

Bild 2



Bild 3

Eingegangen am 10. Oktober 1964

Georg Nees: aesthetic restlessness 1964

The Concepts of Information and Aesthetic in Early Computer Art (1964-71)

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Pictorial information

as part of a **communication channel** can be broken down to **repertoires** - a level of **information theory** - and be **transformed** by **generative aesthetic** to create **macro aesthetic states**.

The Stuttgart school

Max Bense was the head of the „Stuttgart school“. His scientific aesthetic inspired Frieder Nake and Georg Nees to do research in computer art. They did the first exhibition about computer art worldwide.

Georg Nees later wrote the first dissertation about computer art, Frieder Nake might be considered the most successful computer artist in the first phase.



ER 65 in Stuttgart, work place for the Stuttgart school

The projects of generative aesthetics 1971/1965

Max Bense

'The aim of generative aesthetics is the artificial production of probabilities of innovation or deviation from the norm.' (Bense)

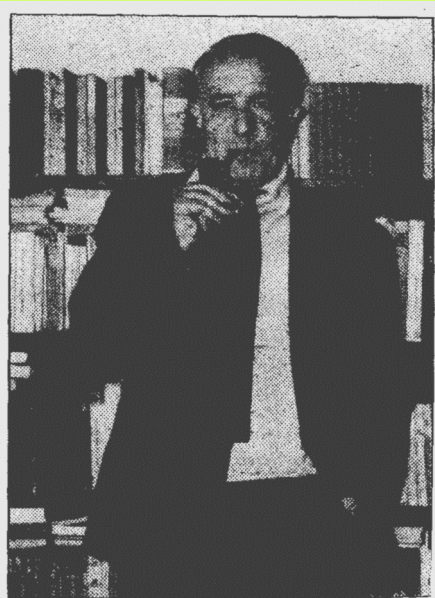
Today we have not only mathematical logic and a mathematical linguistics, but also a gradually evolving mathematical aesthetics. It distinguishes between the 'material carrier' of a work of art and the 'aesthetic state' achieved by means of the carrier. The process is devoid of subjective interpretation and deals objectively with specific elements of the 'aesthetic state' or as one might say the specific elements of the 'aesthetic reality'. These elements are pre-established and their appearance, distribution and formation is described in mathematical terms. Thus this new aesthetics is simultaneously empirical and numerically orientated.

...

Generative aesthetics therefore implies a combination of all operations, rules and theorems which can be used deliberately to produce aesthetic states (both distributions and configurations) when applied to a set of material elements. Hence generative aesthetics is analogous to generative grammar, in so far as it helps to formulate the principles of a grammatical schema—realizations of an aesthetic structure.

(in: Reichardt 1971 "Cybernetics, Art and Ideas"
German original 1965)

Bense Information aesthetics

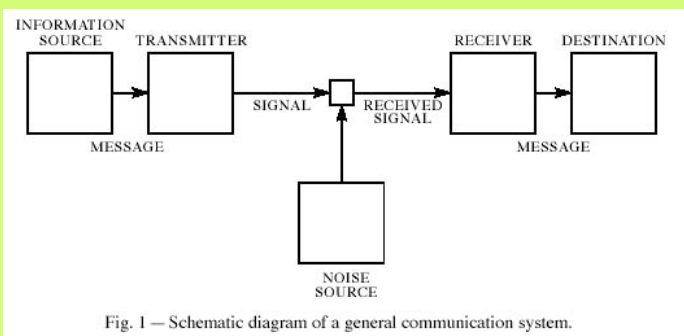


Wissenschaftstheoretiker **Bense**
... zur Herstellung künstlicher Kunst

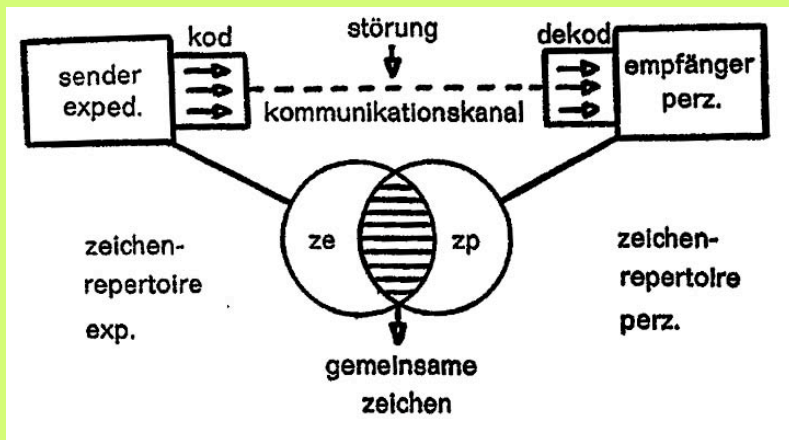
Der Spiegel Nr. 18/1965 S. 151f.

