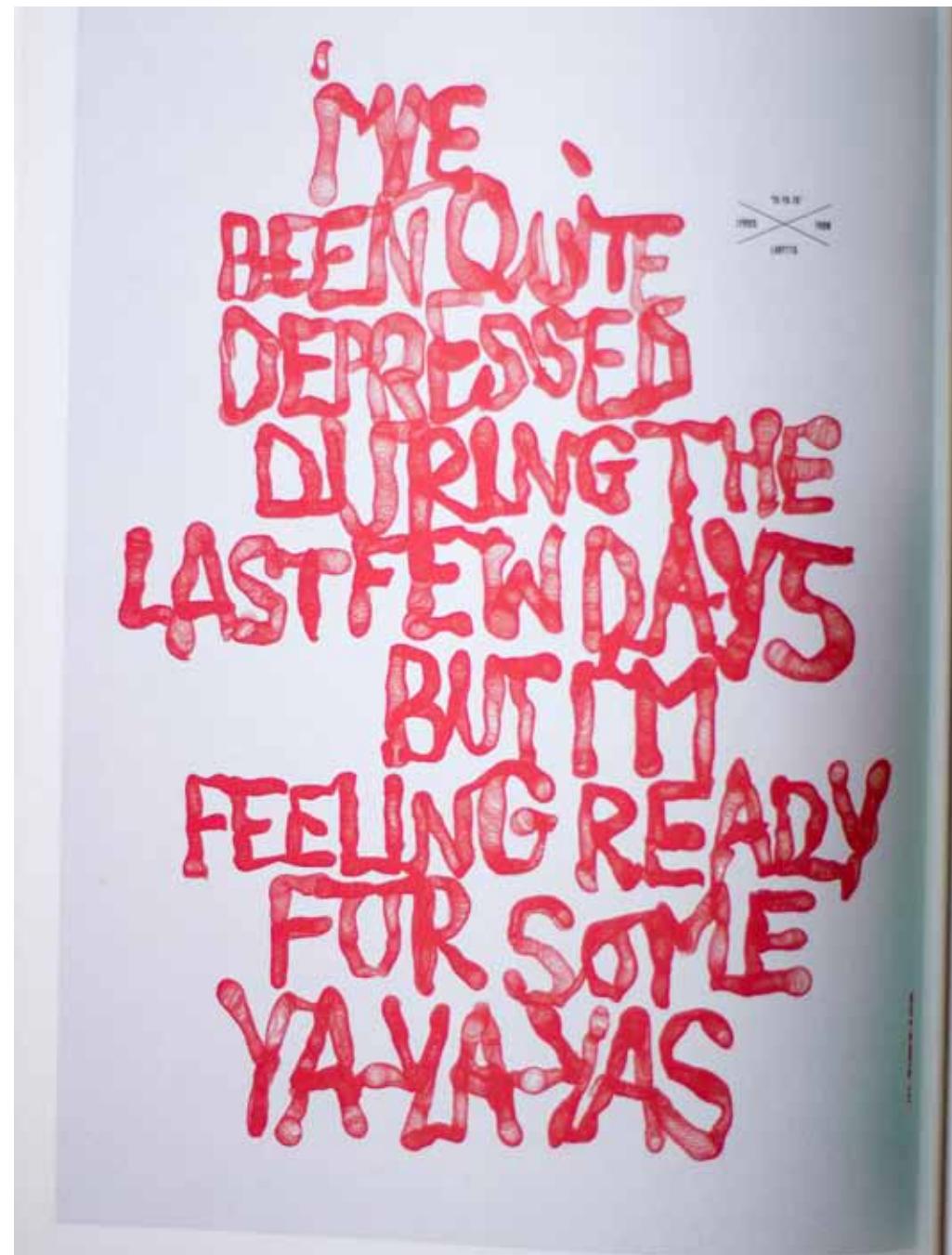
Inscrivez-vous à :  
[info@freeartbureau.org](mailto:info@freeartbureau.org)

OBSERVING THE SUBFACE & SURFACE  
ACCORDING TO GENERATIVE PROCESS





Posters. Côme de Bouchony



Found in the pub

LUST | Scraper Type

www.lust.nl/scrapers/

## Scraper Light

Occupied Frankfurt Tangled Web Tangled  
Camp Eviction Web Tangled Web  
Occupy Frankfurt Tangled Web  
Camp Eviction Web  
Occupied Frankfurt Tangled Web Tangled  
Camp Eviction Web  
Occupied

The dark knight of Nowheristan The dark  
knight of Nowheristan The dark  
knight of Nowheristan The dark  
knight of Nowheristan The dark  
knight of Nowheristan The dark  
knight of Nowheristan The dark  
knight of Nowheristan

Festival preview President Man  
Pat Burtschers Obama protests  
Patopotamoose Pleasance Comes to Orem tax  
Courtyard Festival TMCC increase  
preview Pat Next Man protests  
Burtschers Patopotamoose Week Orem tax increase  
Pleasance Courtyard President Man protests  
Festival preview Obama Orem tax increase  
Pat Comes to Man protests  
Burtschers TMCC Orem tax increase  
Patopotamoose Next Man protests  
Pleasance Week Orem tax increase  
Courtyard President Man protests

