Computers at an Exhibition

Eva Cao, Shining Sun, Prae

Naturalizing the Computer: IBM Spectacles

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III THE HEURISTIC ENVIRONMENT: THE IBM MUSEUM

Aesthetics. Heuristics. Immanence. A Museum of Computer Science run by Computers

Why?

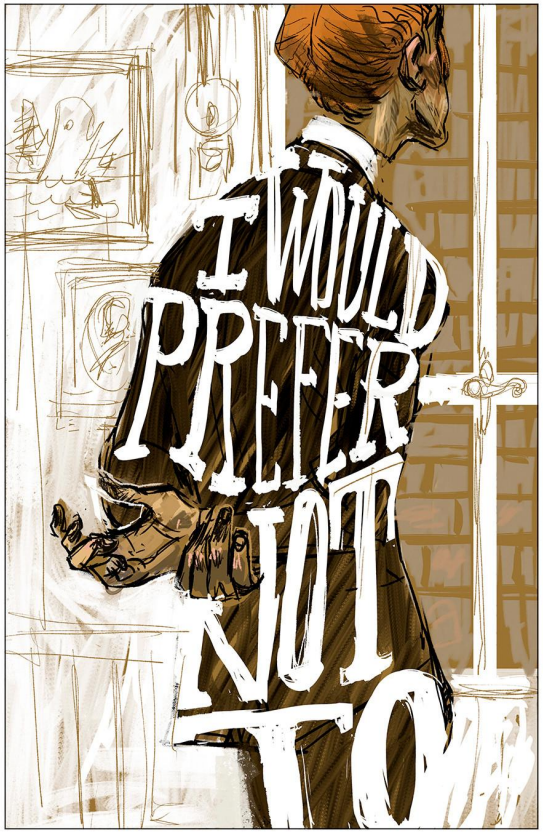
Citation from Christine’s Reading Response

“A Computer Perspective” transcends exhibition and book publishing — it represents an integrated combination of design, technology and education that facilitates public understanding and acceptance of emerging technologies. Furthermore, “A Computer Perspective” serves as evidence that design not only informs but engages and inspires as we navigate digital age challenges head on. These past insights remain highly pertinent as we advance further.”

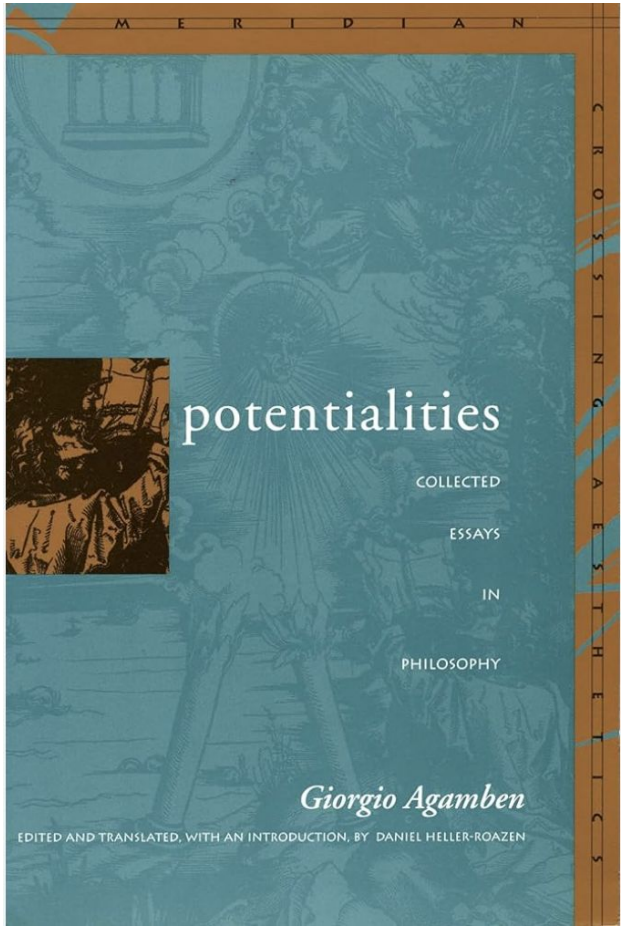
“ In short, the world once wondered: what would a computerized world look like? ”

Utter absence of innate subjective potentialities. Pervasive Blankness

A new architect of the universal. Impose a chain of order.

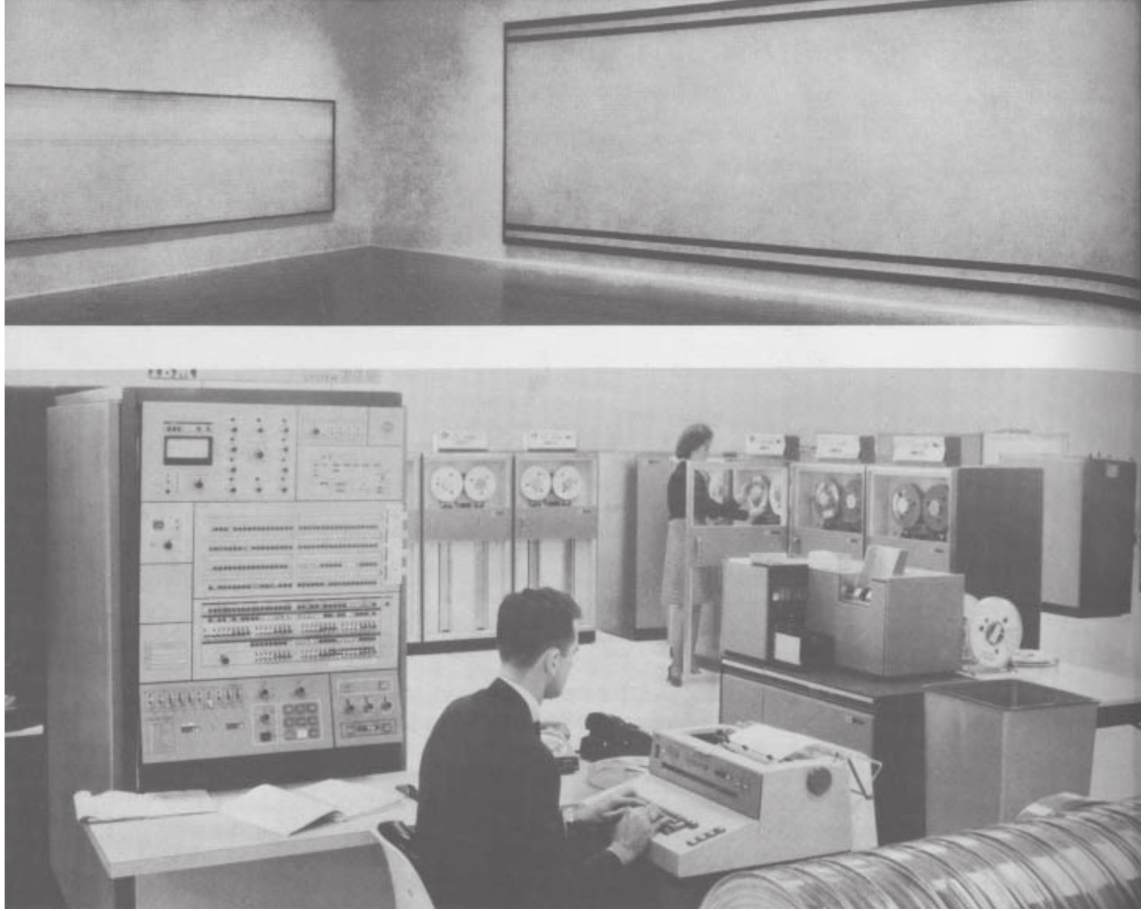


"Bartleby, the Scrivener" homage to Melville. Roberto Ricci.



“ Every human power is adynamis, impotentiality; every human potentiality is in relation to its own privation. This is the origin (and the abyss) of human power, which is so violent and limitless with respect to other living beings”

“ Before the Law stands a doorkeeper” —-Kafka



“Computerdom,” from Lewis Mumford, The Myth of the Machine, vol. 2, The Pentagon of Power (New York: Harcourt Brace Jovanovich, 1970).

