

# Kreatives Arbeiten mit dem Computer

Vernissage Kunst & Computer, 18.10.16

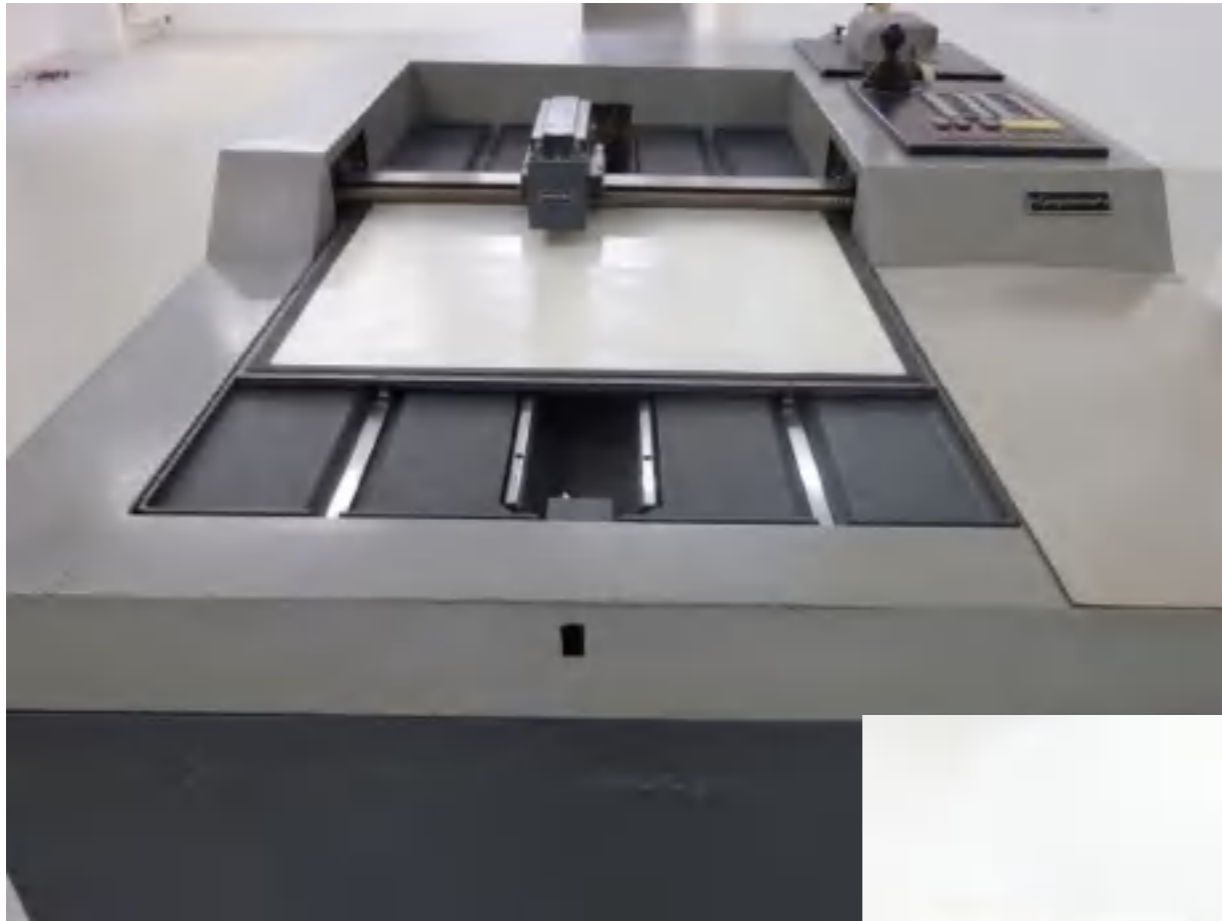
Joachim Wedekind, Tübingen

- **Computerkunst**
- **Werkzeuge für die  
Medienkunst**

„Als Computerkunstwerk wird jedes ästhetische Gebilde verstanden, das auf Grund von logischen oder numerischen Umsetzungen gegebener Daten mit Hilfe elektronischer Automaten entstand.“

Herbert W. Franke, 1971

Computer SEL ER56

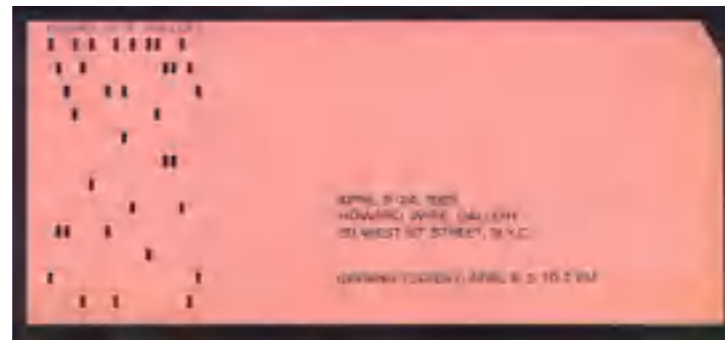


Plotter Zuse Graphomat

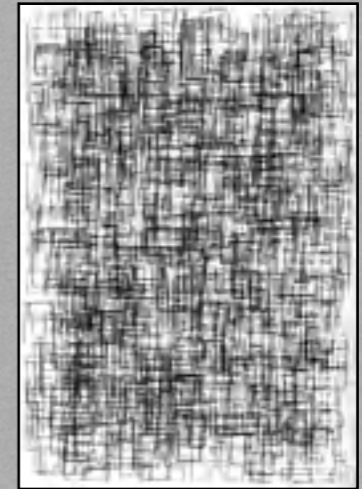


# Studiengalerie TH Stuttgart, 5.-19.2.1965

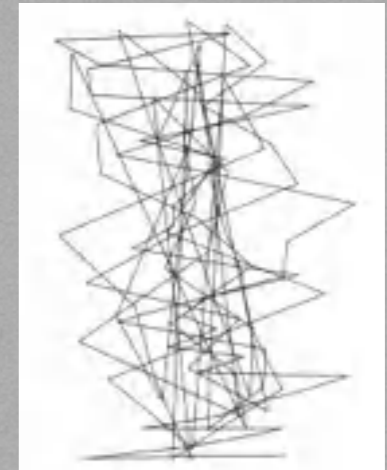
# Howard Wise Gallery, New York, 6.-24.4.1965



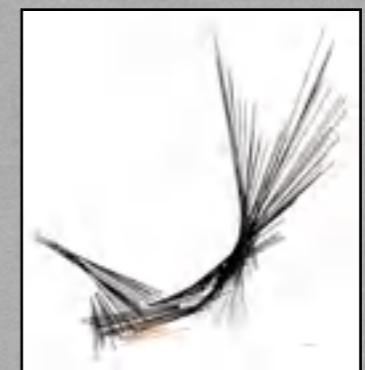
# Buchhandlung Niedlich Stuttgart, 5.-26.11.1965