- The aesthetics value of an aesthetic object can be scientifically measured (information of a sign)
- Aesthetic information is an interplay between order and complexity (David G. Birkhoff).
- Negentropy (reversed physical entropy as process – Whitehead)
- The aesthetic information is part of (human) communication (Shannon).
- The communication channel can be framed by Wiener's cybernetics (feedback systems)
- Given the rules for generating aesthetic information, a computer can produce aesthetic objects as well (generative aesthetics).

Information theory and cybernetic aesthetics



C. Shannon 1948



Christoph Klütsch
M. Bense 1968

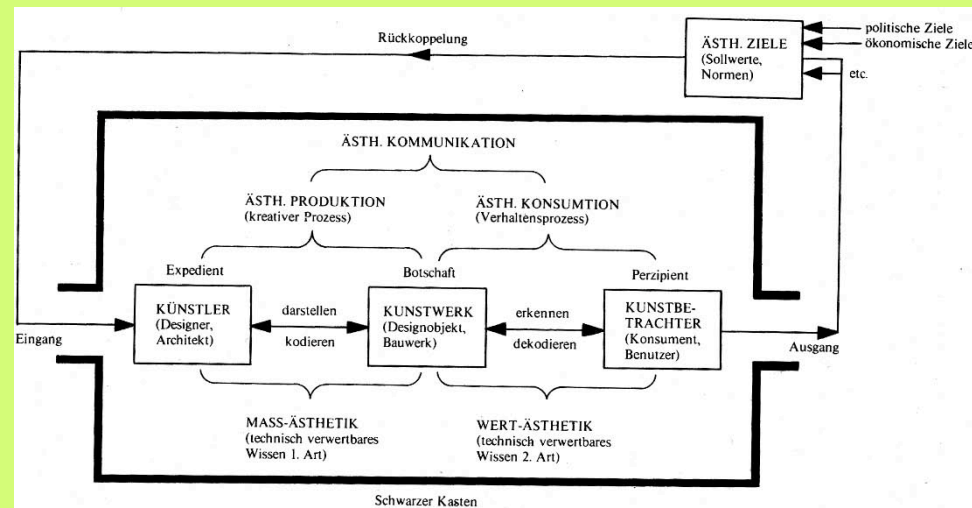


BILD 1. Kybernetisches Modell ästhetischer Prozesse? Ästhetische Produktion, Konsumtion und Kommunikation.

<http://www.computerkunst.org>
S. Maser 1971

Max Bense

- ‘Konkrete posie’ – transition from text to visual
- Taught ‘Information’ at the Hochschule für Gestaltung in Ulm (invited by Max Bill)
- Repertoire (difference in text and graphic)
- Micro-macro aesthetic
- Generative aesthetics
- Intuition – chance

Goodman - Languages of Art

Lectures from 1962

Label (a A ▲ A) red red

1. There is no notational (digital) system for art, as there is in music or literature.
2. Pictures do not refer, they exemplify (have the same properties as what is shown)
“To have without symbolizing is merely to possess, while to symbolize without having is to refer in some other way than by exemplifying” (p. 53)
3. Pictures are dense and their repertoire is thus unlimited in principle, that is - analog.