Experiences

Since the end of the nineteenth century, philosophy has made a series of attempts to grasp "true" experience, as opposed to the kind that manifests itself in the standardized, denatured life of the civilized masses. These efforts are usually classified under the rubric of "vitalism." Their point of departure, understandably enough, has not been the individual's life in society. Instead they have invoked poetry, or preferably nature—most recently, the age of myths. Dilthey's book *Das Erlebnis und die Dichtung* represents one of the earliest of these efforts, which culminate with Klages and Jung, who made common cause with fascism.[5] Towering above this literature is Bergson's early monumental work, *Matière et mémoire*.[6] To a greater extent than the other writings in this field, it preserves links with empirical research. It is oriented toward biology. As the title suggests, it regards the structure of memory [*Gedächtnis*] as decisive for the philosophical structure of experience [*Erfahrung*].[7] Experience is indeed a matter of tradition, in collective existence as well as private life. It is the product less of facts firmly anchored in memory [*Erinnerung*] than of accumulated and frequently unconscious data that flow together in memory [*Gedächtnis*]. Of course, the historical determination of memory is not at all Bergson's inten-

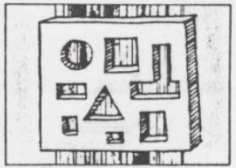
“ But as a language and logic machine. Indeed it has become a machine that even seems to be able to sense the world around it [via transduction]....”

A program for

INFORMATION RETRIEVAL

Locating and displaying specific material from a description of its content.

defines a pattern of words and values...



that the machine can seek out.

The care with which a pattern is defined is important.

The problem is — not to get too little...

or too much.

The tricky thing is that it needs human communication as a raw data to produce its code. In this sense, although it is immanent as a self-producing system. It co-evolves with human language as a nominalized coding system.

ART?

The dominance of natural language is increasingly challenged by the formal language of the Turing machine - extra-linguistic modalities of language.

The semiotics of art and the sign systems of IBM

The abstract machine.

Potentiality again: Art brings forward “what is yet to come, a new type of reality. It revolts against a constraining present composed of captured possibilities within the continuous promise of generation of potential”.

Seeing the computer as art is also a new way of thinking that sees technology in an instrumental and anthropological terms.

“For to posit ends and procure and utilize the means to them is a human activity.”

Phoebe’s beautiful annotated reading of Eames’ Free Verse

An “Annotated” Reading of Eames’s Free Verse

A model is

An interim report on a possible way of organizing a bunch of (putatively) related materials

Not only organizing: a model is capable of excavating, filtering, eliminating, remembering… The model grows with us. As we grow old, we shrink in sizes, but machines do not (though they may shrink for functional and/or aesthetic purposes). Nevertheless, this still sounds human: the power of organizing a bunch of related (and unrelated, if I may add) materials. Doesn’t it?

It invites feedback. *It is designed to invite feedback.*

In the best case, it’s an agent of negative entropy; it slows down the decay of usable information.

Slowing down or accelerating? The “picture” is constantly renewed at an ever-increasing speed, and what is deemed usable minutes ago may as well be abandoned in the next minute.

It captures form/order, in a way that can be built on.

A form/order discovered and favored by the human mind. Does the machine have its own preference? If it does, is it going to tell? Are we able to tell?

A good model is to the general information soup as a new protein/enzyme molecule to the general chemical repertoire.

A good model is one that does not rebel against its design, or the human will. Imagine machines develop tribal thinking.

There's no argument as to what works. What works at a given level is what survives and gets built on.

There are cases when things didn't work, or when machines fail. Is that a moment to celebrate or to mourn for?

"Cogency"

Really?

Tenacity

Sure. Do humans have this, too?

Elegance

What humans aspire to achieve is passed on to machines. It has become the task of the machine, while humans lay idle in their beds, on their couches, looking definitely not elegant.

This-is-as-it-should-be-ness

But not what-it-was or what-it-felt-like-before!

Responsibility as model-fosterers: to enrich and refine and make more rigorous one's capacity to recognize these qualities. Like the architect, one can afford to include nothing out.

See? A machine is ultimately human-centered.

The Exhibition Space: Un-Architecture

….because of its open-air, grove-like quality and its integration into the overall spectacle, Roche was eager to point out that “we have out there a Pavilion which belongs very much to serious architecture, the role of which is not only to provide shelter and solve functional needs but also to create environments.”

The 'Anarchitecture' Of Gordon Matta-Clark

“ IBM’s technological and ideological problem was transformed into an aesthetics problem ”

Heuristics-thought experiments

Citation from Shiman's Reading Response

" Exhibition as a medium that bridges the human/computer subjectivities reminds me of the 1968 exhibition *Cybernetic Serendipity*, a milestone that united art and science. The exhibition specifically focused on cybernetics that introduced elements of machine as "sensory members" and emphasized their feedbacks with external environments. Computer hardware were put onto the front stage as artworks, illustrating links between the systems employed by artists, composers, poets, architects, engineers, and all those involved with the making and use of cybernetic devices.[1] The unlabeled objects and anonymous authorship reevaluate the exhibitions as not attempting to replicate scientific methodology or showcase technical operations, but to call attention to permeability of disciplinary boundaries. The exhibition space is not a laboratory of computers, nor a museum or art gallery of white rooms, but emerges as a critical form of interweaving knowledge systems."

[1] Fernández, María, Cybernetic Serendipity: The Computer and the Arts, London: Studio International, 1968, 5.

Immanence vs Aesthetics

immanence and aesthetics. Their interaction affords the opportunity for complex experimental connectivities and relationalities that open intersections and entanglements of subjectivity, creativity, perception, and culture. Immanence seems to open the capacity produced in the confluence of sheer agential materiality and thought.

According to Spinoza, the impetus for an immanent system is the expression of its own capacities. The set of capacities is both infinite and utterly contingent. Immanence is an infinitely emergent system composed of elements each of which has an idiosyncratic capacity of singular expression. Each unit of infinite and singular expression can only discover what it can do through an encounter with another element.

The beautiful is an invention of singularity which circulates and reveals itself as common in the multiplicity of subjects who participate in the construction of the world. The beautiful is not the act of imagining, but an imagination that has become action. And in this sense, is multitude.

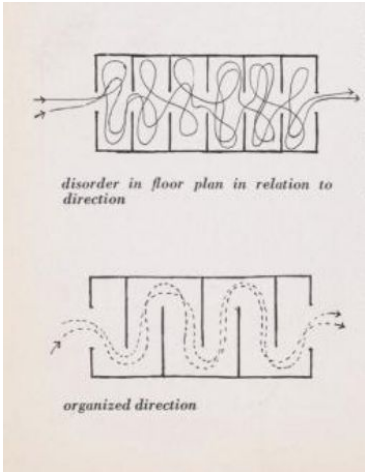
Beauty is not a luxury, rather it is a way of creating possibility in the space of enclosure, a radical act of subsistence, an embrace of our terribleness, a transfiguration of the given. It is a will to adorn, a proclivity for the baroque, and the love of *too much.*

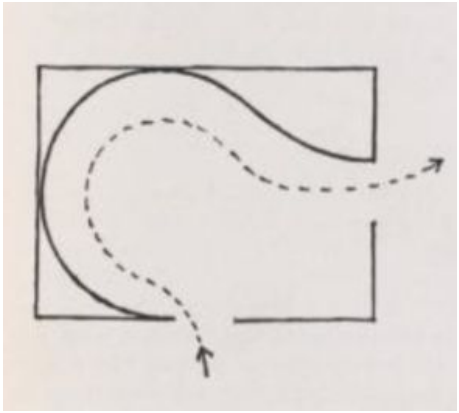
—Saidiya Hartman

Homo sum, humani nihil a me alienum puto"