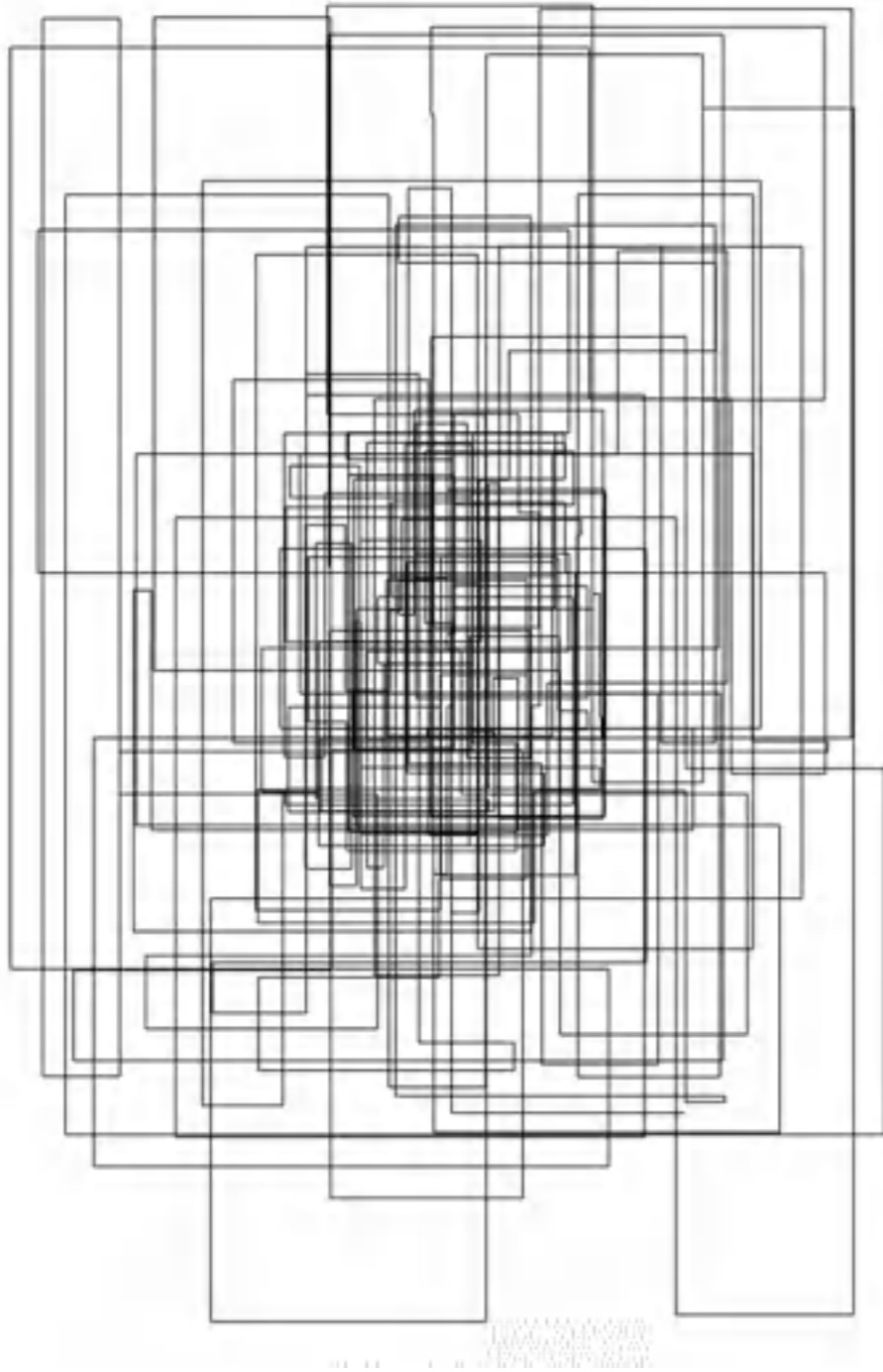
Georg Nees



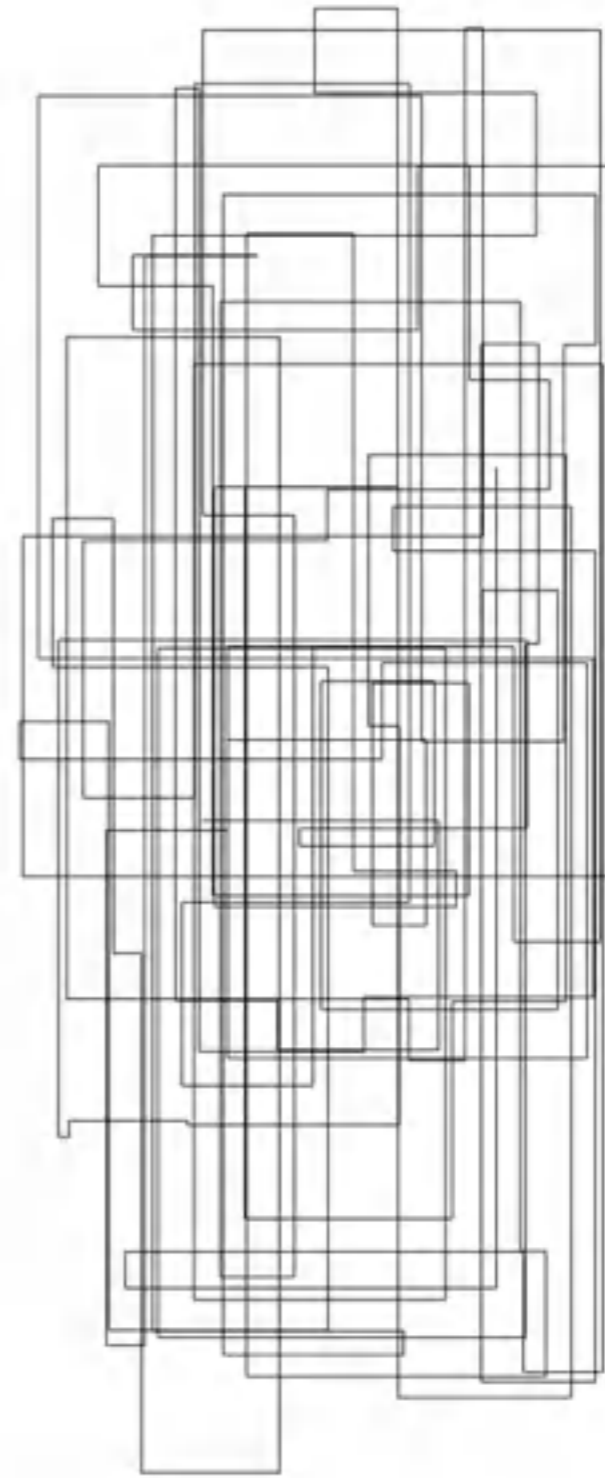
Michael Noll



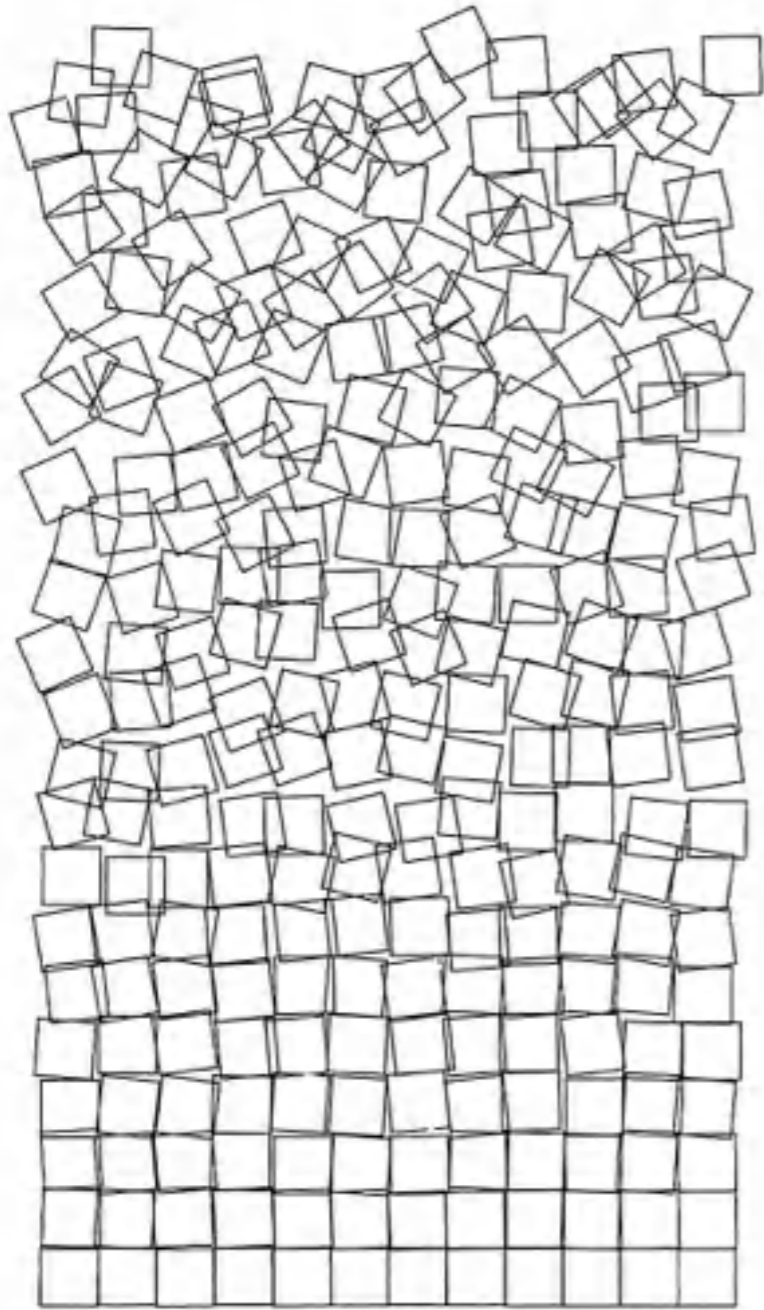
Frieder Nake