Nominalistic positions for art: Goodman and Bense

5 criteria for aesthetic:

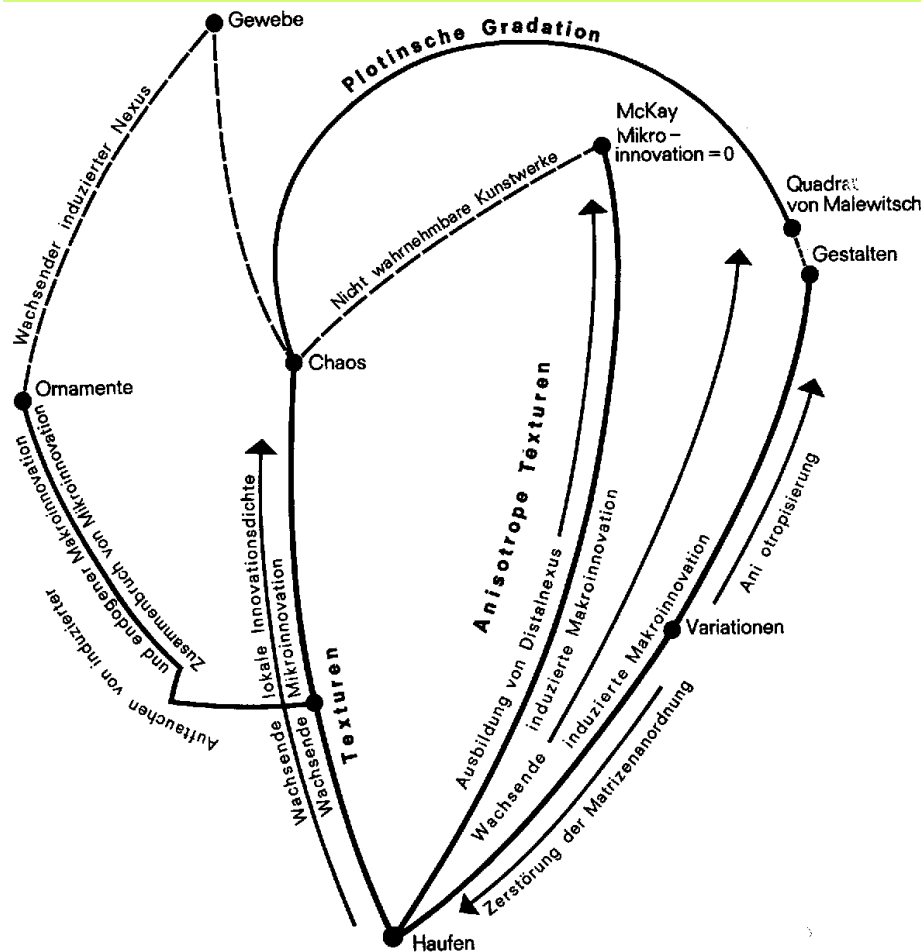
1. Syntactic density
2. Semantic density
3. Syntactic repleteness
4. Exemplification
5. Multiple and complex reference

(added in ways of world

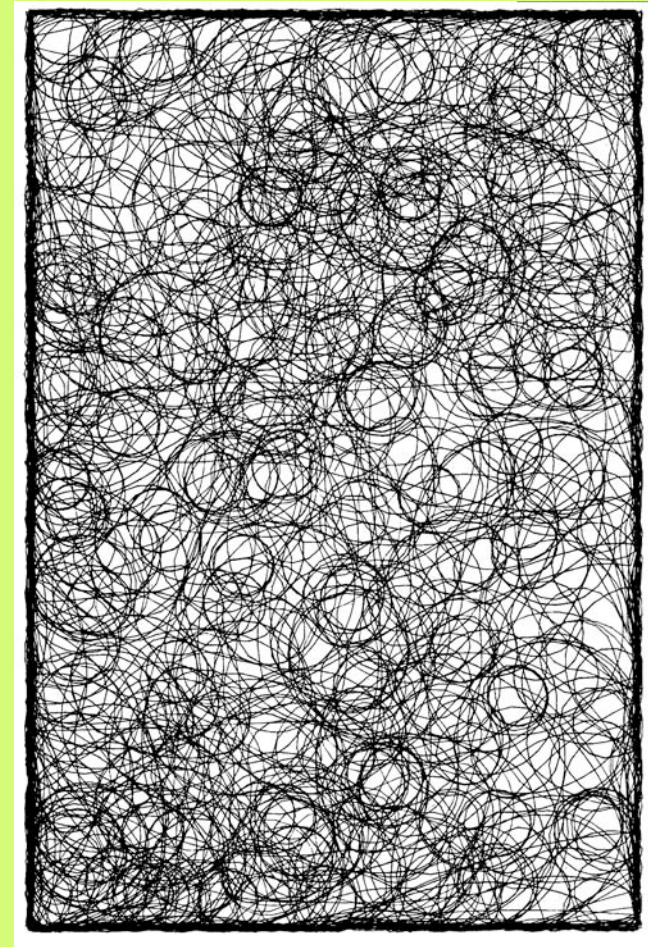
making 1978) <http://www.computerkunst.org>