Create a typeface by typing a word

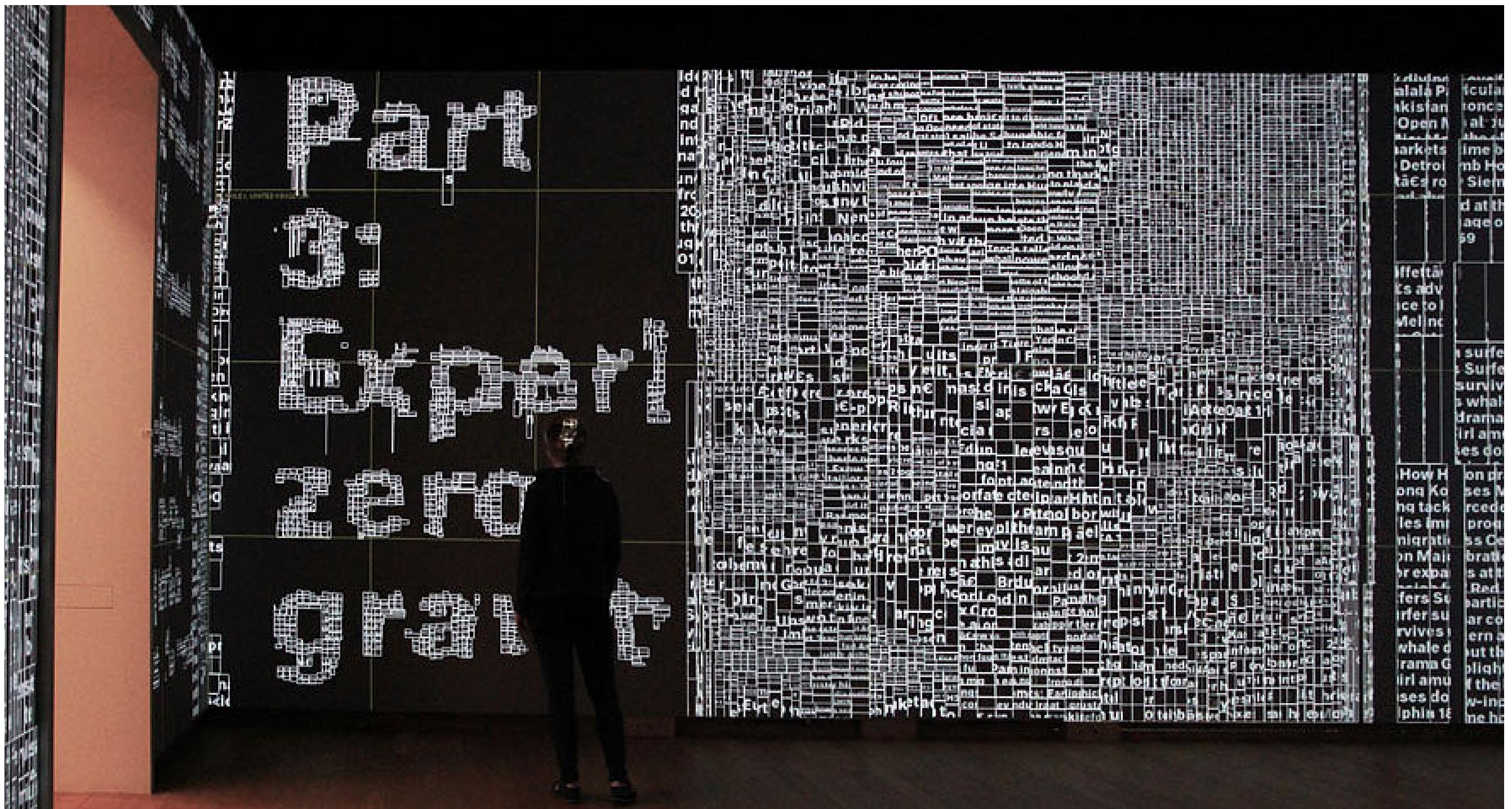
utopia

More options

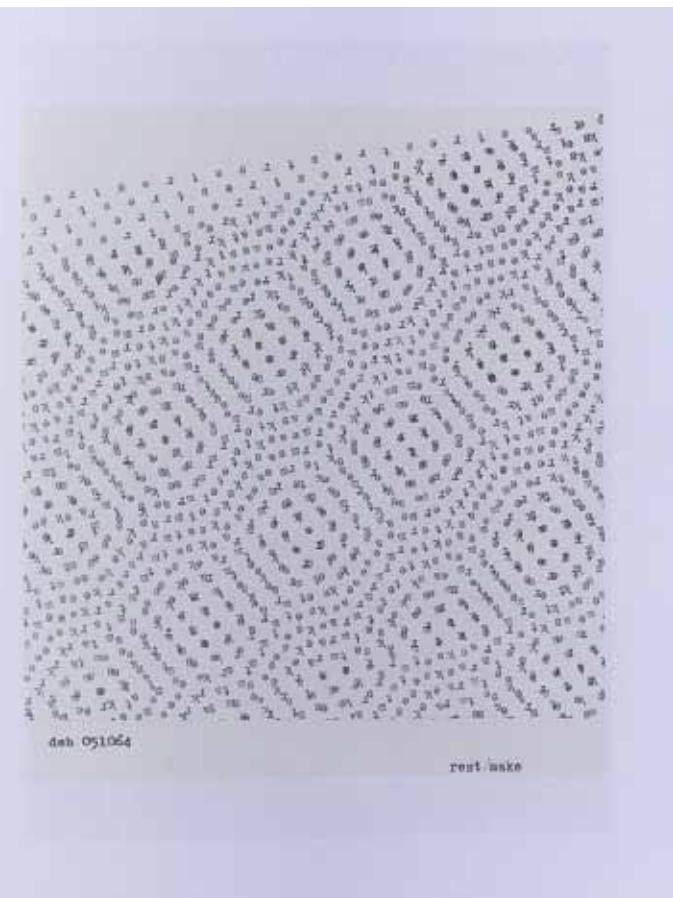
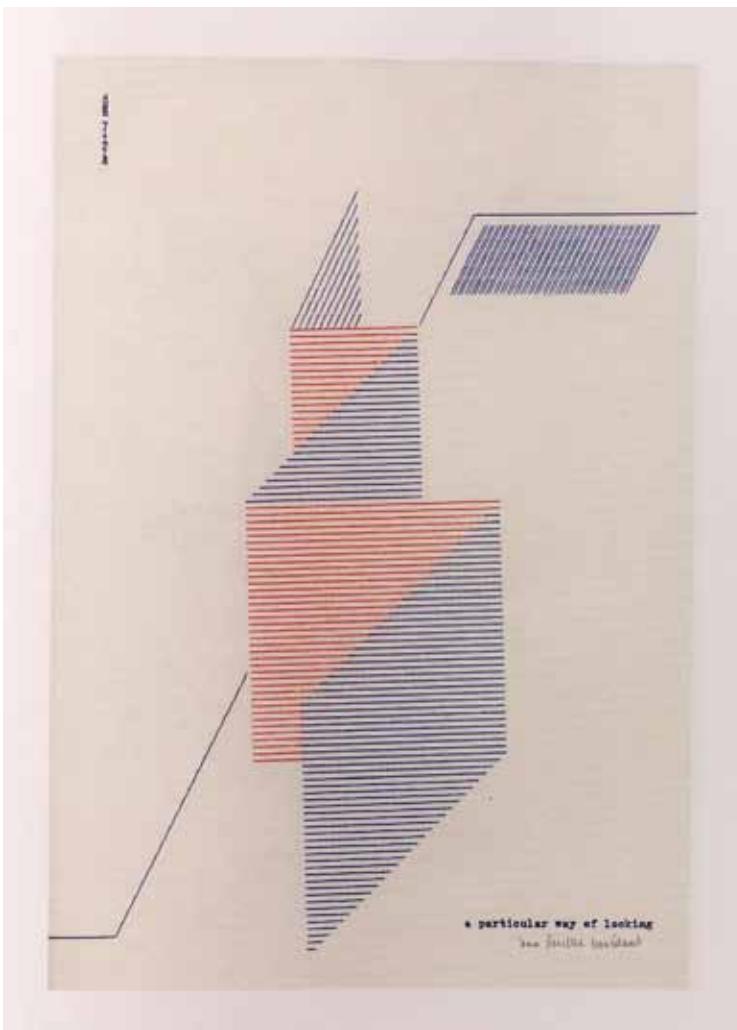
CREATE