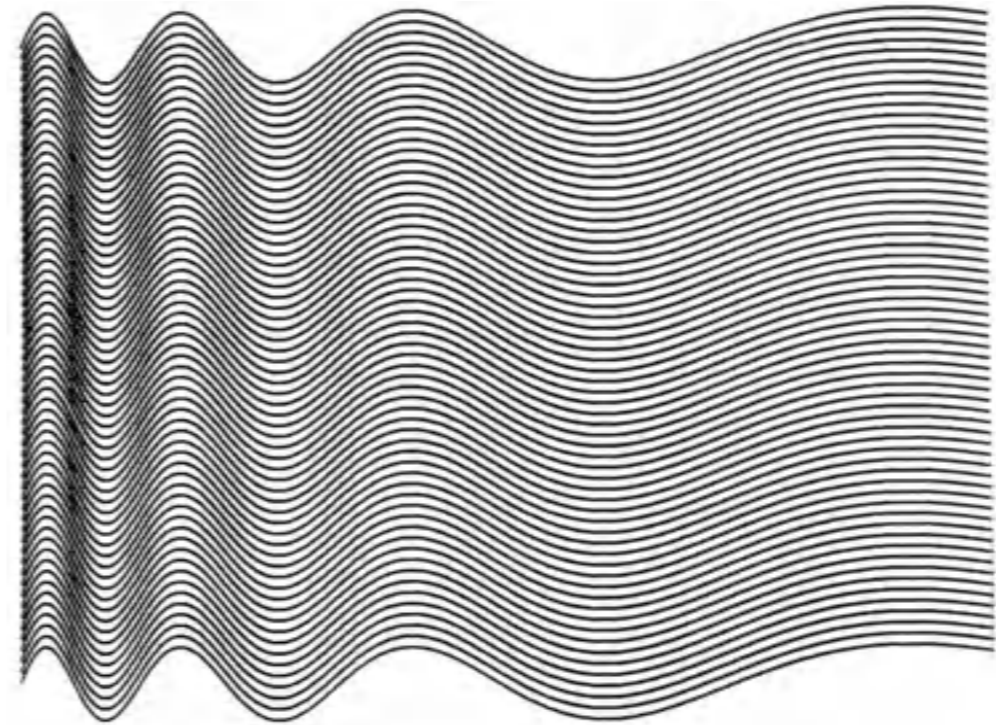
Georg Nees: achsenparallele Irrwege (1965)



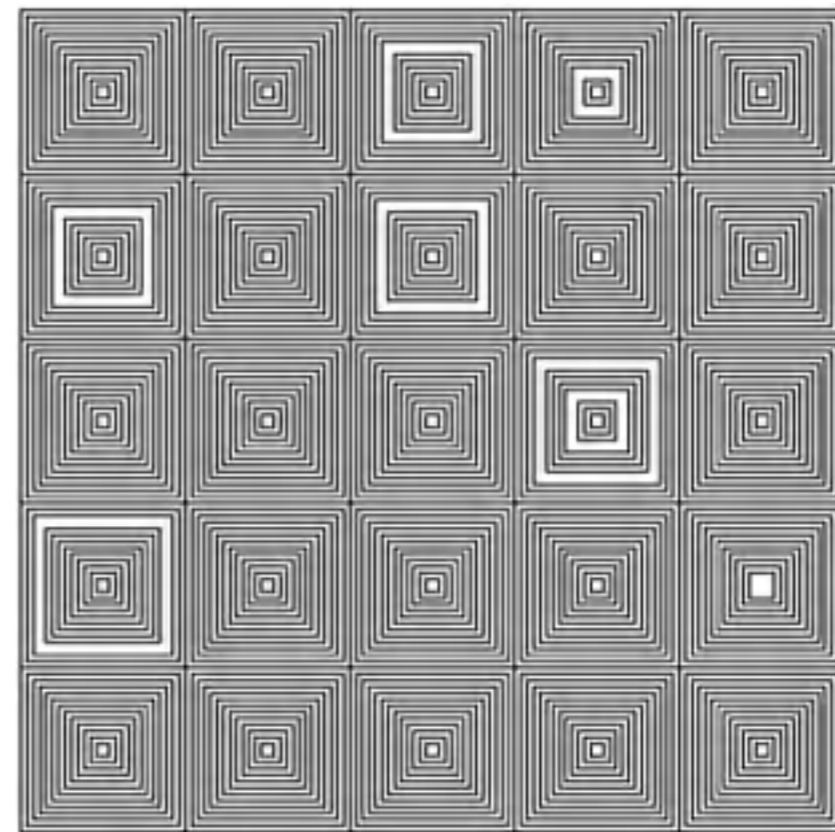
Michael Noll: Vertical-Horizontal (1964)