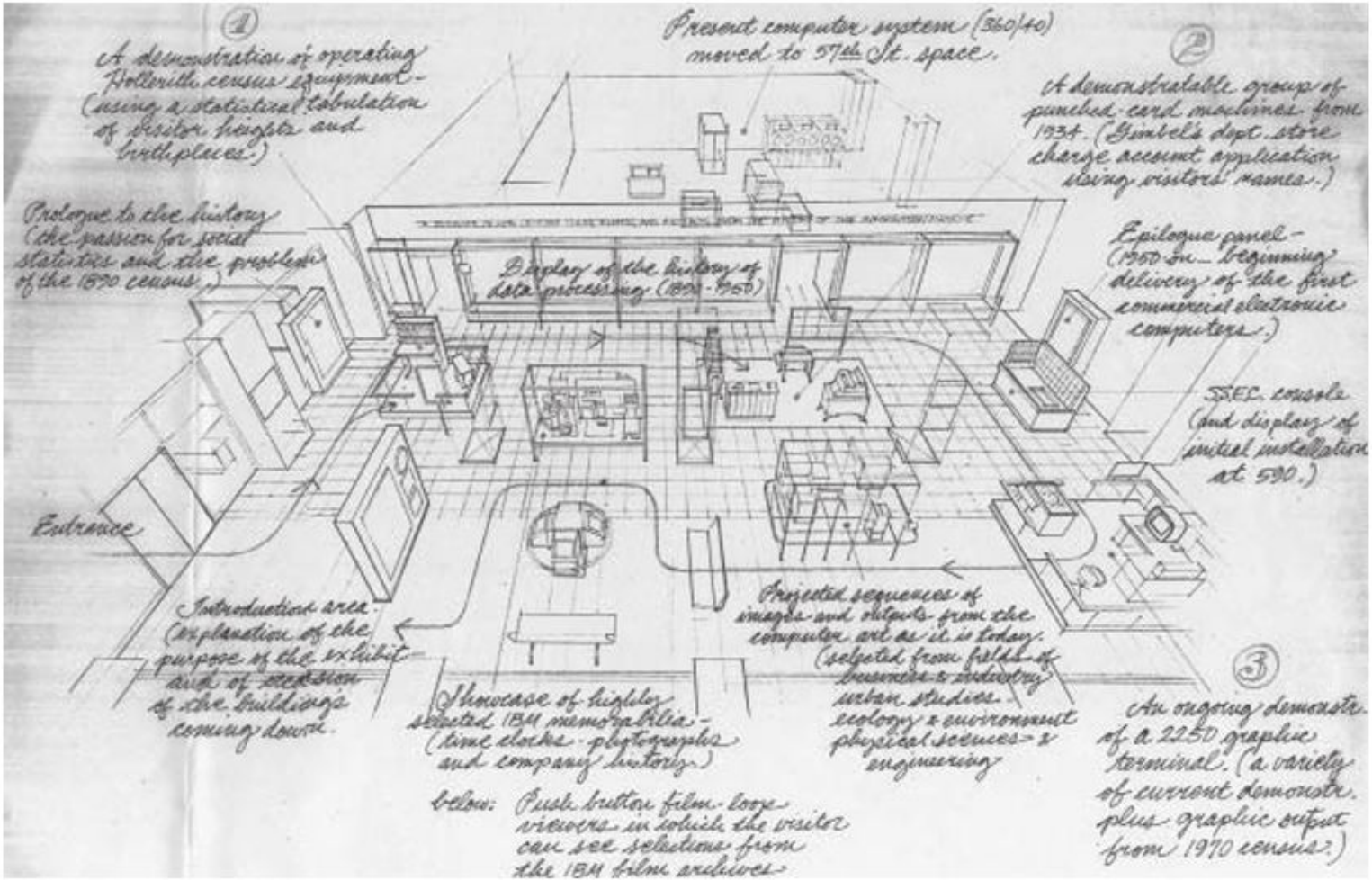
"I am human, and I think nothing human is alien to me."

”the theme should not retain its distance from the spectator, it should be brought close to him, penetrate and leave an impression on him, should explain, demonstrate, and even persuade and lead him to a planned and direct reaction. therefore we may say that **exhibition design runs parallel with the psychology of advertising**. and here lies an essential cause of the intensification of the exhibition”



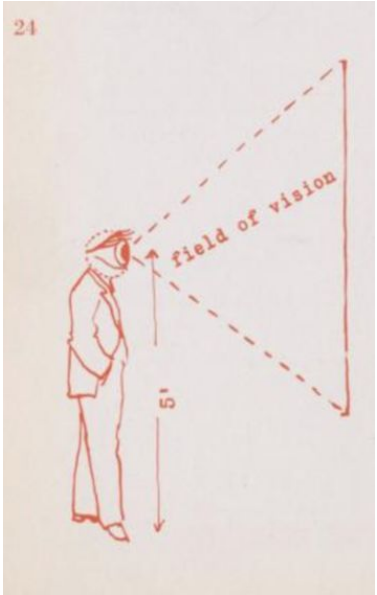


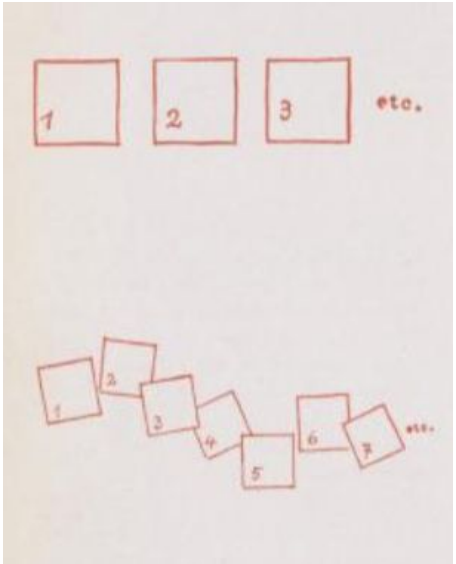
1. The ground plan and the direction of the visitor
2. The design/"theme" of the exhibition

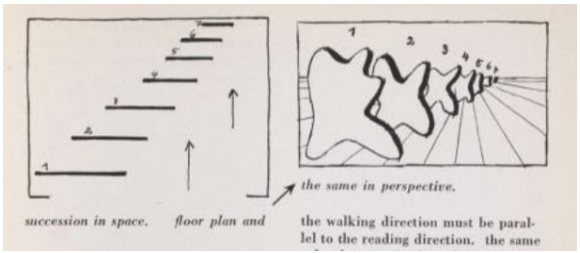


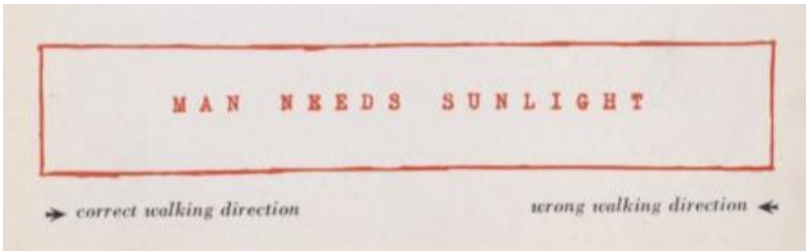
A Computer Perception (1972) Exhibition Floor Plan

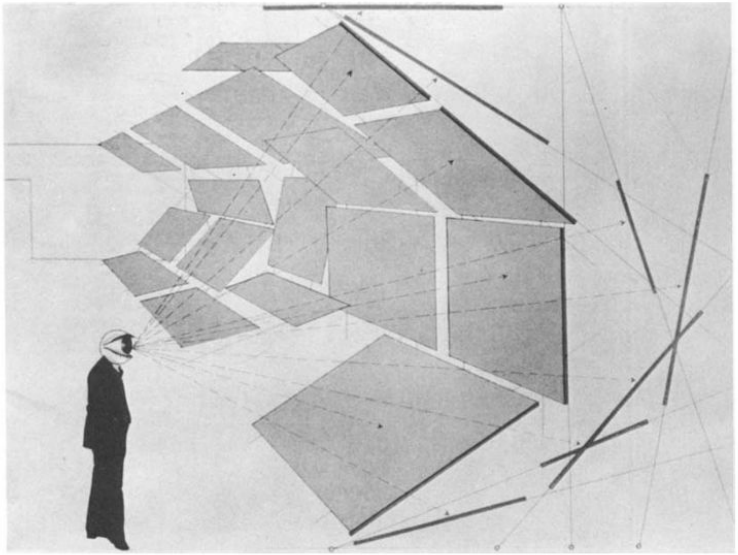
”the reader of a book can either sit still or move, the book will always remain in a fixed relationship to his eyes. In an exhibition, the situation is changed; the object remains fixed and the individual is in motion”