About the project

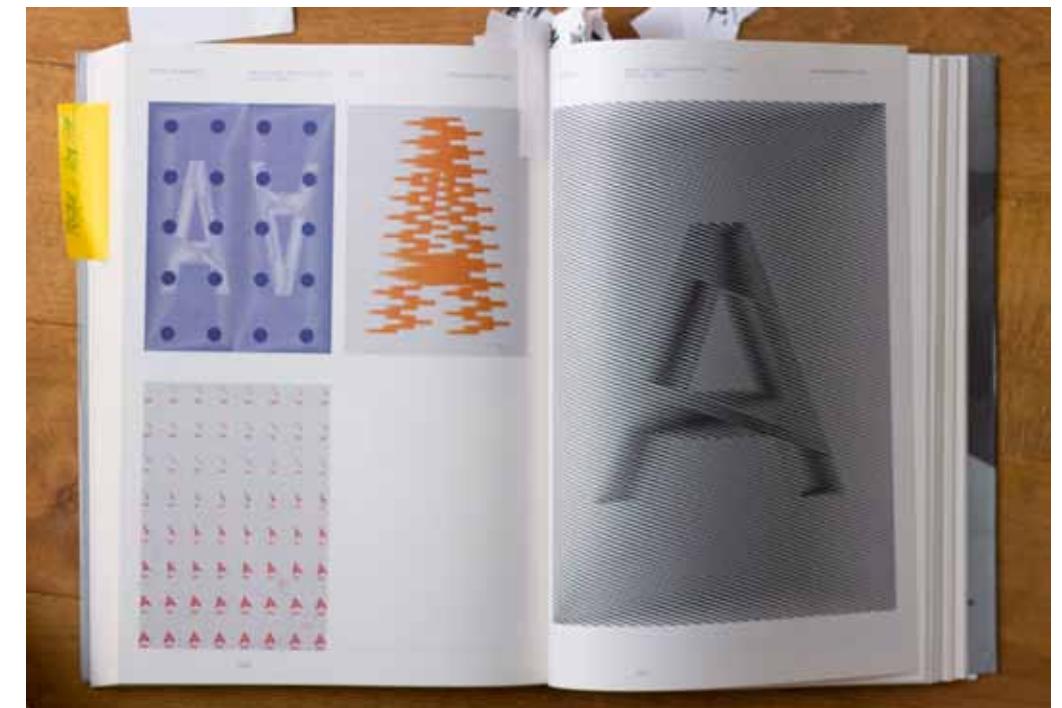


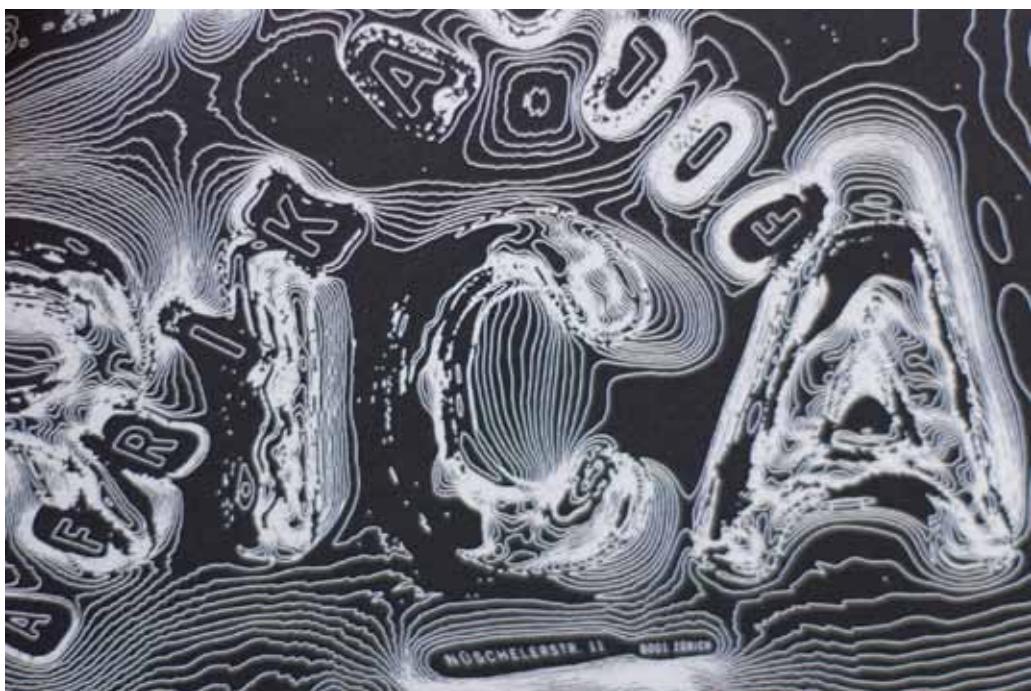


Type Dynamics. Exhibition Installation. Lust 2014



Concrete Poetry. Dom Sylvester Houédard.



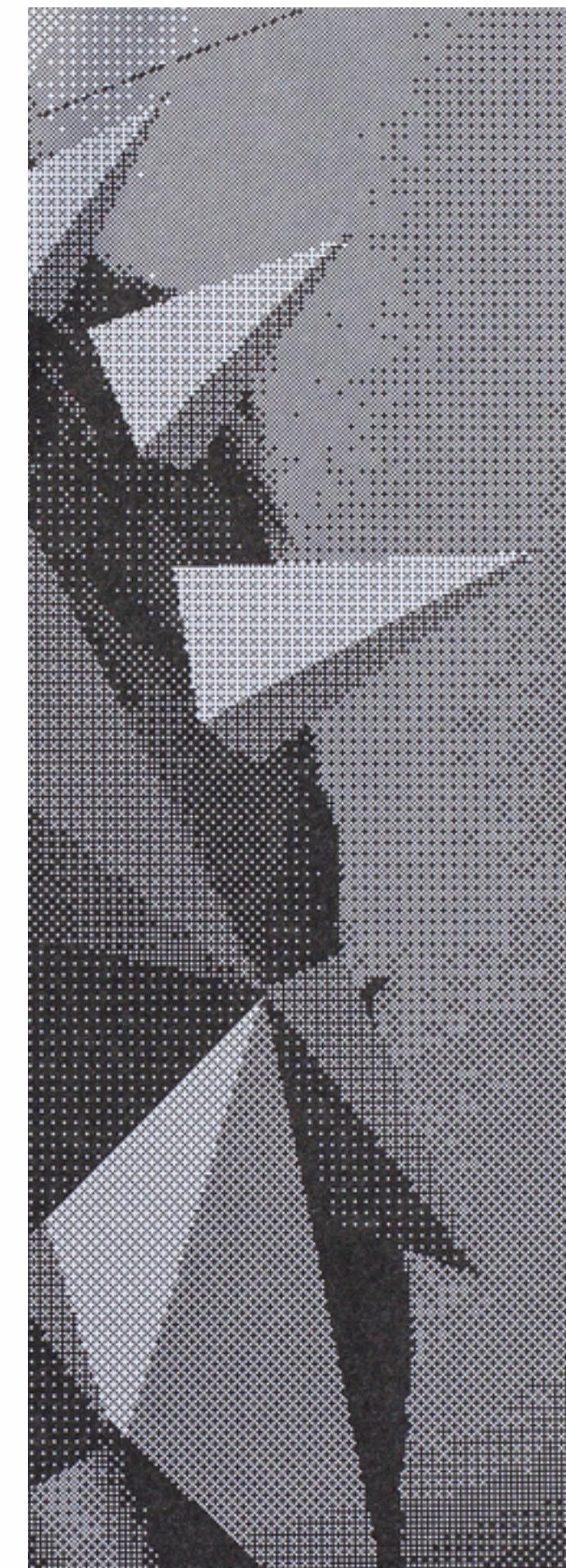
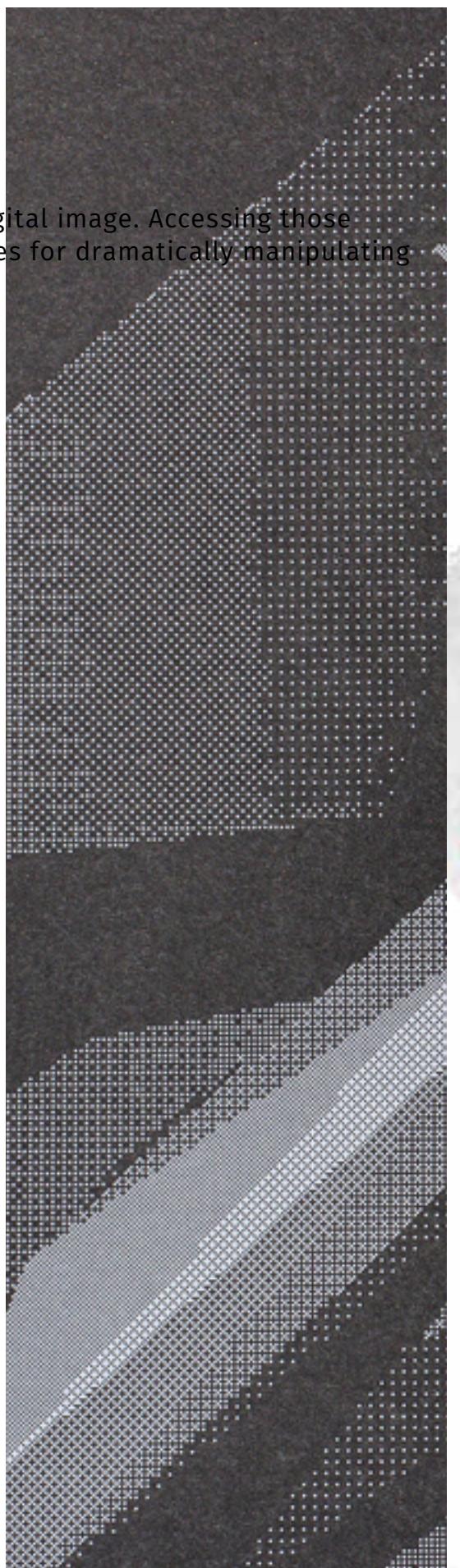
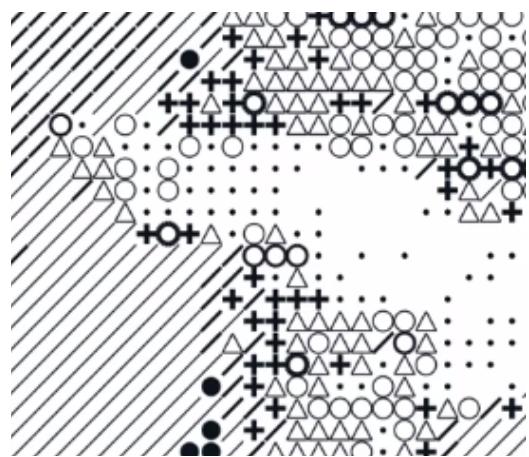