1. Micro-aesthetic (syntactic)
2. Macro-aesthetic (with reality)
3. Chance as intuition
4. Aesthetic objects as Class members exemplify classes

Nees - Gradationen



Figur 9 Ein Gradationsdiagramm



Gewirre und Gewölle Bild 37

Goodman on classes of art

- Why there are no classes of art:
 - One could build one-member classes to cover the historical contexts
 - Or one could built larger descriptive classes, which do not cover the historical context

That means: the description of a class of let's say portraits is never detailed enough to individuate Mona Lisa, while a description of the Latin alphabet can be specified to individuate a text. One would only have to specify: the class member with the following order of signs: “the text”

Nake : A class of art works is possible

„Each painter is a restricted picture generator. So is each picture generating computer program. At all times, artists have applied the same method most computer program employ: they tried to vary a theme as often as possible in order to attain a 'best' (in their judgment) object. This method became particularly important in recent years with Bauhaus, concrete art, New Tendencies, etc.” (Nake 1969b)

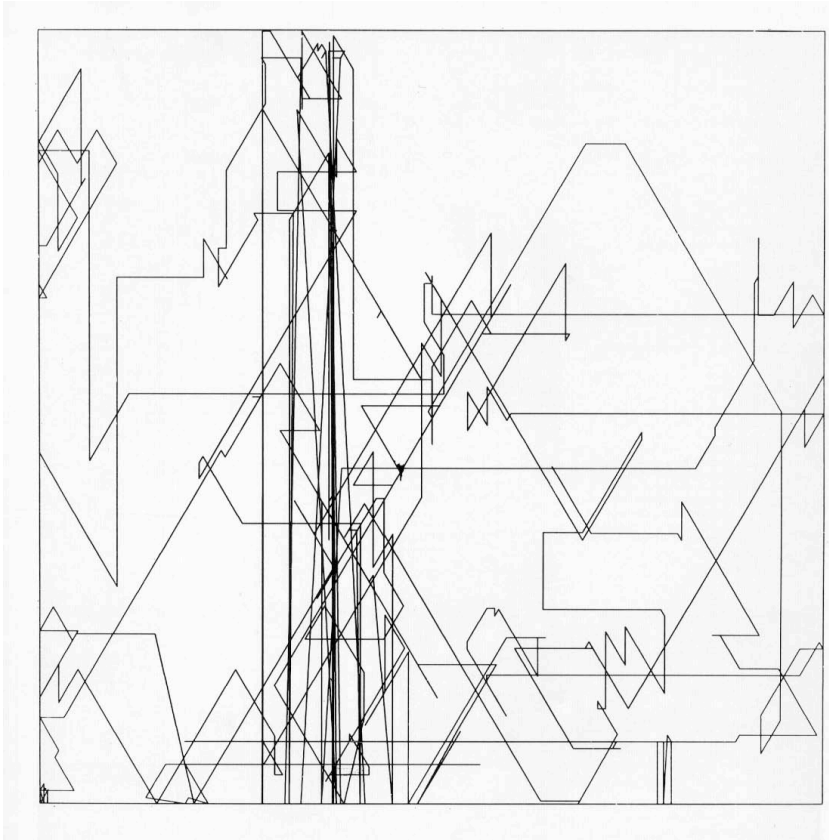
Definition of an aesthetic program

Given a (finite) repertoire R of signs, a (finite) class M with rules to connect the signs and the intuition I, after which the signs and rules from R and M are selected. Than the triple (R, M, I) is called an aesthetic program. (Nake 1968, translated by Klütsch)