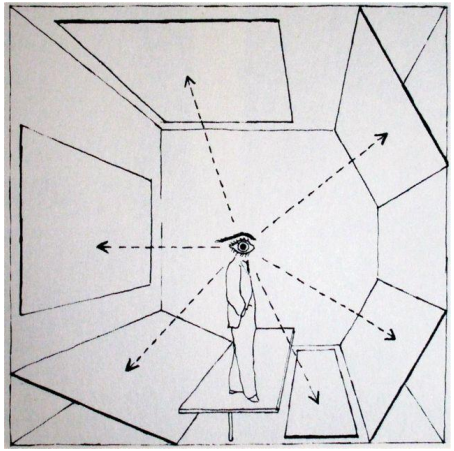




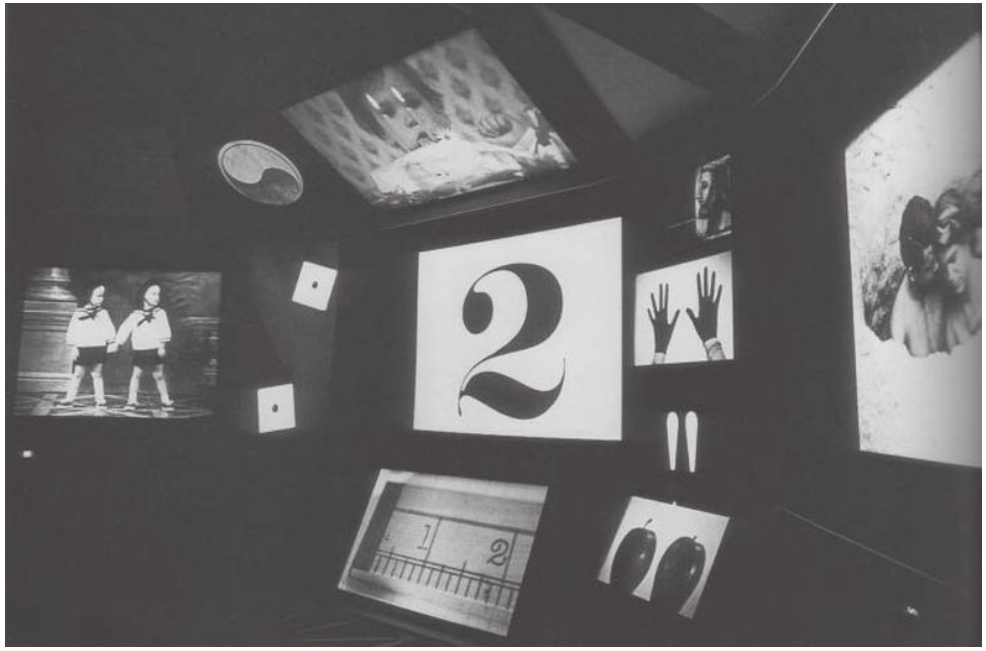




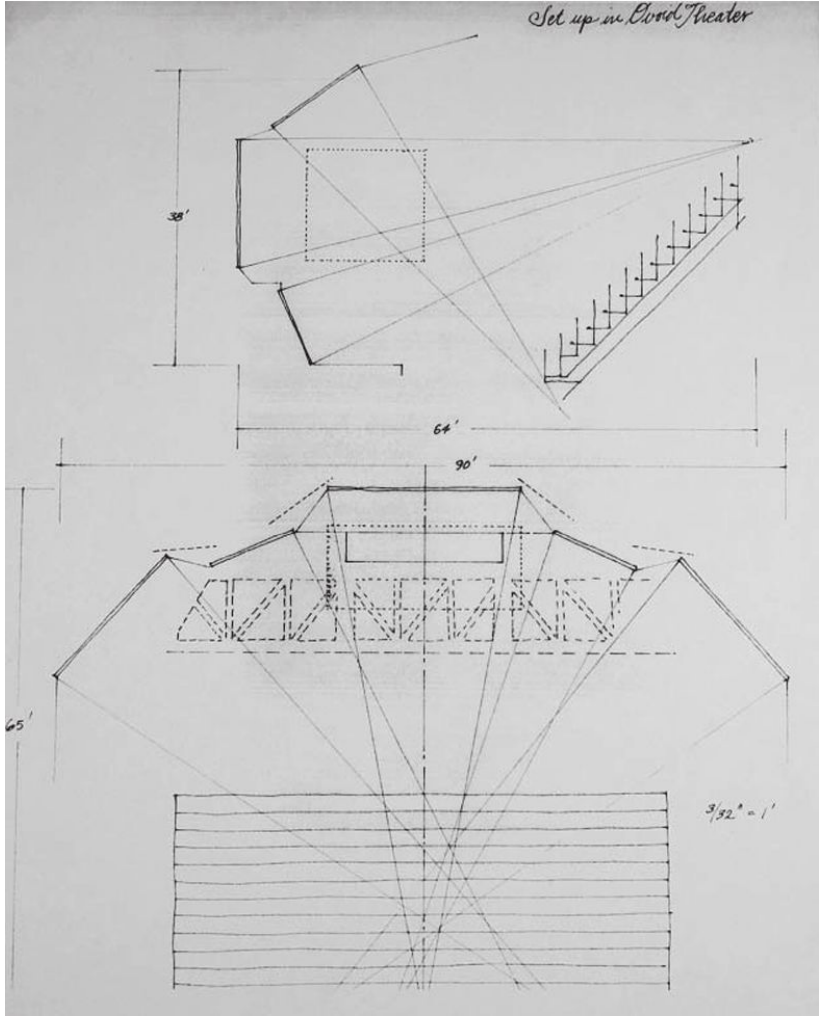




Herbert Bayer's Extended Field of Vision

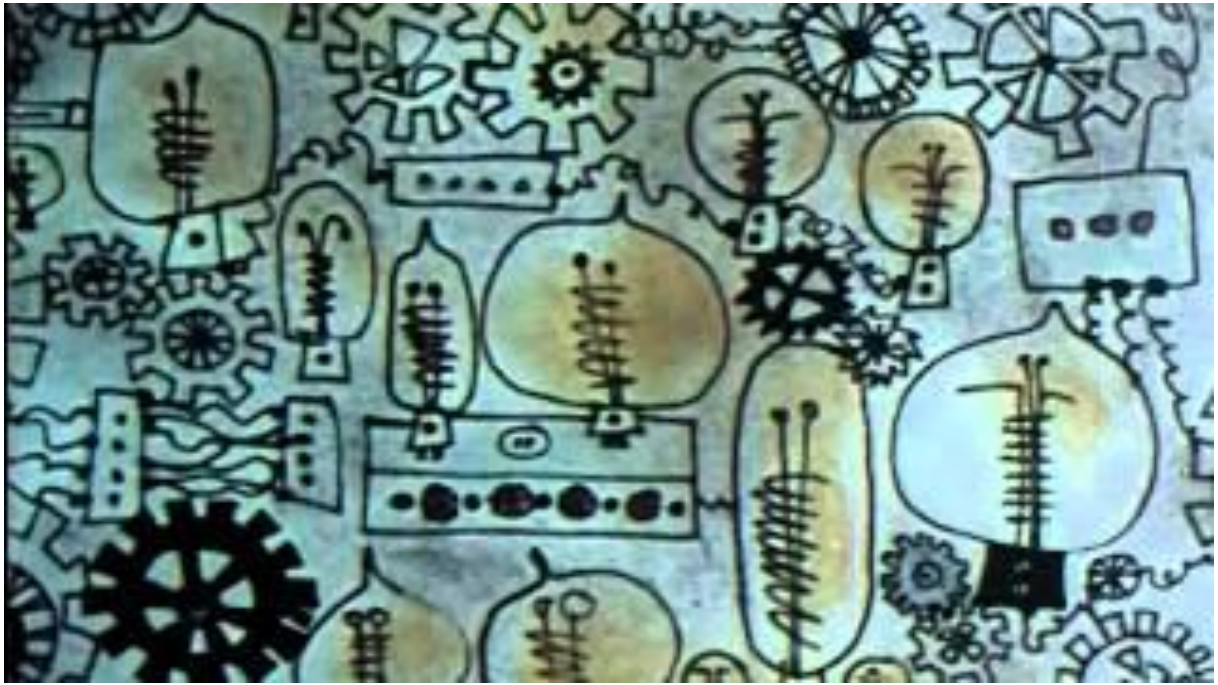


IBM Pavilion New York's World Fair 1964, *Think* Playing in The Information Machine Theatre



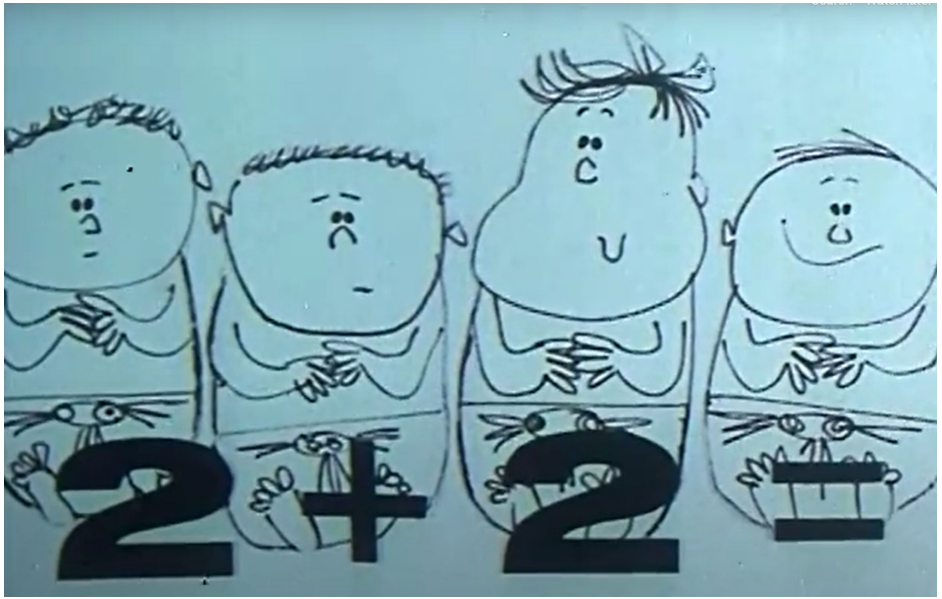
Eames Office Diagrammatic Plans for the Information Machine