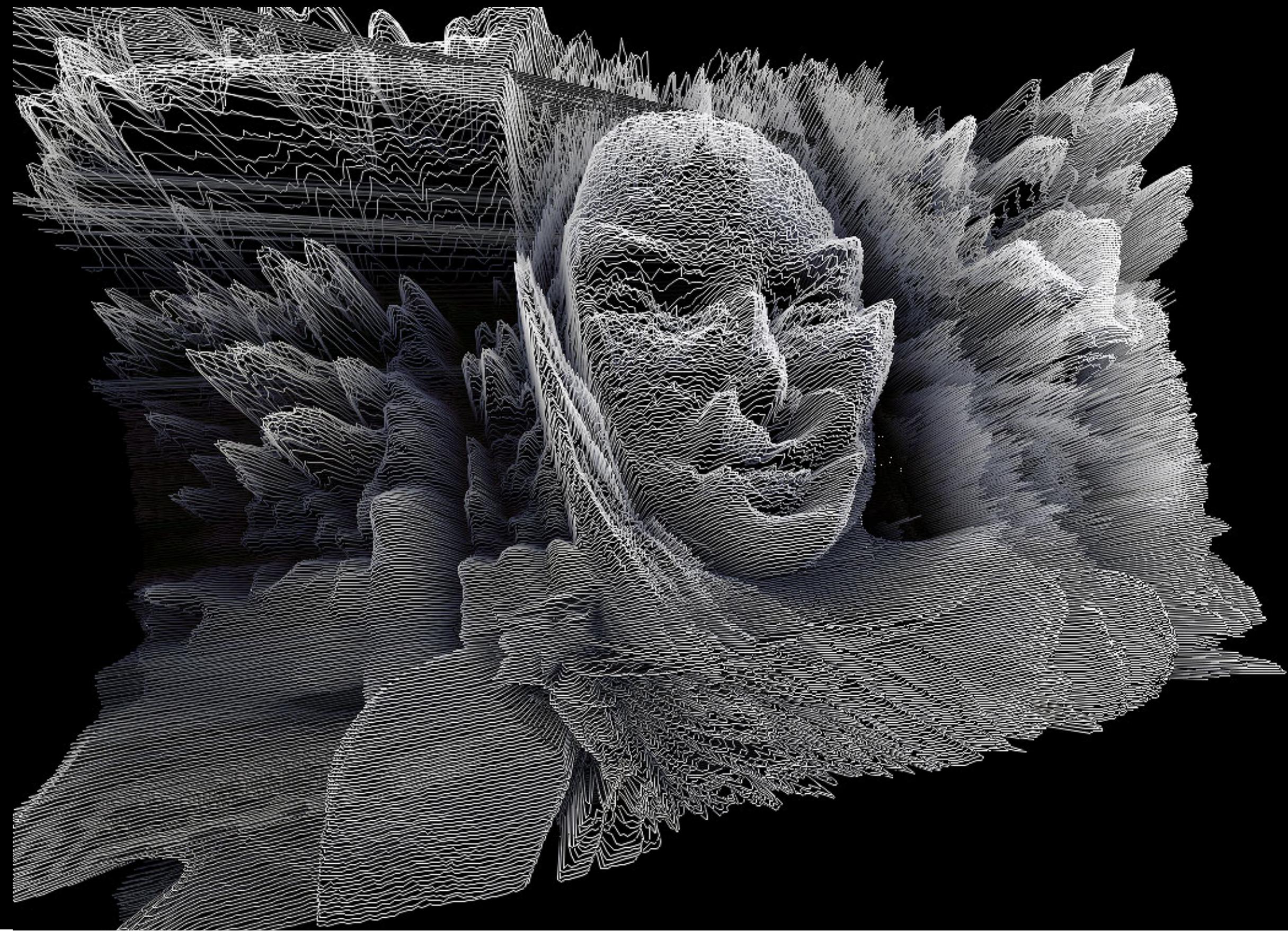
[Posters by Michael Schurman & Ralph Schraivogel](#)

# IMAGE

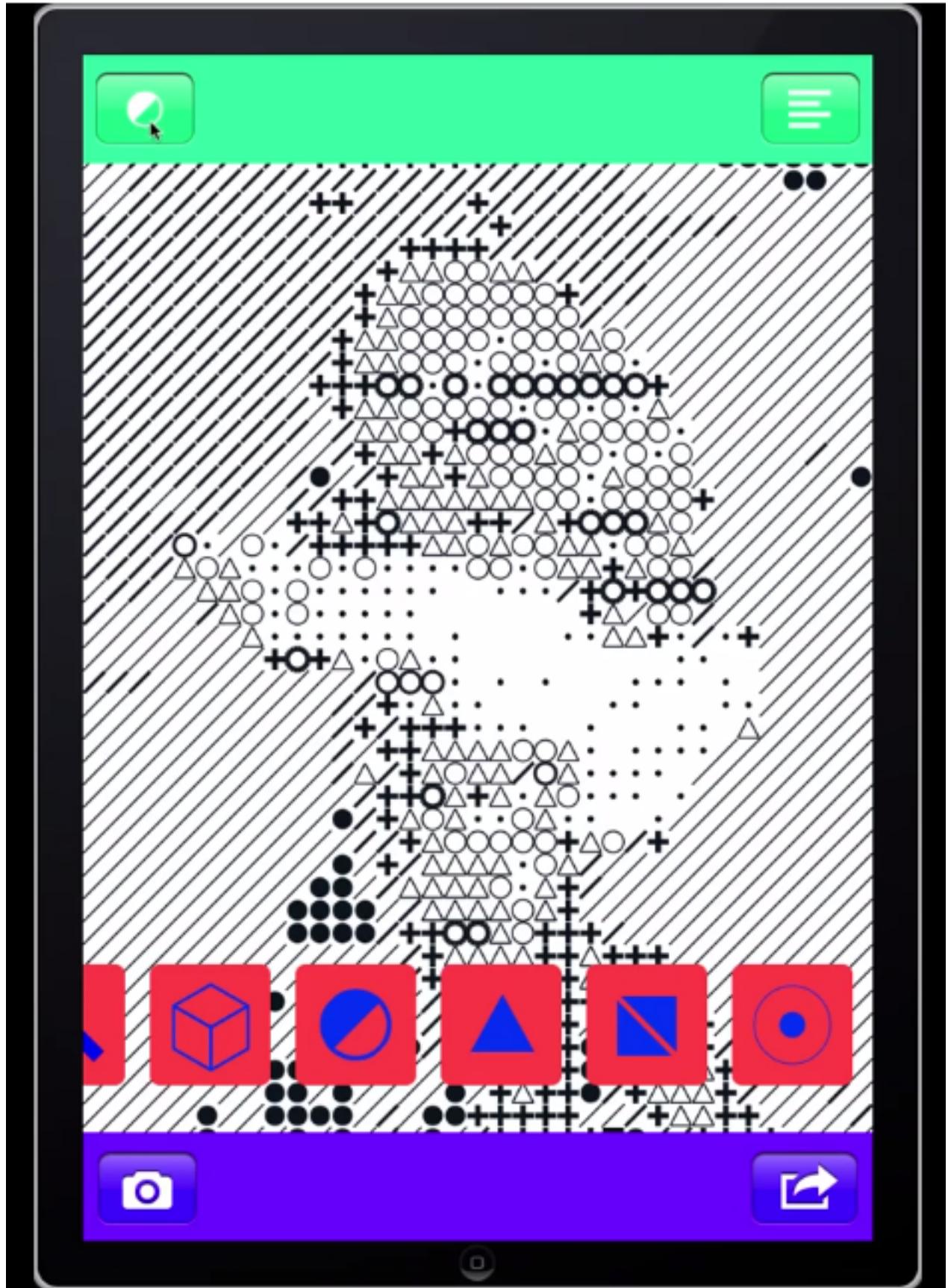
## Pixels

Pixels are the basic units of any digital image. Accessing those pixels gives us powerful possibilities for dramatically manipulating and modifying the image.