Georg Nees: Schotter, 1969



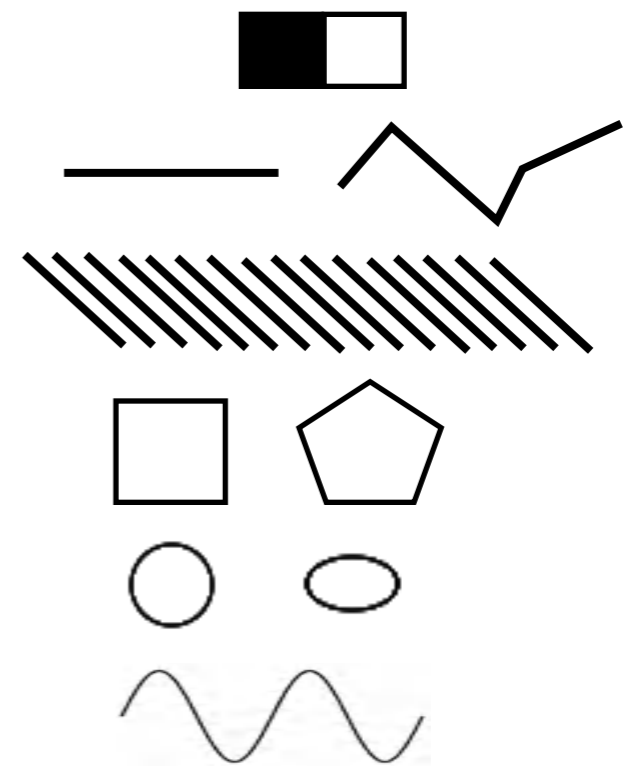
Michael Noll: Ninety Parallel Sinusoids, 1964



Vera Molnar: Unordnung (250 Quadrate, 4 %), 1980

# Merkmale (I):

- Schwarz/Weiß-Ausgabe
- Linien und Linienzüge
- Linienschraffuren
- Quadrate, Vielecke
- Kreise, Ellipsen
- (Sinus) Kurven

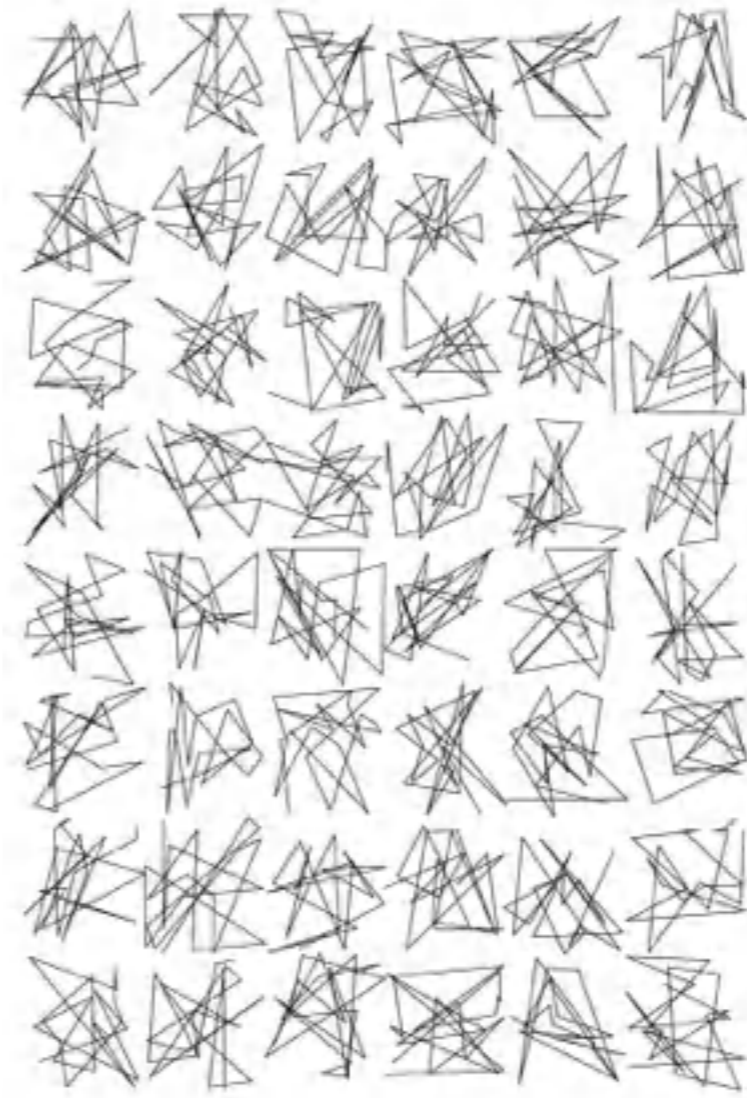
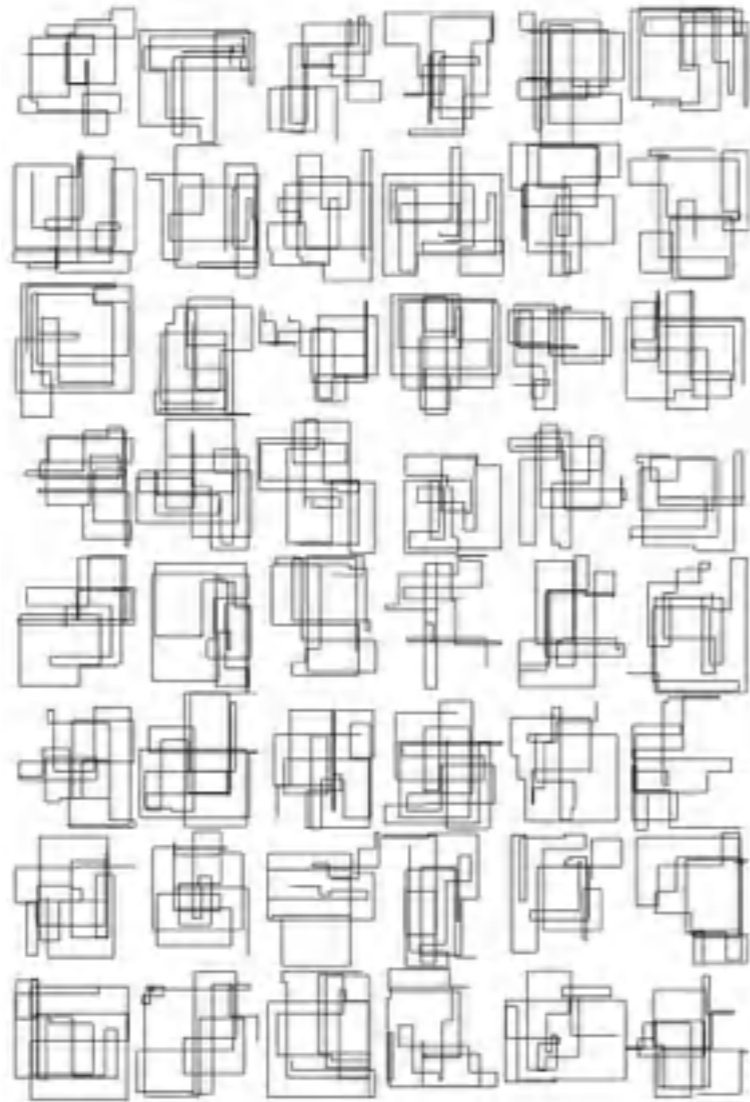