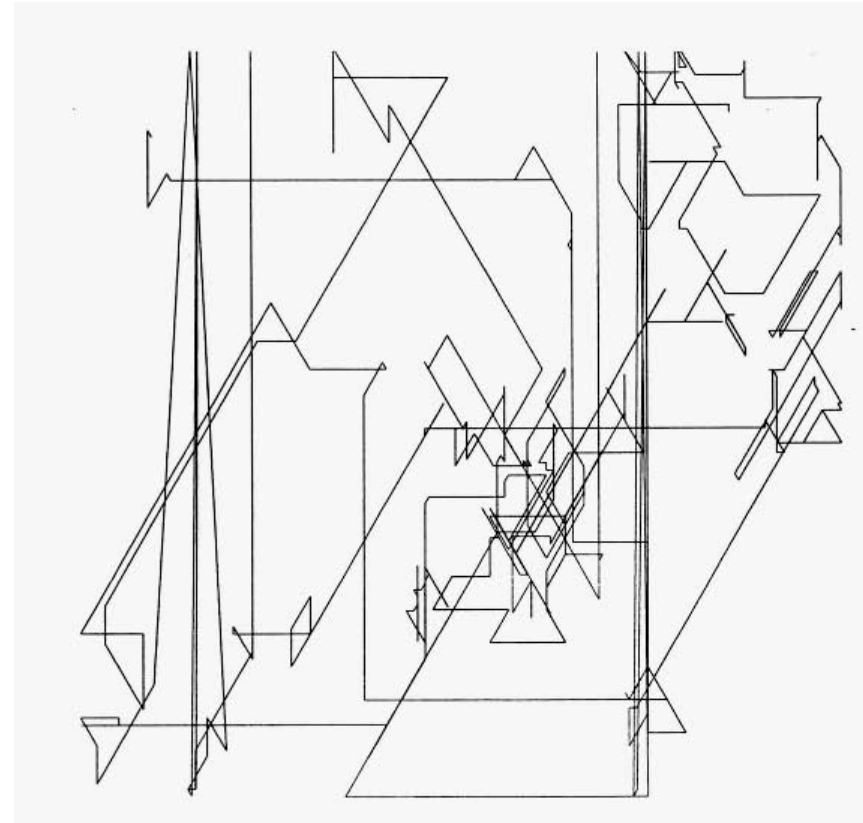
Reply

- But doesn't that mean, that Nake and Nees by using a finite repertoire violate Goodman's principle?
 - Nake defines the question for all pictures as a trivial mathematical problem: divide a specified canvas into a specified grid and specify the values for the elements in the grid and you have the exact number of all possible pictures.
- Not all of them are pictures
 - Right, so we have to find an algorithm to filter the right ones out, by defining syntactic and semantic rules with multiple and complex reference. Each instance will than exemplify the defined class.