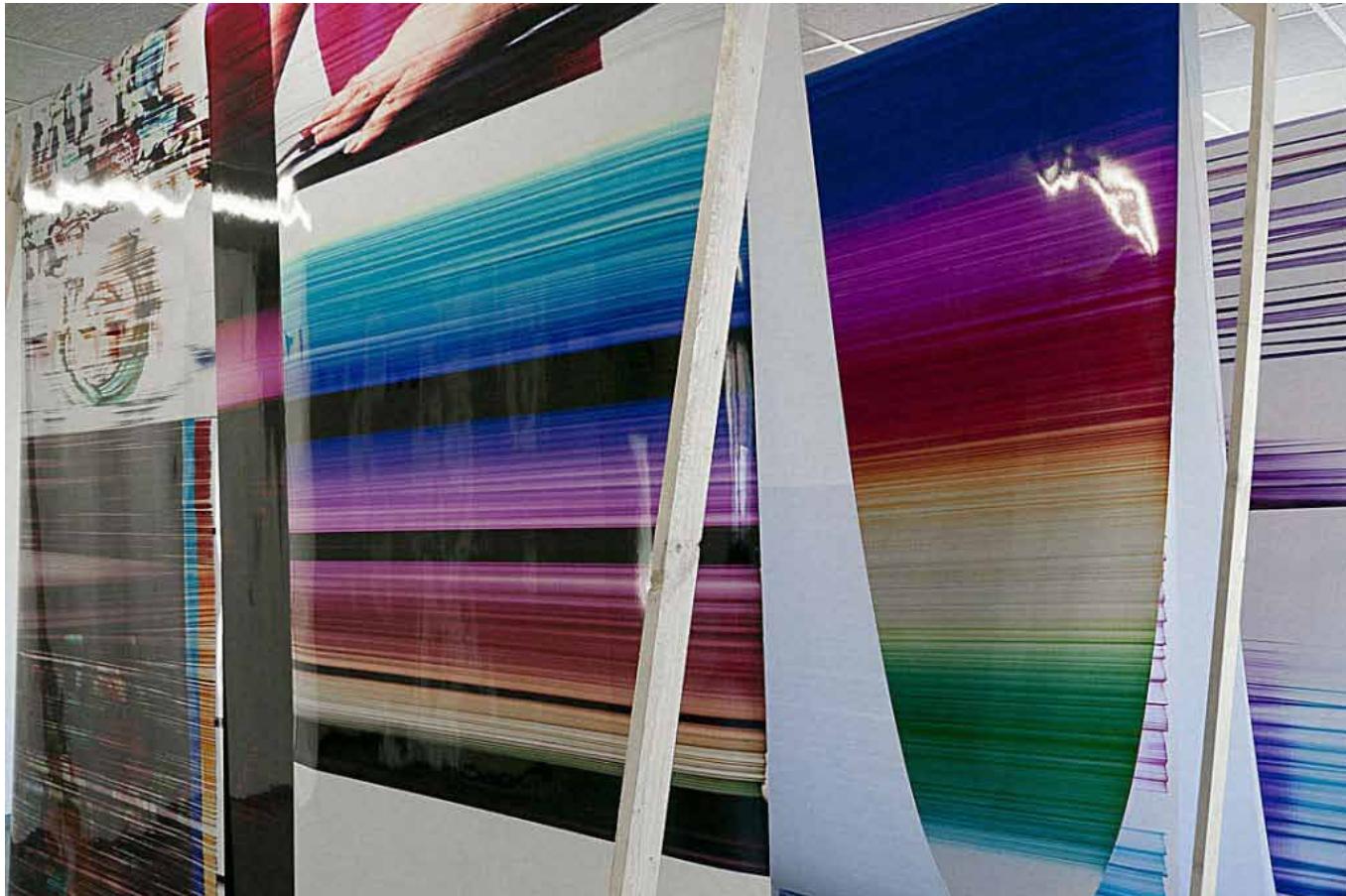




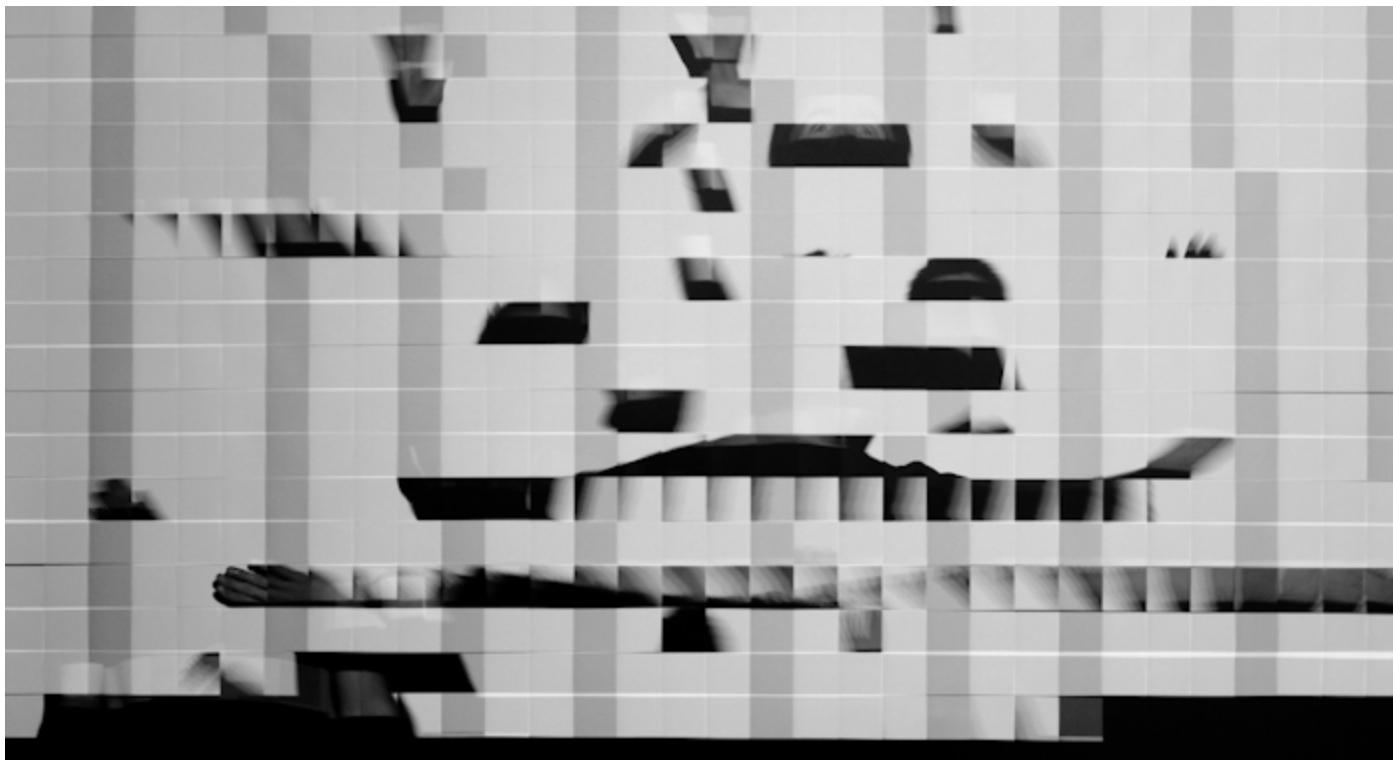
[2D & Half profile. Research Image for S.A.M. website](#)