## Merkmale (II):

- Wiederholung
- Variation
- Zufall





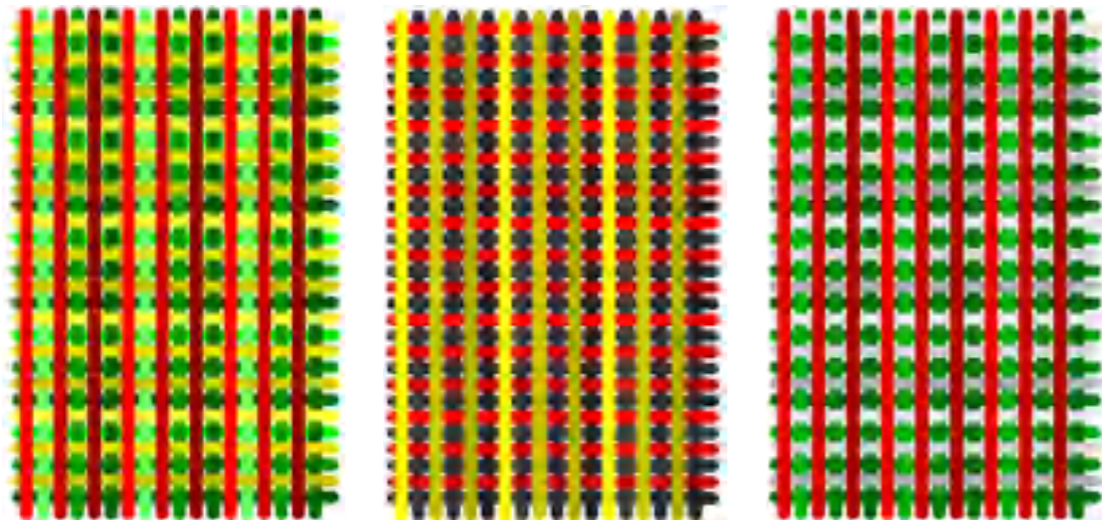
Hommage à Georg Nees: Polygonfelder

Wiederholung, Variation, gleichverteilte Zufallszahlen

# Merkmale (III):

- Farben
- Flächen
- Ausgabe Bildschirm
- Animation
- Interaktion  
(Eingabe, Steuerung)
- Zeichenroboter

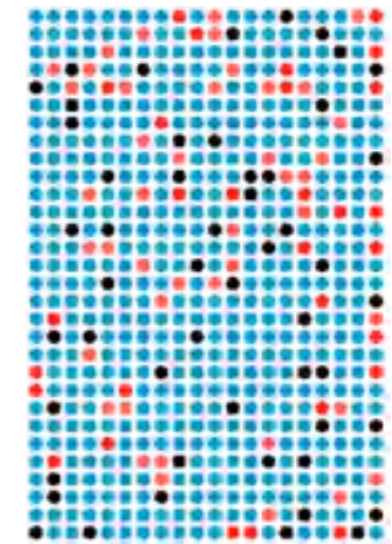




Variation Flaggenfarben: Äthiopien, Deutschland, Italien  
 Wiederholung, Variation



Sortierte Punkte  
 Wiederholung, Variation, gleichverteilte  
 Zufallszahlen



Hommage à Molnar

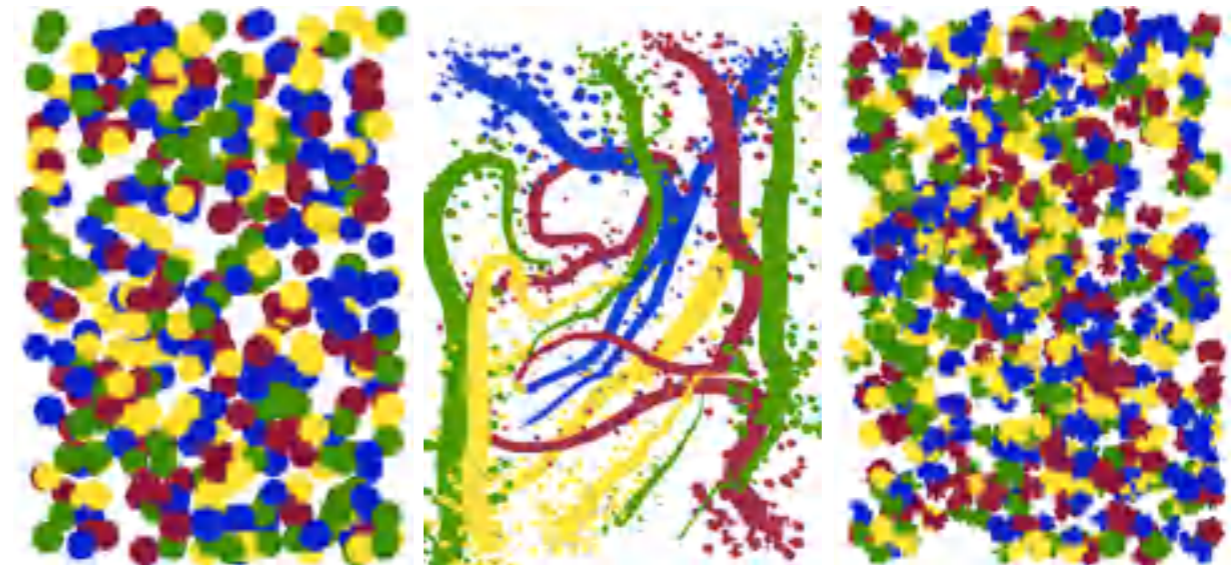


Farbfeldvariationen



Rasterstrukturen

Wiederholung, Variation, Zufallsverteilungen



Hommage à Jackson Pollock

Wiederholung, Variation, Zufall und Interaktion

# Algorithmische Kunst (I):

Ein Algorithmus ist eine eindeutige Abfolge von Handlungsvorschriften zur Lösung eines Problems.

Ein Programm ist die Formulierung eines Algorithmus in einer Programmiersprache.

# Algorithmische Kunst (II):

„Algorithmisch ist das, was hinter dem Bild steckt, die Unterfläche des Bildes.“

(S. Grabowski, 2012).

„The idea becomes the machine that makes the art.“

(Sol LeWitt, 1967)

Four sets, each containing four sections divided into four squares of different values

- I) all four corners are the same, all four centers are the same
- II) all four corners are different, all four centers are different.