IBM Pavilion New York's World Fair 1964



The Information Machine: The Creative Man and the Data Processor - The Office of Charles and Ray Eames

”mass media had direct relationships to social control and created a ’one-dimensional man’ who lived in a bland world of conformity and had become too comfortable to engage in ideas that critiqued or opposed mainstream society in any way that could lead to meaningful social change”



“We approach the final phase of the extensions of man - the technological simulation of consciousness”

”McLuhan outlines a new utopian vision for media that emphasized a new relationship between the medium and the human senses. This vision imagined that electronic **communications were an extension of the human nervous system** and operated in a binary kind of progression - as technology advances so does the human sensory perception needed to receive it”

”what would it mean to say ’the medium of video is narcissism?”’

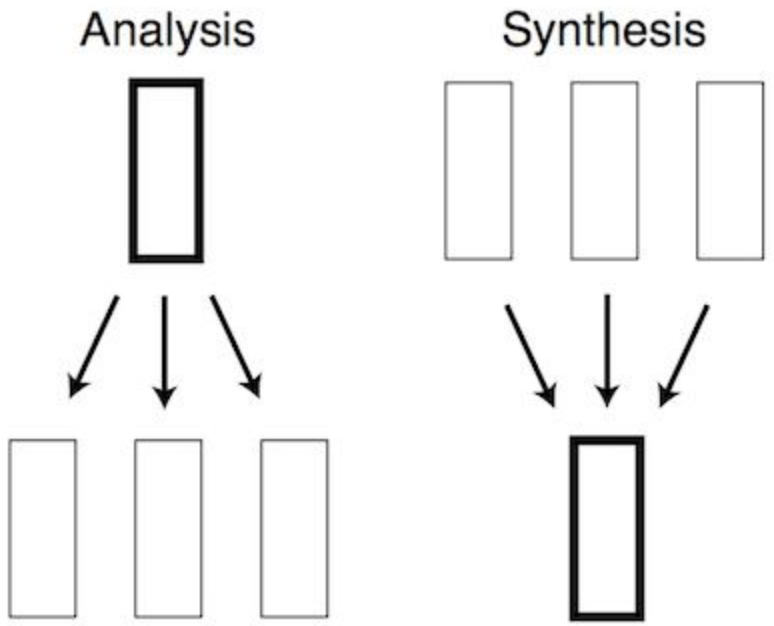
”the human psyche used as a conduit”

”This is why it seems inappropriate to speak of a physical medium in relation to video. For the object (the electric equipment and its capabilities) has become merely an appurtenance. And instead **video’s real medium is a psychological situation**, the very terms of which are to withdraw attention from an external object - an Other - and invest it in the Self”

”Transformed object-libido into ego-libido”

A Communications Primer - The Office of Charles and Ray Eames

Analysis and Synthesis


Analysis
Synthesis

The History Wall

Discourse Network

The Exhibition

Disjunctive, Connective, and Conjunctive Synthesis

A Computer Perspective, 1971

The History Wall

A quasi-linear timeline of images and texts that traced the history of the development of the modern computer from 1980 to 1950

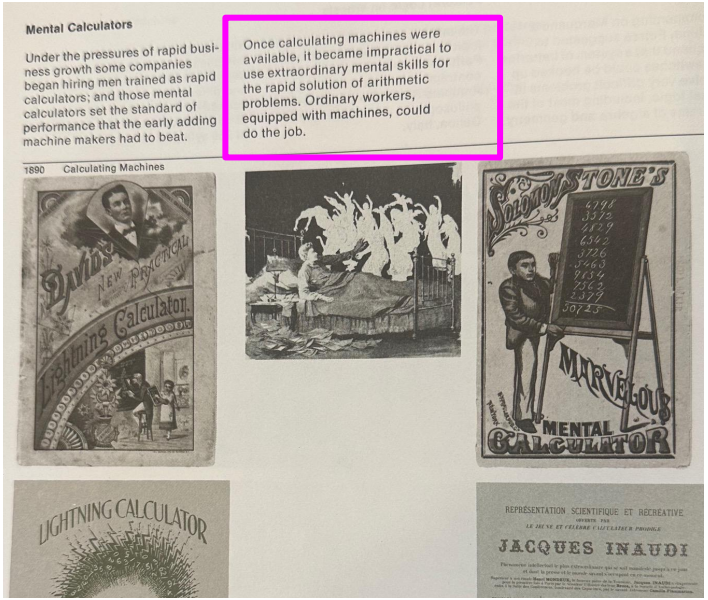
A pedagogical and display technique that Eames Office had developed in conjunction with Alexander Girard and George Nelson in 1950s

“Here are displayed the creators of instruments of computation and their machines and tables; the inventors of mathematical or logical concepts and the applications that embody their ideas; the dreamers and designers who conceived new instruments to increase the powers of the human mind; and fabricators of practical devices to serve the immediate needs of government, commerce, engineering, and science” (1, Eames).

“Discourse Network” by Friedrich Kittler

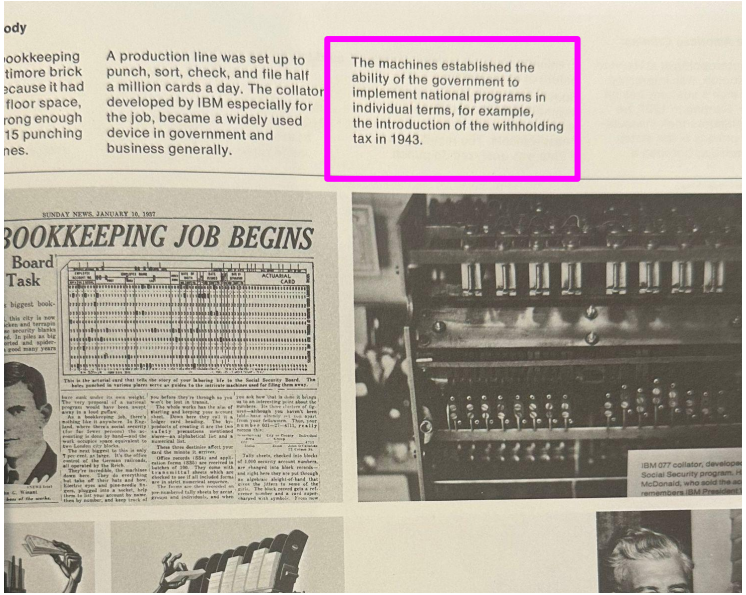
Kittler coined the term “discourse network” to designate the “the network of technologies and institutions that allow a given culture to select, store, and process relevant data” (Kittler, 369).

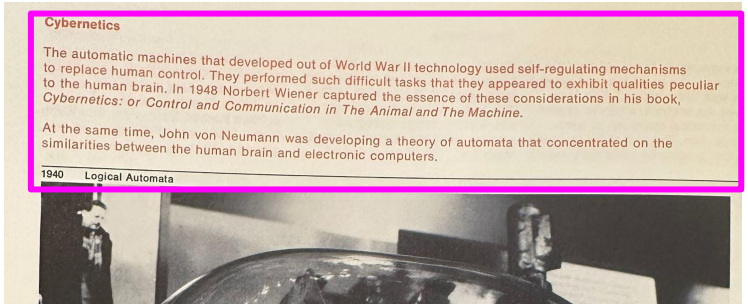
“Once calculating machines were available, it became impractical to use extraordinary mental skills for the rapid solution of arithmetic problems. Ordinary workers, equipped with machines, could do the job” (34, Eames).



“The machines established the ability of the government to implement national programs in individual terms, for example, the introduction of the withholding tax in 1943 (109, Eames)

“the automatic machines that developed out of World War II technology used self-regulating mechanisms to replace human control. They performed such difficult tasks that they appeared to exhibit qualities peculiar to the human brain” (146, Eames).