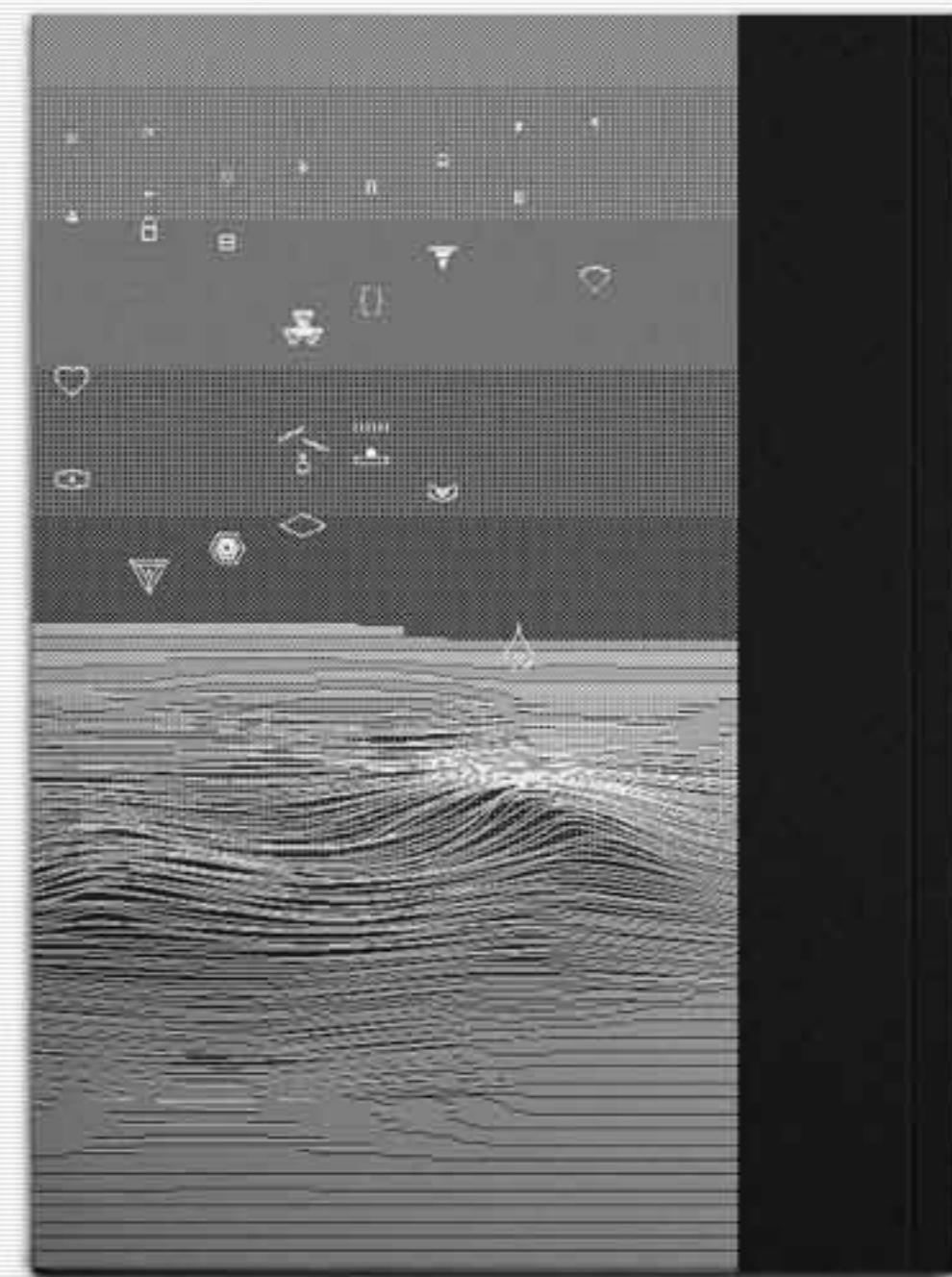
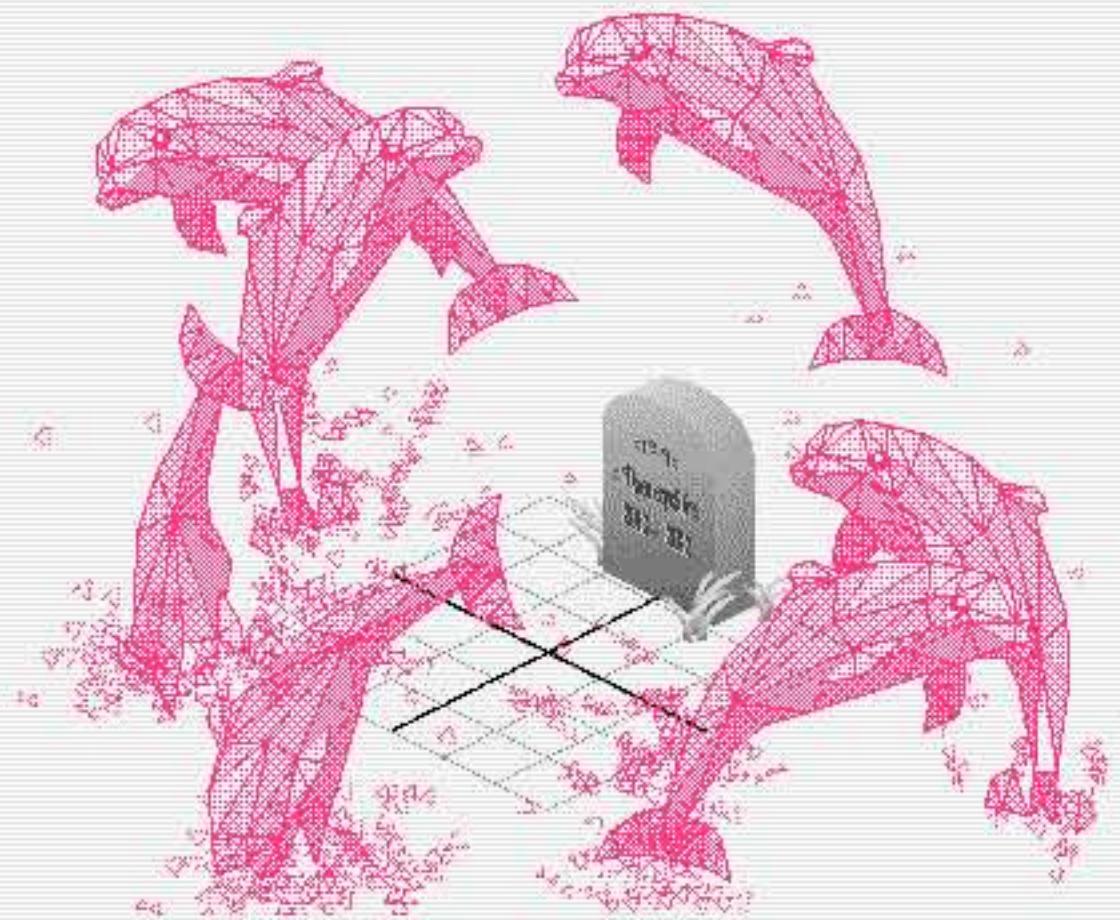
[Pixel. Rainer Kohleberger](#)