I

1	2	3	1
3	4	4	2
2	4	4	3
1	3	2	1

The 2 systems used here are the first of 24 in each set (There are 24 variations of 1234) The 4 squares in each set are the same. The system of changing the arrangement differs

II

1	2	1	3
3	4	2	4
3	1	3	4
4	2	1	2

Number systems may be eliminated or reduced in size. They illustrate the systems used

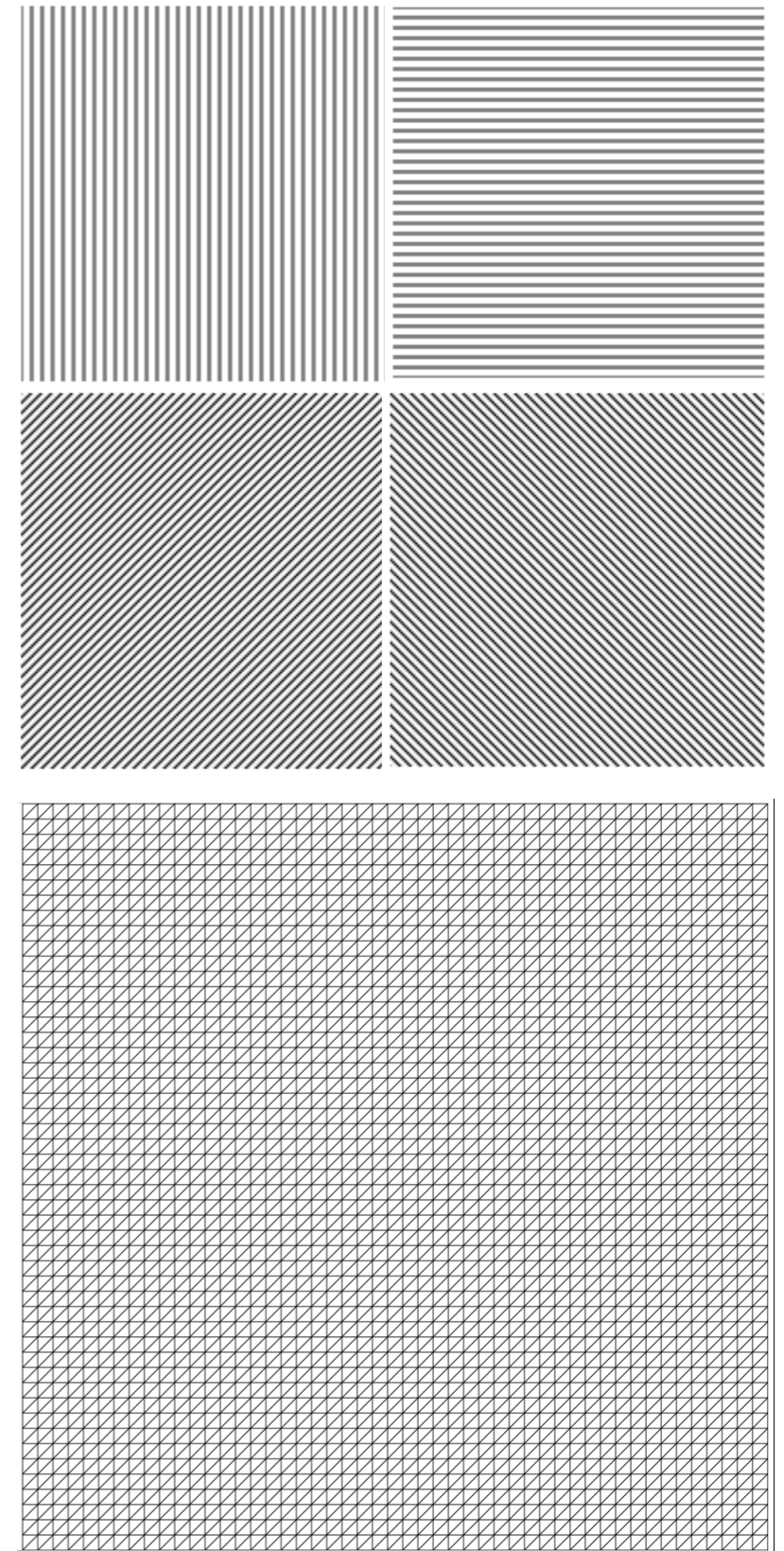
The key may be eliminated or reduced in size. They only show the method used



I in A) The method is as seen here 1) vertical lines 2) horizontal lines 3) diagonal lines left to right and 4) diagonal lines right to left

B) The method is of super-implication: 1) vertical 2) The same as in A) 3) in 1+2 4) in 1+2+3. While B is flat, C is total

- The four sets of wall markings may be used in the distribution of the exhibition
- The size should be dictated by the wall area available
- They may be arranged in a square (as here) or in a row
- $2 \times 2$  or  $3 \times 3$  depending on the space used.
- A very hard (or) pencil should be used and the lines should be made very lightly - so that they become part of the wall and do not destroy the wall plant
- The lines should be made as close together as possible. They do not have to be regular but should differ with each person who does them
- When exhibition is ended the work may be erased, washed off or painted over. If one wanted the same design it would be repeated in place specified