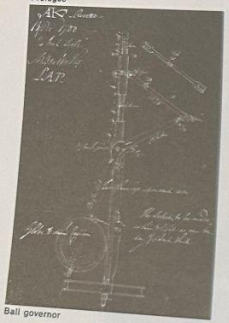


Logical Automata

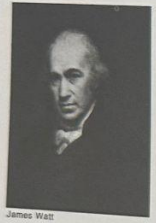
Machines that use information about their past performance to determine their next actions.

By 1890 logical automata, a class of machines that would combine logical decisionmaking with automatic control, had not yet appeared.

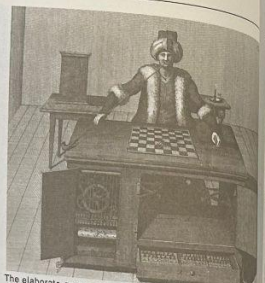
There were self-regulating automata, using such feedback mechanisms as the ball governor, and logic machines, such as Jevons' Logical Piano, but the two ideas had not been combined in a single type of machine.



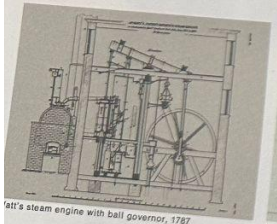
Ball governor



James Watt



The elaborate gears and compartments in von Kempelen's chess player cleverly concealed the man hidden inside.

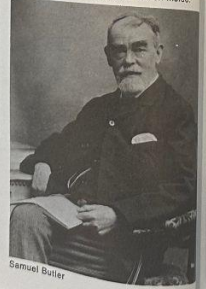


Watt's steam engine with ball governor, 1787

Leon Foucault's gyroscope, 1852

"Are we not ourselves creating our successors . . . daily giving them greater skill and supplying more and more of that self-regulating, self-acting power which will be better than any intellect?"

Samuel Butler, *Erewhon*, 1872



Samuel Butler

Feedback and Control

Controlling a machine with feedback—diverting part of the machine's work to direct the work it is about to do—became a familiar idea with the ball governor in James Watt's steam engine, and in 1830 Andrew Ure invented, in principle, the thermostat. Shortly after, Charles Babbage designed a method for his Analytical Engine, in which the result of one set of calculations determines which calculations the machine should do next.

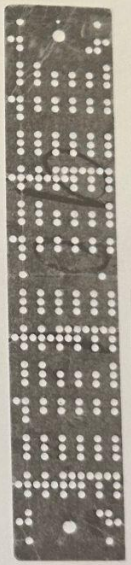
Attitudes Toward Machines

The popularity of mechanical automata, whether simple cam-operated figures or elaborate illusions such as the Wolfgang von Kempelen Chess Player, and the rapid growth of industrial machinery led to some early visions of an automated world. Samuel Butler began his futuristic novel *Erewhon* with an essay, "Darwin Among the Machines."

J. M. Jacquard

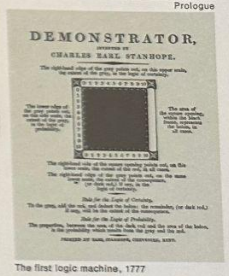
"the Analytical Engine *weaves algebraical patterns* just as the Jacquard loom weaves flowers and leaves."

– Ada Augusta, Countess of Lovelace (writing about Babbage's proposed machine)

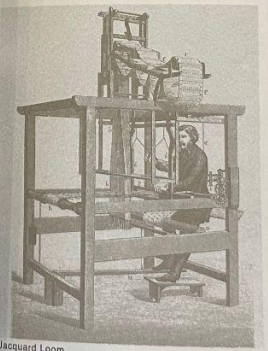


Jacquard loom card

George Boole

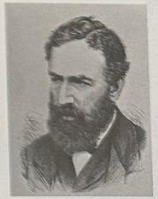


The first logic machine, 1777



Jacquard Loom

Jevons' logic machine



William Stanley Jevons

Programmed Machines

A line of punched paper cards automatically controls the patterns woven by the Jacquard loom, invented about 1800; but even earlier some musical instruments had been programmed to perform, controlled by rolls of punched paper.

Logic Machines

After George Boole published his method for solving problems in logic in 1854, a number of logic machines based on it were built. The first to solve a problem faster than could be done by hand was Jevons' Logical Piano in 1869.

Deleuze and Guattari:

Difference and Repetition (1968)

Passive Synthesis

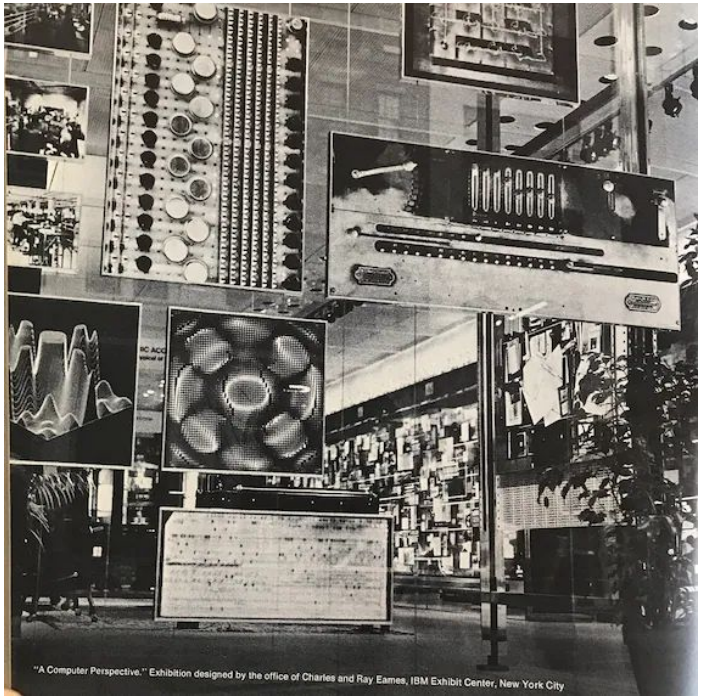
Anti-Oedipus (1972), *A Thousand Plateaus* (1980)