Nake – Classes of aesthetical objects

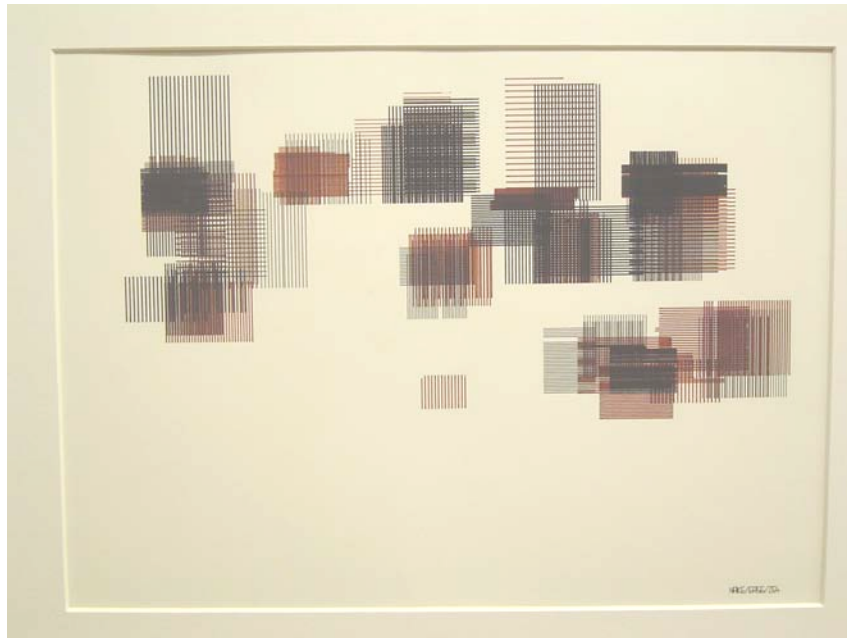


Zufälliger Polygonzug 13/9/1965 Nr. 3
40x40cm
Christoph Klütsch



Zufälliger Polygonzug 13/9/1965 Nr. 7
40x40cm
<http://www.computerkunst.org>

Frieder Nake



Felder mit Rechteckschraffuren 1965

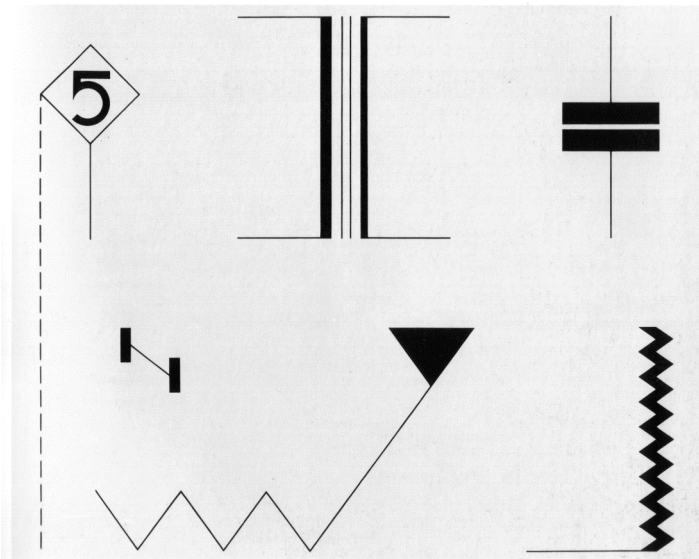


Geradenscharen 1965

Manfred Mohr

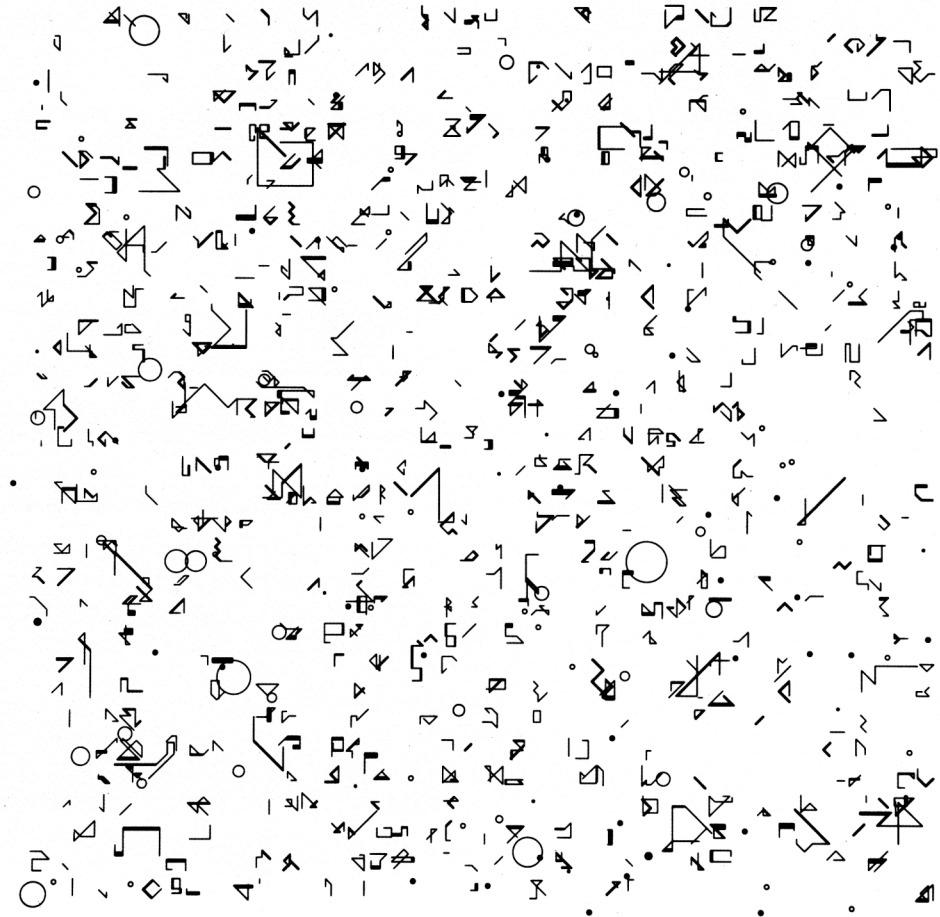
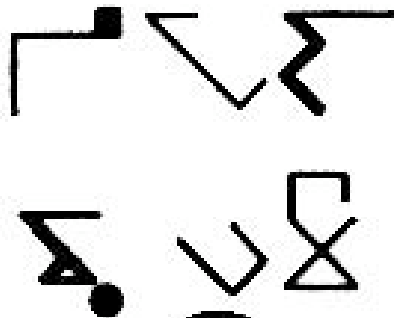
“The first step in that direction was an extended analysis of my own paintings and drawings from the last ten years. It resulted in a surprisingly large amount of regularities, determined of course by my particular aesthetical sense, through which I was able to establish a number of basic elements that amounted to a rudimentary syntax. After representing these basic constructions through a mathematical formalism, and setting them up in an abstract combinatorial framework, I was in a position to realize all possible representations of my algorithms.”
(Mohr 1971)