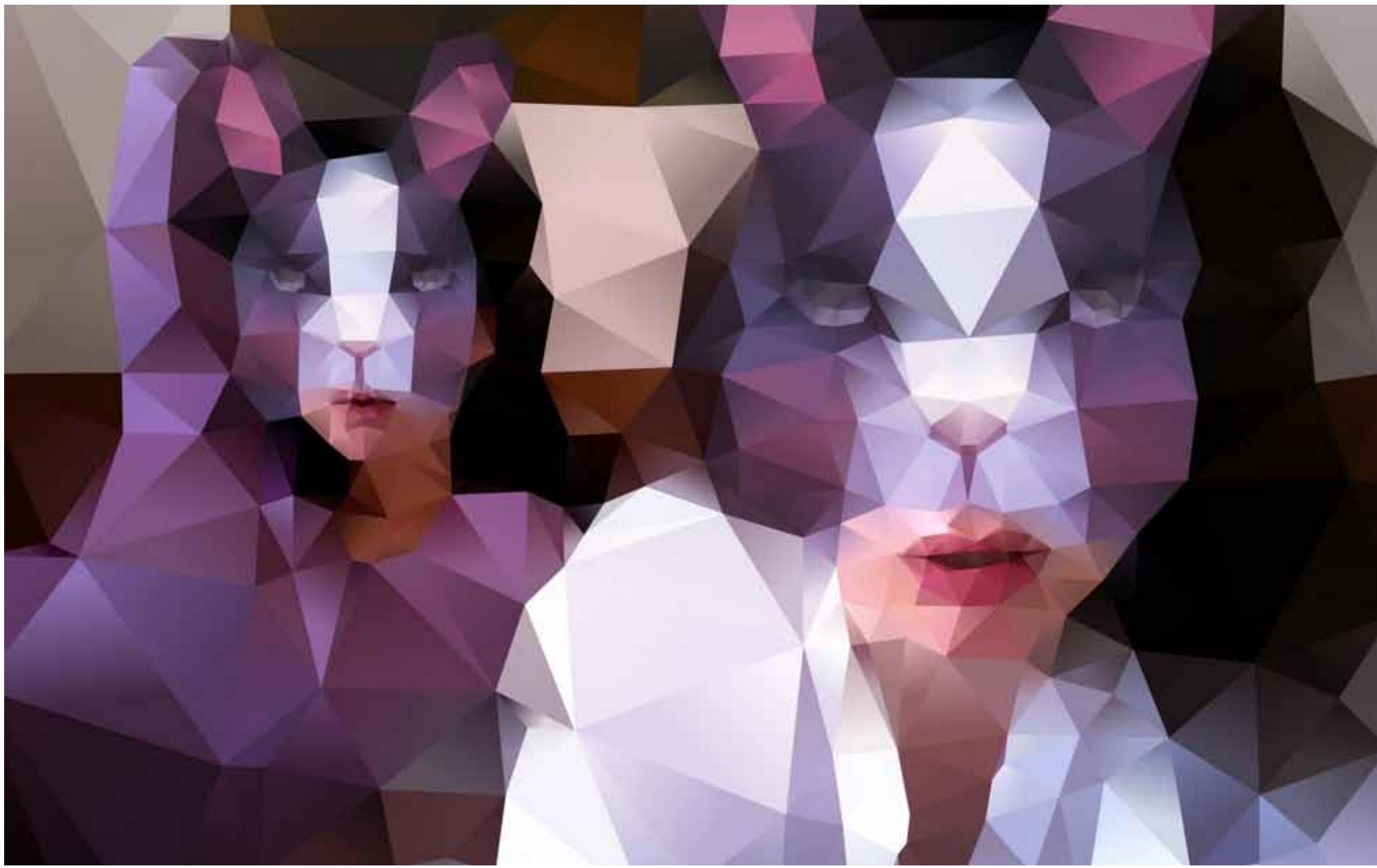
[Calibration. Eno Henza](#)



[Generative Photography](#)



N 0 0 2



[Delauny Raster. Studio Moniker](#)

# RANDOMNESS

## Welcome to the Unexpected

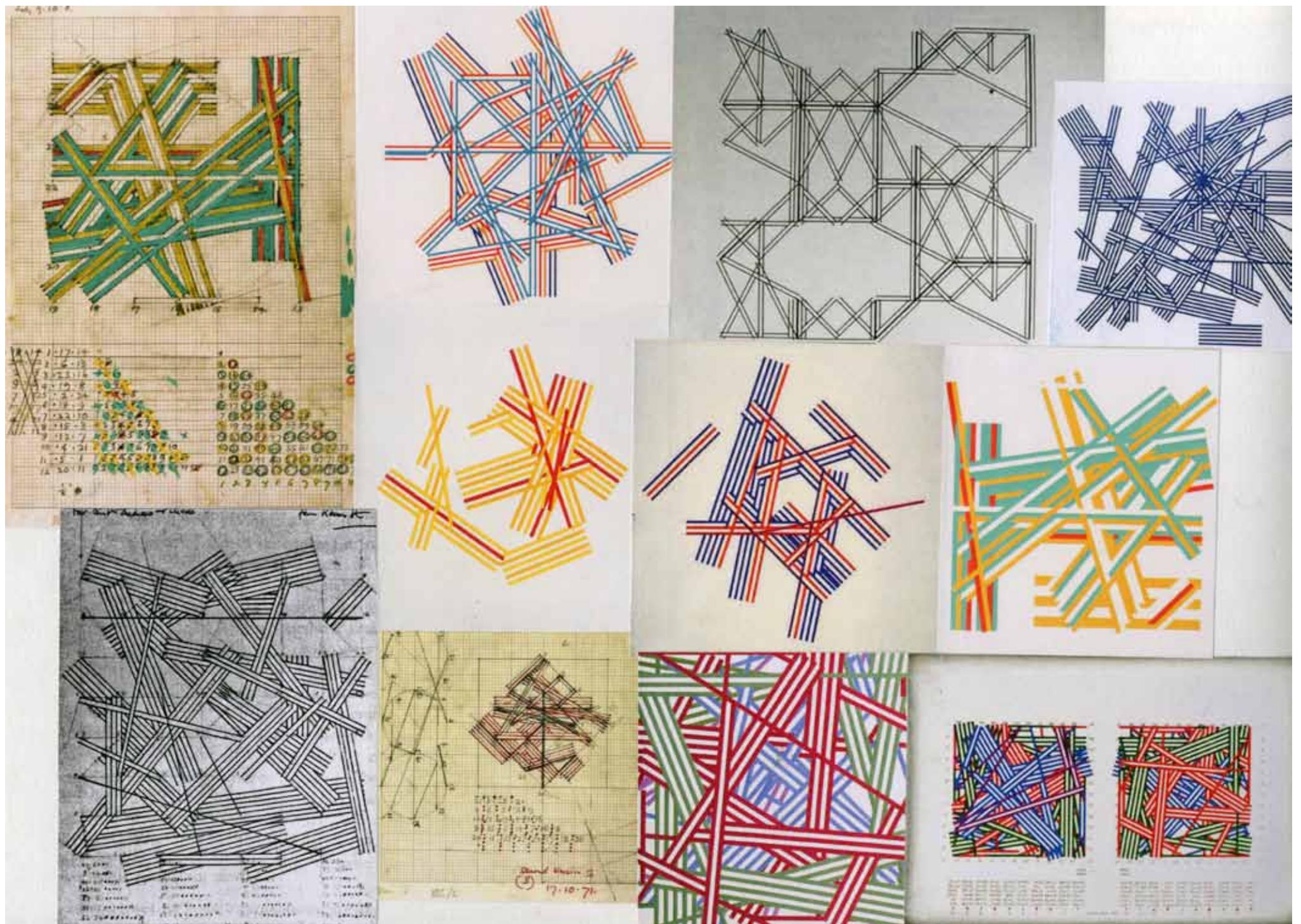
Chance operations in art have a history well before the computer and is an interesting read for those who are willing. It takes on various roles for the artist to open up the creative process and loosen it from the shackles of absolute control.

Randomness is a slippery concept in general yet attempts to model & measure, usually statistically, a possible future outcome. In the realm of computing, such strategies are called pseudo-random generators and are often implemented to give a more 'natural' or 'organic' aesthetic feel.