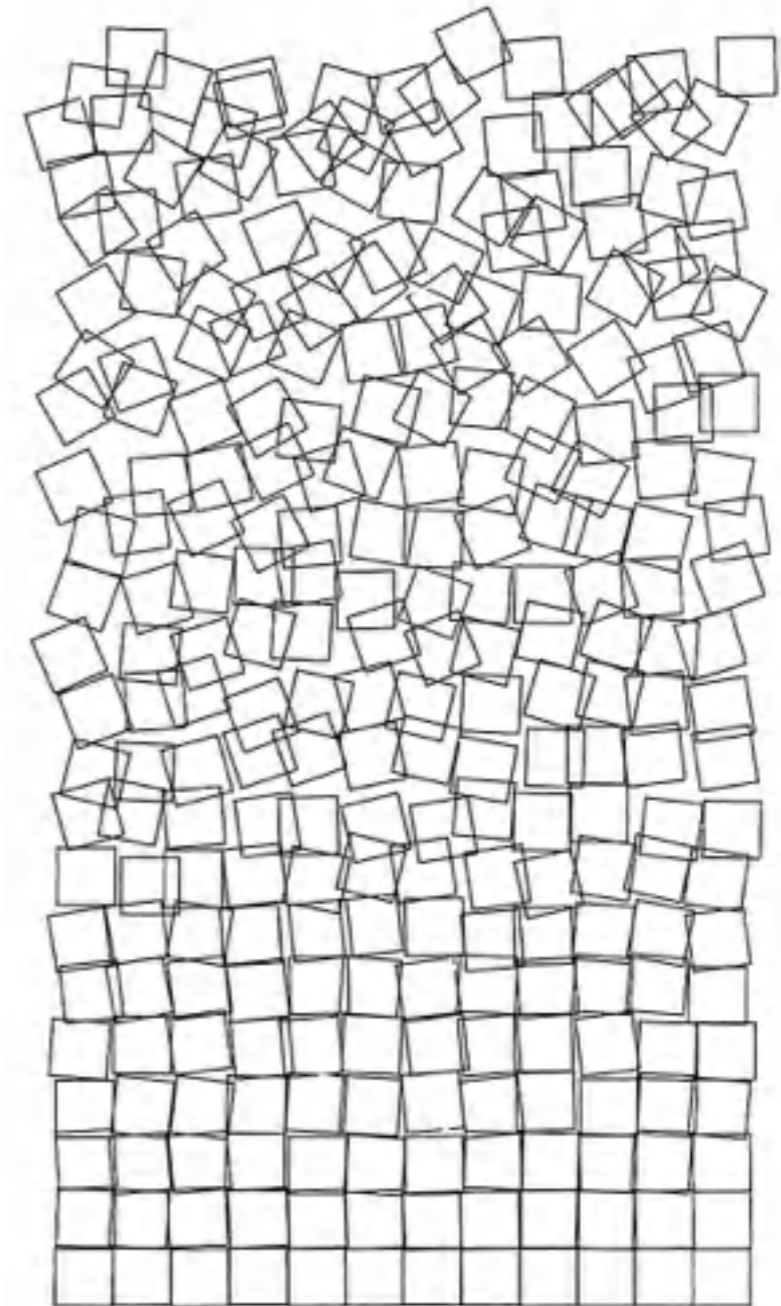
Sol LeWitt: Wall Markings, 1968

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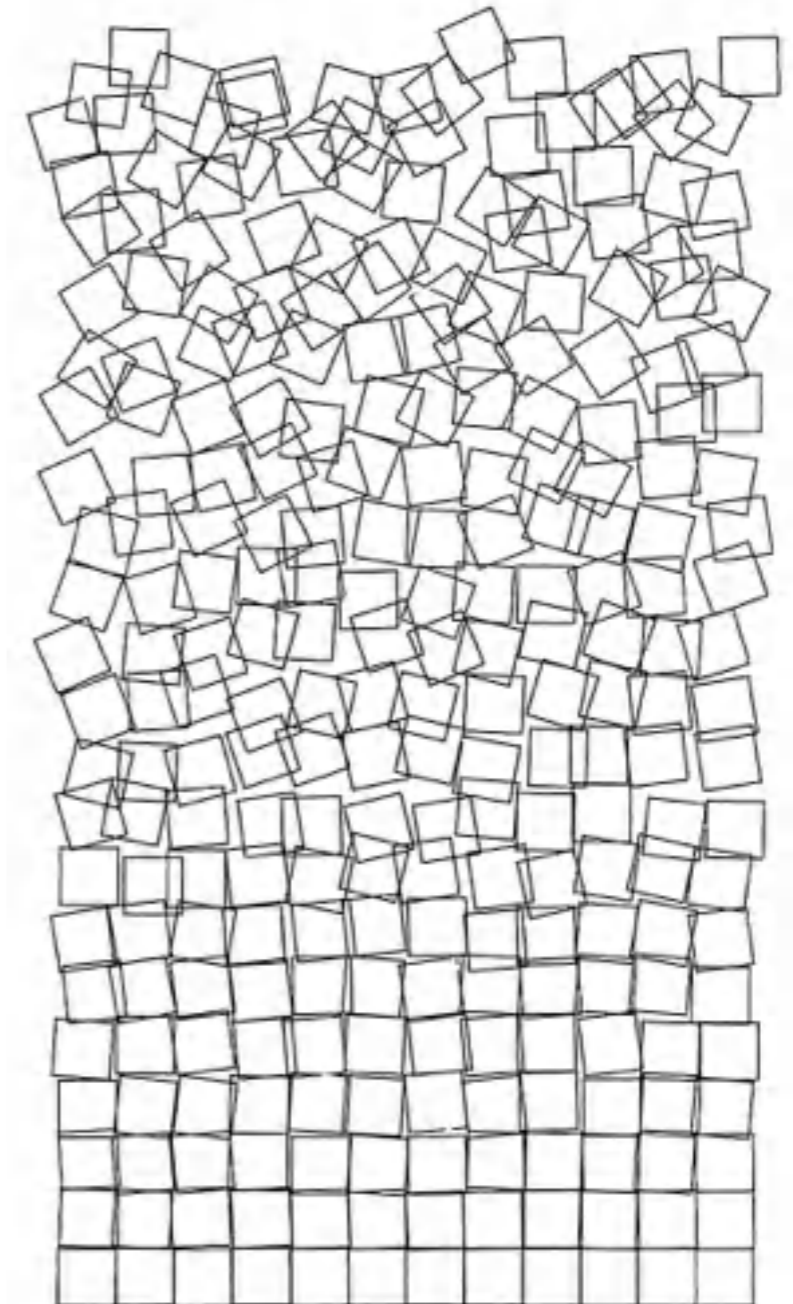
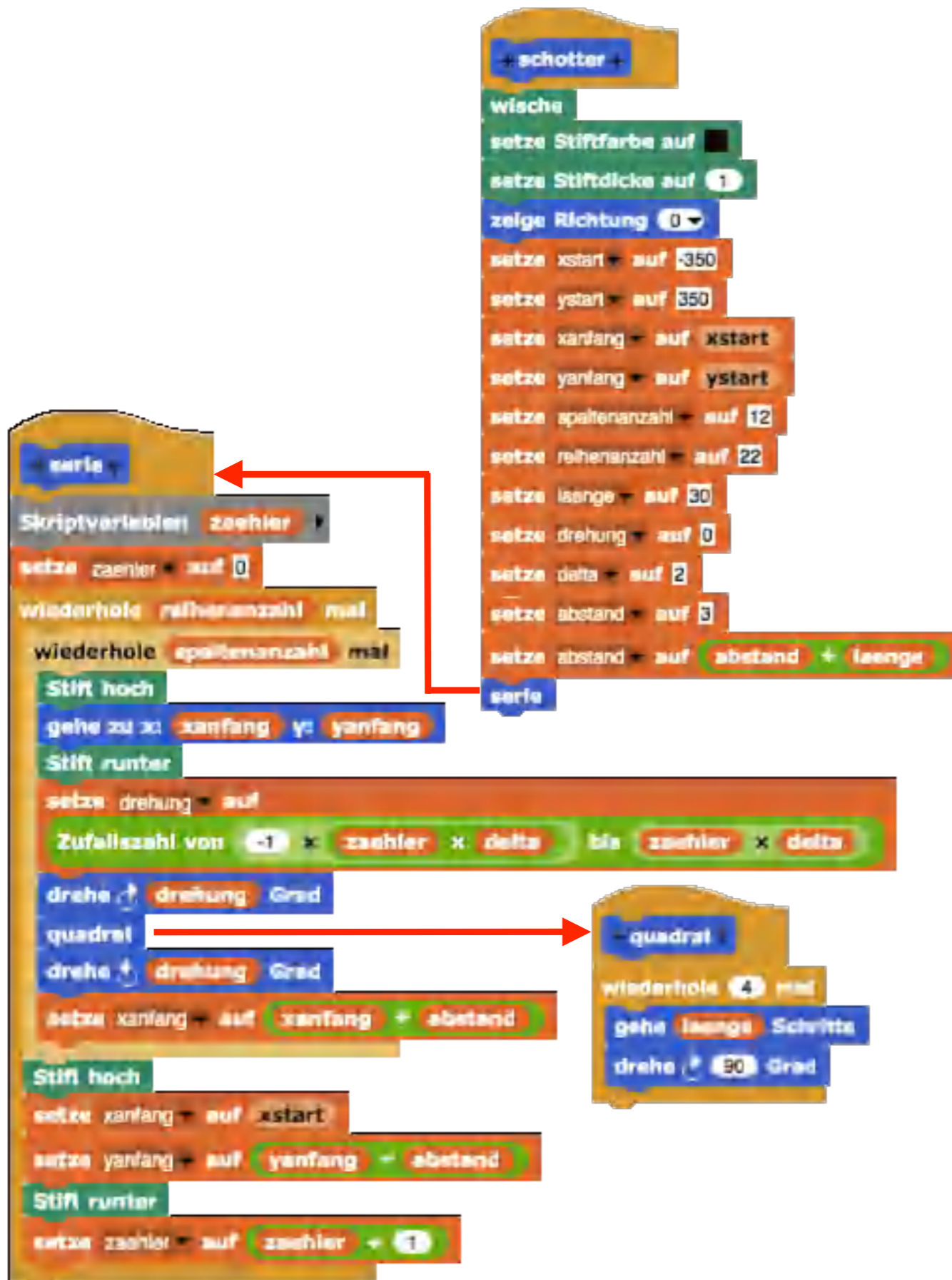
1  ' BEGIN ' COMMENT ' SCHOTTER . ,
2  ' REAL ' R , PIHALB , P14T . ,
3  ' INTEGER ' I . ,
4  ' PROCEDURE ' QUAD . ,
5  ' BEGIN '
6  ' REAL ' P1 , Q1 , PSI . , ' INTEGER ' S . ,
7  JE1 . = 5 * 1 / 264 . , JA1 . = - JE1 . ,
8  JE2 . = PI4T * ( 1 + I / 264 ) . , JA2 . = PI4T * ( 1 - I / 264 ) . ,
9  P1 . = P + 5 + J1 . , Q1 . = Q + 5 + J1 . , PSI . = J2 . ,
10 LEER ( P1 + R * COS ( PSI ) , Q1 + R * SIN ( PSI ) ) . ,
11 ' FOR ' S . = 1 ' STEP ' 1 ' UNTIL ' 4 ' DO '
12 ' BEGIN ' PSI . = PSI + PIHALB . ,
13 LINE ( P1 + R * COS ( PSI ) , Q1 + R * SIN ( PSI ) )
14 ' END ' . , I . = I + 1
15 ' END ' QUAD . ,
16 R . = 5 * 1 . 4142 . ,
17 PIHALB . = 3 . 14159 * . 5 . , P14T . = PIHALB * . 5 . ,
18 I . = 0 . ,
19 SERIE ( 10 . 0 , 10 . 0 , 22 , 12 , QUAD )
20 ' END ' SCHOTTER . ,