Connective Synthesis

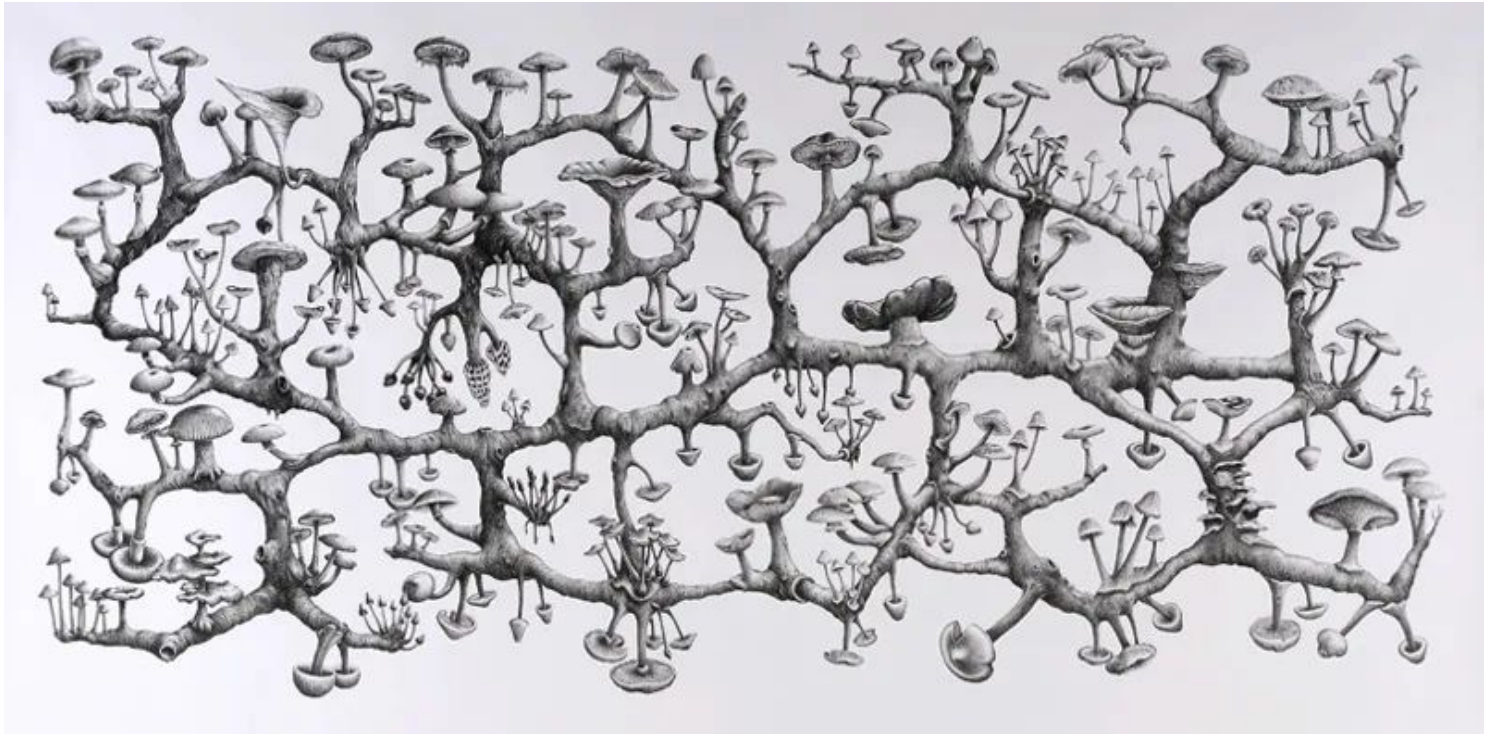
Disjunctive Synthesis

Conjunctive Synthesis

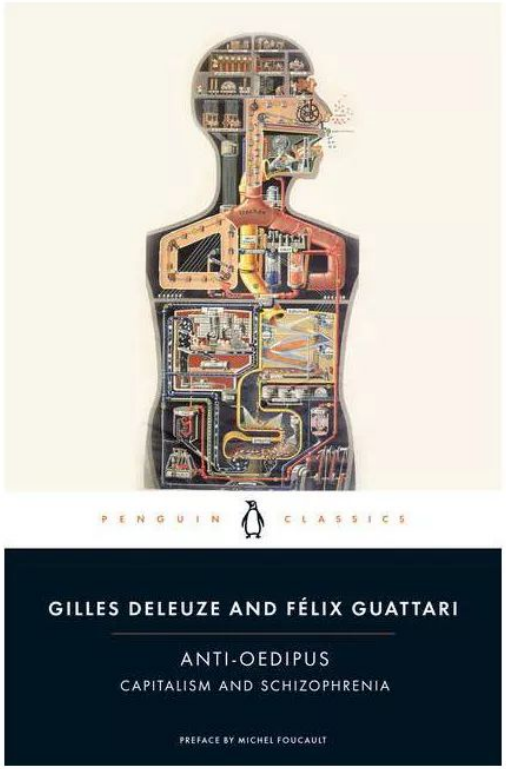
Disjunctive Synthesis

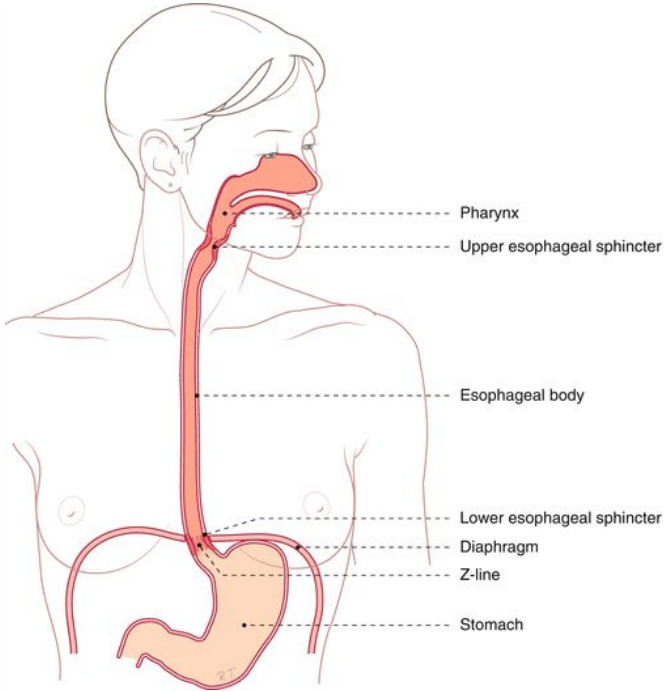


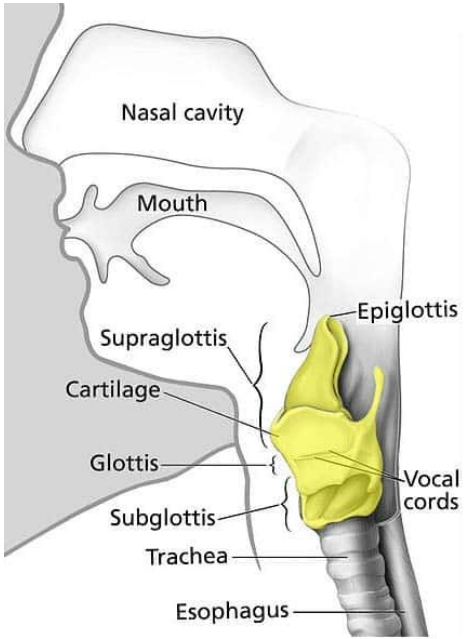
Disjunctive Synthesis



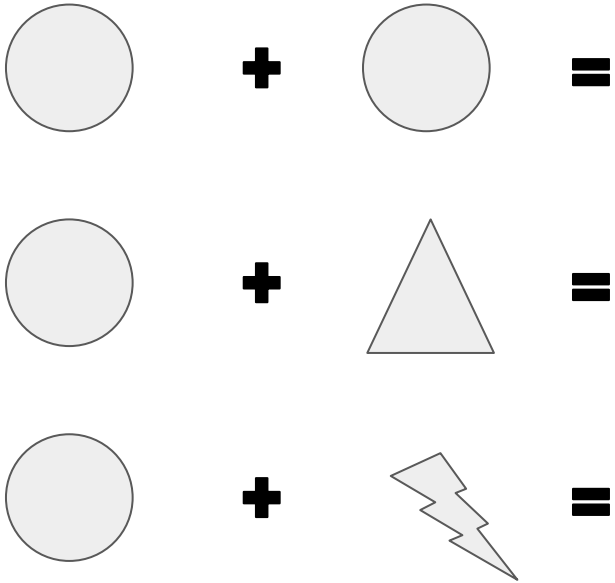
Connective Synthesis







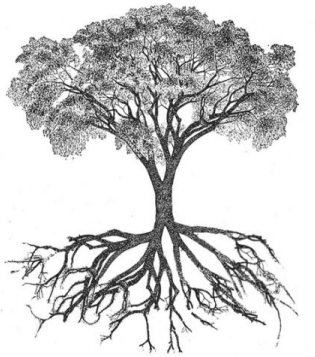
Connective Synthesis



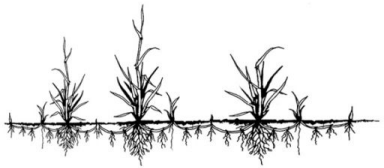
Connective Synthesis

Deleuze and Guattari introduce A Thousand Plateaus by outlining the concept of the rhizome:

1 and 2. Principles of connection and heterogeneity: "...any point of a rhizome can be connected to any other, and must be"