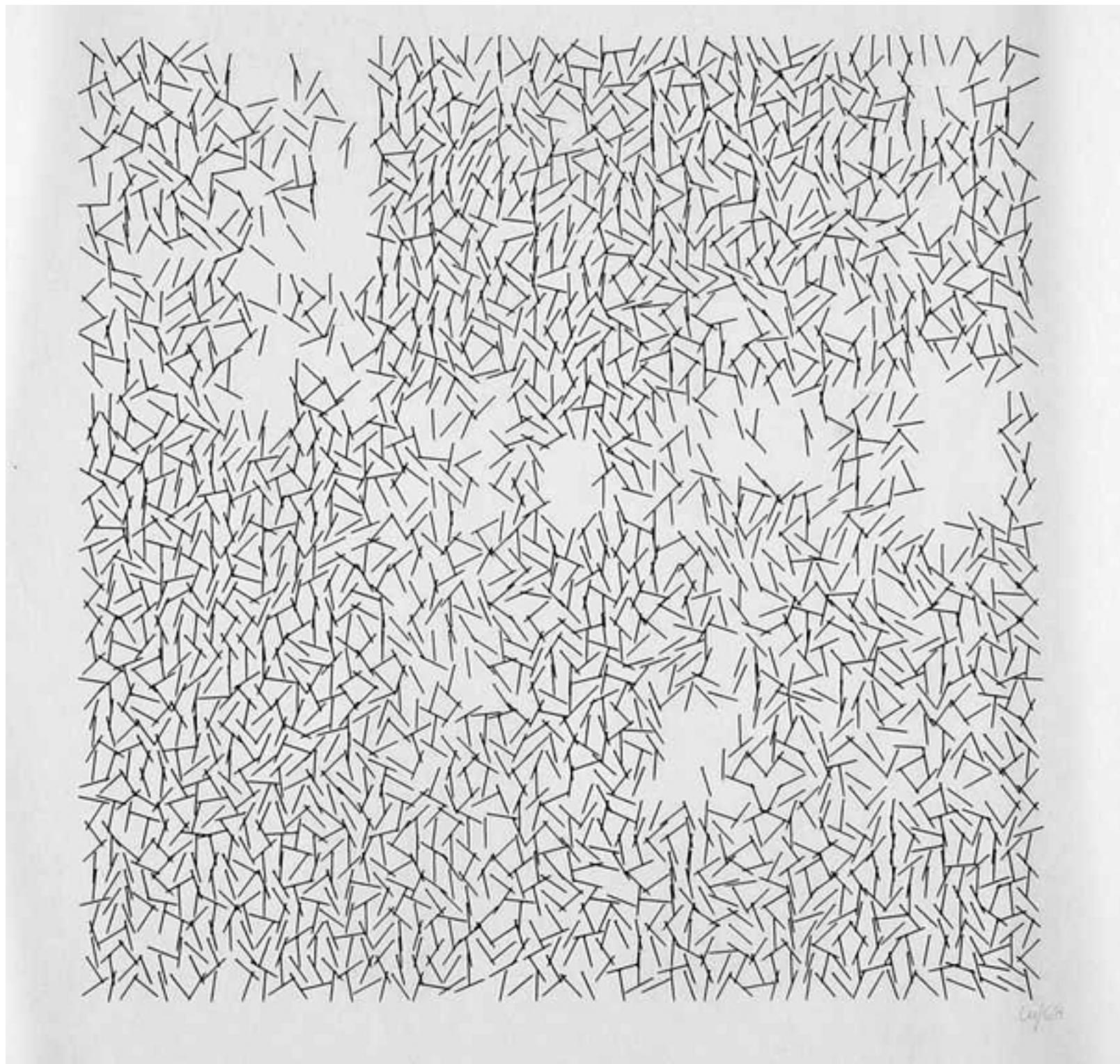
In Frieder Nake's image at right, we have one of the very first computer generated images to be exhibited in the art world. The piece is based on a random generator that determines placement, length, repetition and orientation of lines.



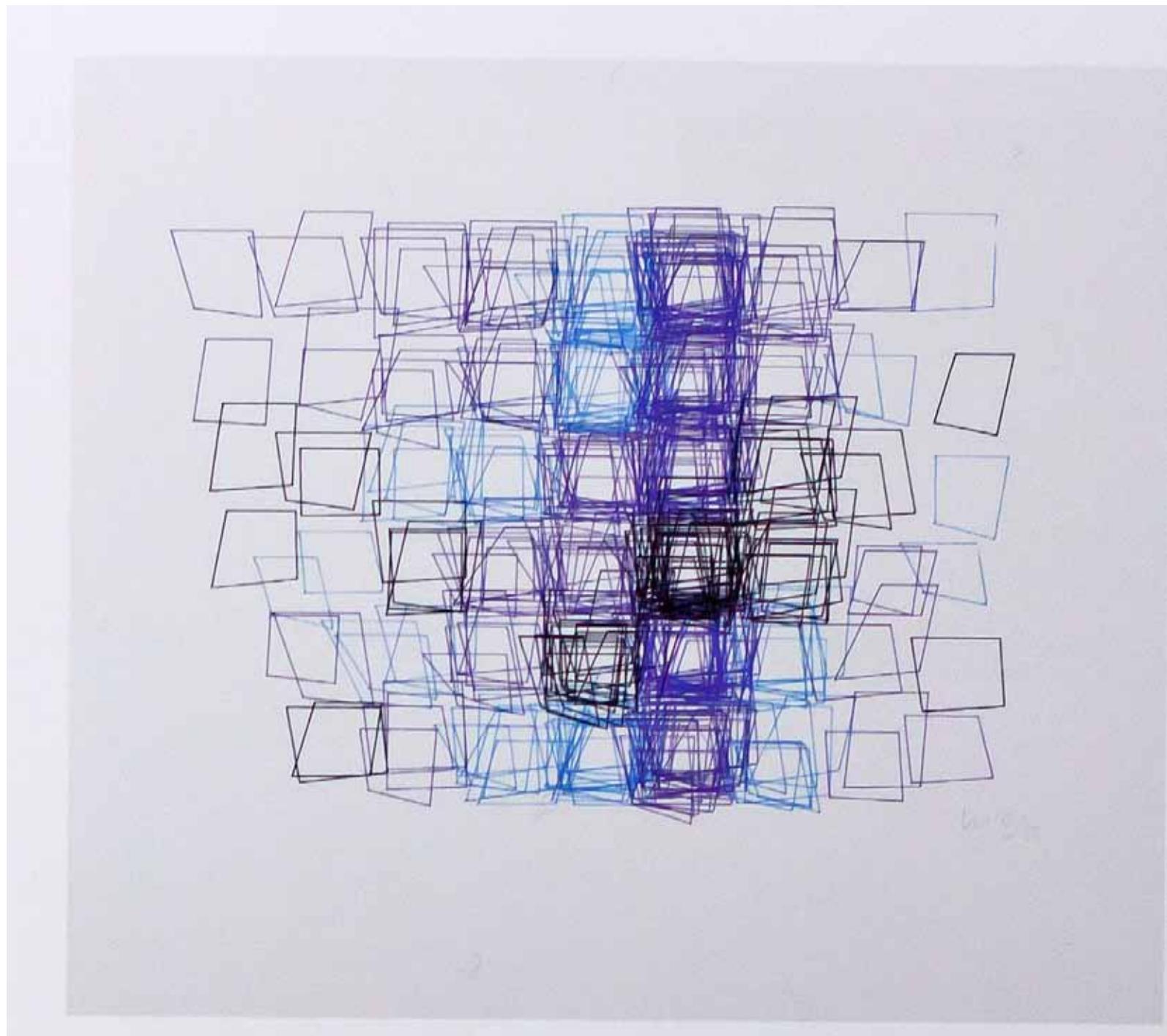
NRKE/EPSS/264



Chance & Order Series. Kenneth Martin



[Interruptions. Vera Molnar](#)



[Structures Quadrilatères. Vera Molnar, 1988](#)

# **About**

an on going document

Further projects and images will be added to this document.