1  ' REAL ' P , Q , P1 , Q1 , XM , YM , HOR , VER , JLI , JRE , JUN , JOB . ,
5  ' INTEGER ' I , M , M , T . ,
7  ' PROCEDURE ' SERIE ( QUER , HOCH , XMAL , YMAL , FIGUR ) . ,
8  ' VALUE ' QUER , HOCH , XMAL , YMAL . ,
9  ' REAL ' QUER , HOCH . ,
10 ' INTEGER ' XMAL , YMAL . ,
11 ' PROCEDURE ' FIGUR . ,
12 ' BEGIN '
13 ' REAL ' YANF . ,
14 ' INTEGER ' COUNTX , COUNTY . ,
15 P . = - QUER * XMAL * . 5 . ,
16 Q . = YANF . = - HOCH * YMAL * . 5 . ,
17 ' FOR ' COUNTX . = 1 ' STEP ' 1 ' UNTIL ' XMAL ' DO '
18 ' BEGIN ' Q . = YANF . ,
19 ' FOR ' COUNTY . = 1 ' STEP ' 1 ' UNTIL ' YMAL ' DO '
20 ' BEGIN ' FIGUR . , Q . = Q + HOCH
21 ' END ' . , P . = P + QUER
22 ' END ' . ,
23 LEER ( - 148 . 0 , - 105 . 0 ) . , CLOSE . ,
24 SONK ( 11 ) . ,
25 OPBEN ( X , Y )
26 ' END ' SERIE . ,

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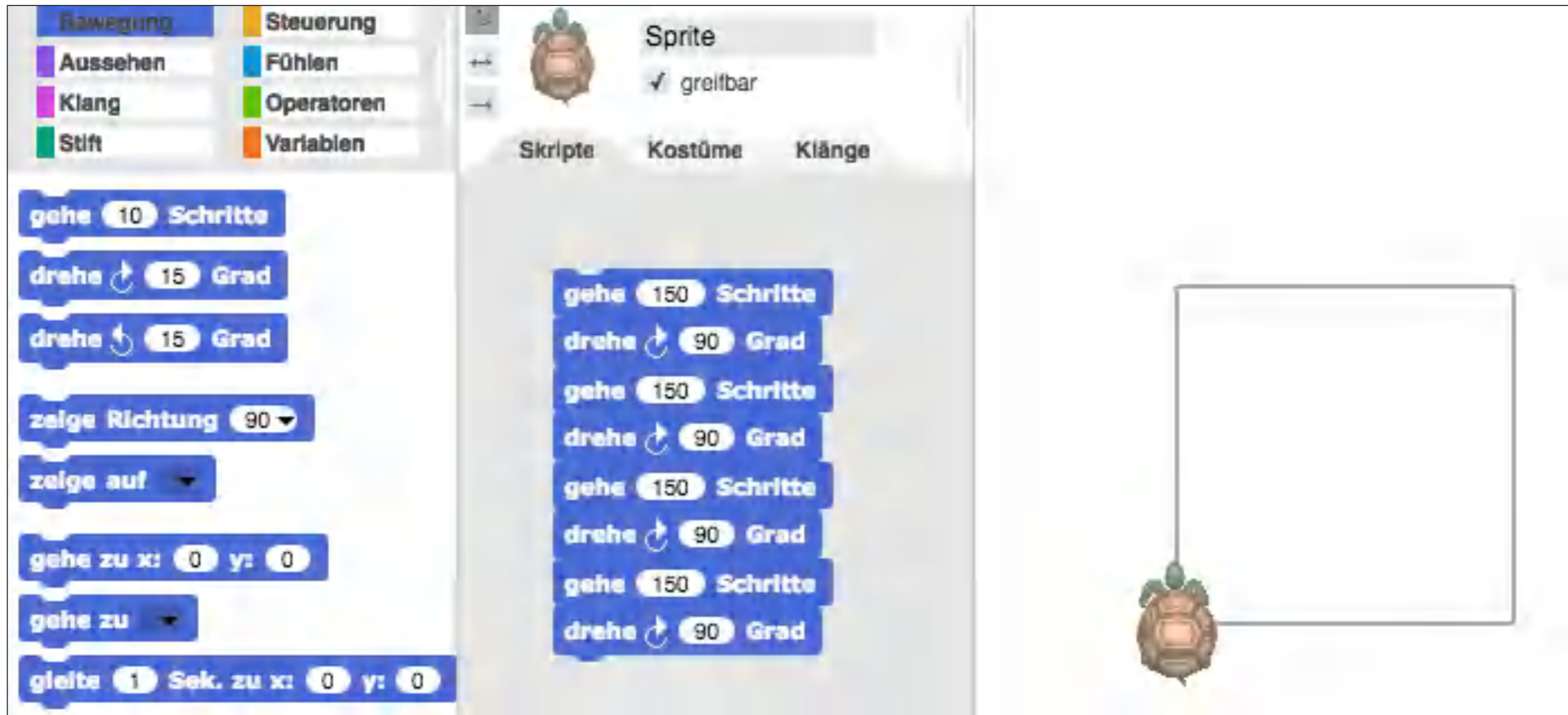




Computersprache: SNAP!

Georg Nees: Schotter, 1969

# SNAP! - Schildkrötengrafik



Computersprache: SNAP! (Jens Mönig u.a., 2012)

**Vielen Dank!**