Mohr – Formalizing his own style



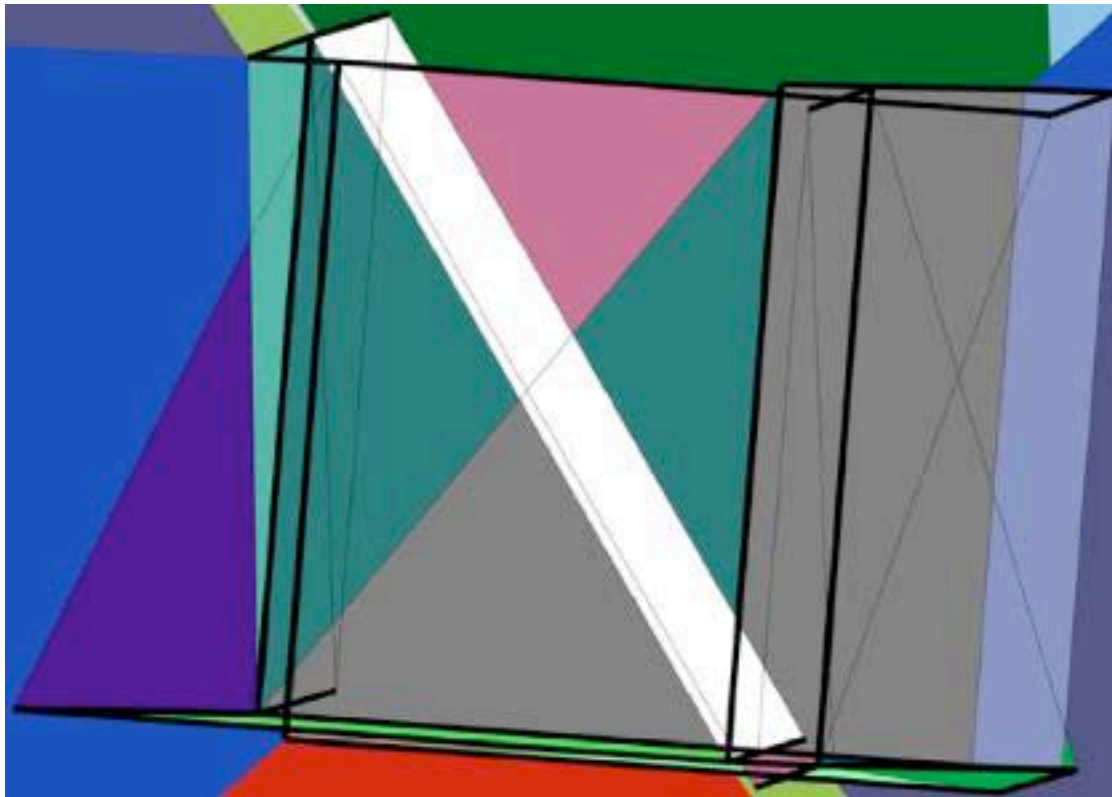
16/469 Tempera
Leinwand 1969
130x162cm

Detail from P-50



P-50 Formal Language II Tusche / Papier
/ Holz 1970 92x92cm

Manfred Mohr: In computer art signs don't refer to anything else than themselves



Das [DAM] Berlin präsentiert:

Manfred Mohr

space.color.motion

Eröffnung der Ausstellung
gemeinsam mit dem Künstler Manfred Mohr

Freitag, den 30. April 2004, 19 - 21 Uhr
Ausstellungsdauer: 04.5. - 22.6.2004

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Manfred Mohr
Space.color.motion 2003
6-dimensional hypercube