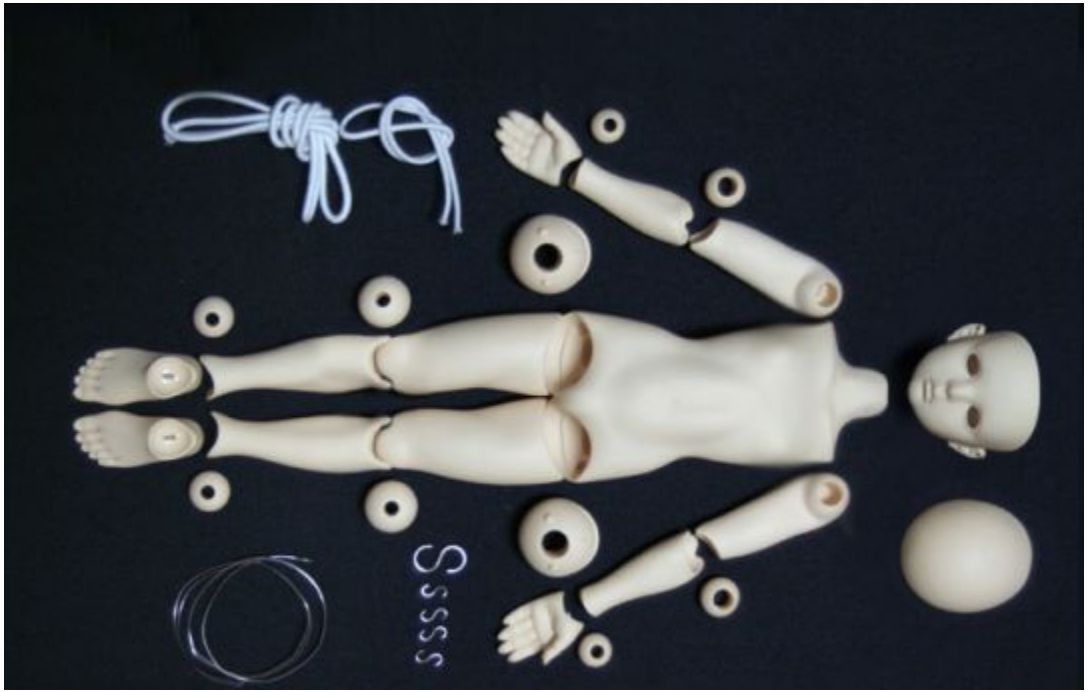


Tree



Rhizome

A Computer Perspective, 1971



Conjunctive Synthesis

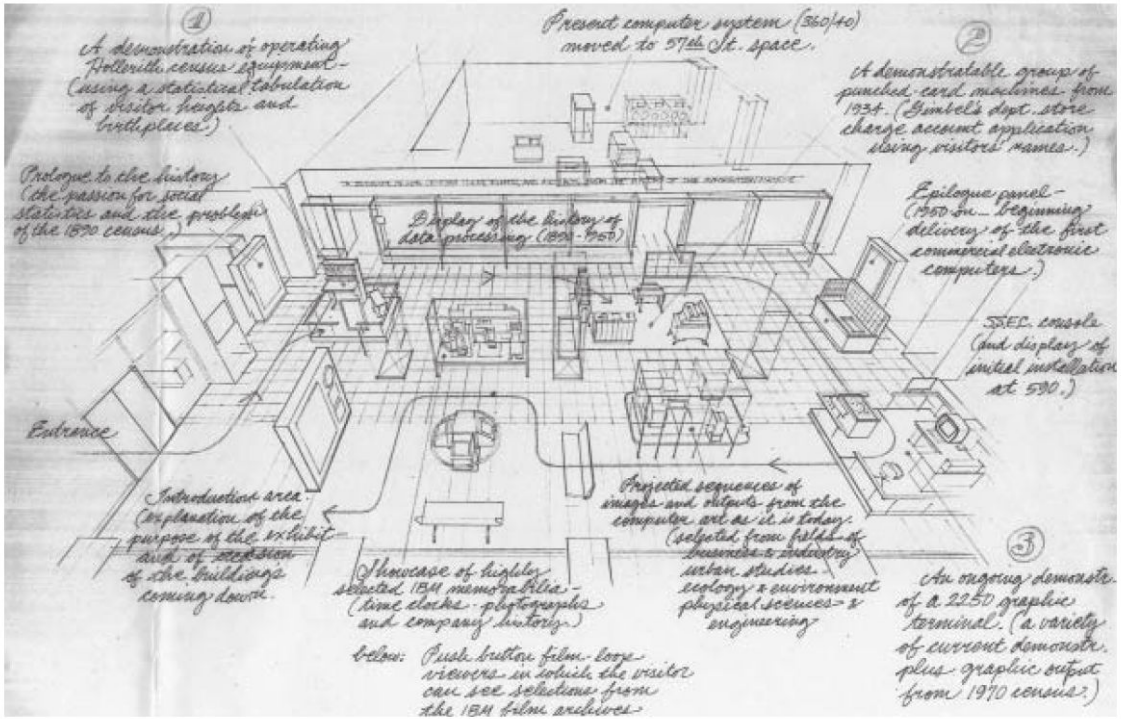


Figure 4.23 The Office of Charles and Ray Eames, *A Computer Perspective,* 1971. Aerial perspective of design of exhibit, ca. 1970. Copyright 2011 Eames Office, LLC (eamesoffice.com).

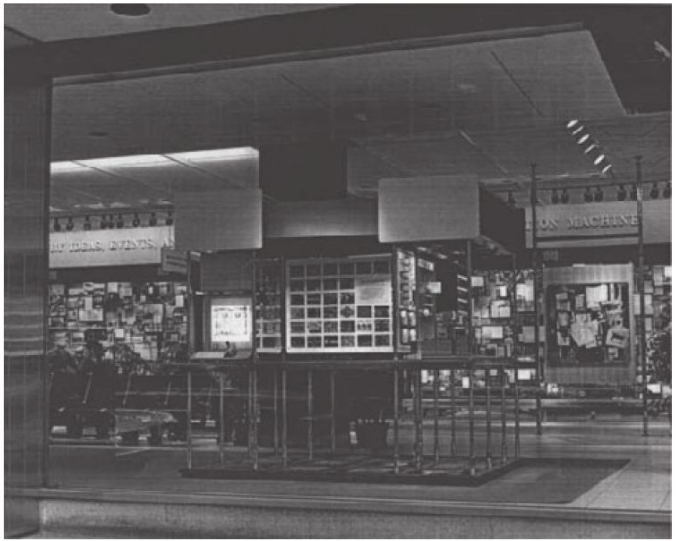


Figure 4.24 The Office of Charles and Ray Eames, Communications Rack, *A Computer Perspective,* 1971. View. Copyright 2011 Eames Office, LLC (eamesoffice.com).

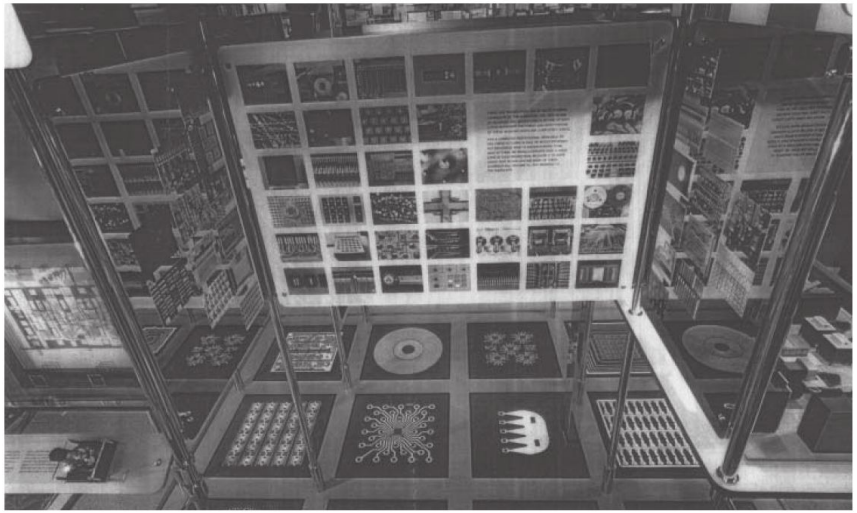


Figure 4.26 The Office of Charles and Ray Eames, Communications Rack, *A Computer Perspective,* 1971. View of "House of Cards Bay." Copyright 2011 Eames Office, LLC (eamesoffice.com).

Installation view of “Thinking Machines: Art and Design in the Computer Age, 1959-1989” at the Museum of Modern Art, New York. © MoMA

Installation view of “Thinking Machines: Art and Design in the Computer Age, 1959-1989” at the Museum of Modern Art, New York. © MoMA

Joseph Beuys: Utopia at the Stag Monuments

Joseph Beuys: Utopia at the Stag Monuments

Beuys & Duchamp: Artists of the Future, Kunstmuseen Krefeld, Kaiser Wilhelm Museum, Krefeld, Germany, 2021. © Association Marcel Duchamp, ADAGP, Paris / VG Bild-Kunst, Bonn 2021. Photo: Dirk Rose.

Discussion

Questions

1: What are some of your favourite exhibition experiences？

2: The collaboration between IBM and Eames Office raises new questions on the role of corporate patronage in art and design. How does contemporary corporate patronage influence the creative process and thematic choices within exhibition design? How might these collaborations impact the perception of the artwork or exhibition, and how does it influence the public's engagement with art and design in a corporate-sponsored context?

3. Do you think of the IBM exhibition as purely a design strategy with commercial values, or could “computers” actually be considered as art ?

4.How would you frame the human/machine boundary. What’s your attitudes towards the dissolving of boundaries between the technological and the biological? (Especially in the age of GenAI)

5. Can we extrapolate the idea of narcissism as medium of video to a video that is not directly a video of one’s self, for example the IBM exhibition videos?