

MACHINES LEARN TO SEE

by Polina Rud

1. SEEING AS A REGIME

- Who defines the viewpoint from which the world becomes visible?
- How perspective became a tool of knowledge — and power.

3. IMAGE AS ORGANIZER OF REALITY

- When images stopped recording the world and started producing memory, events, and belief.

2. MECHANICAL EYE

- When machines began to see for us.
- How cameras, film, and devices expanded — and displaced — human perception.

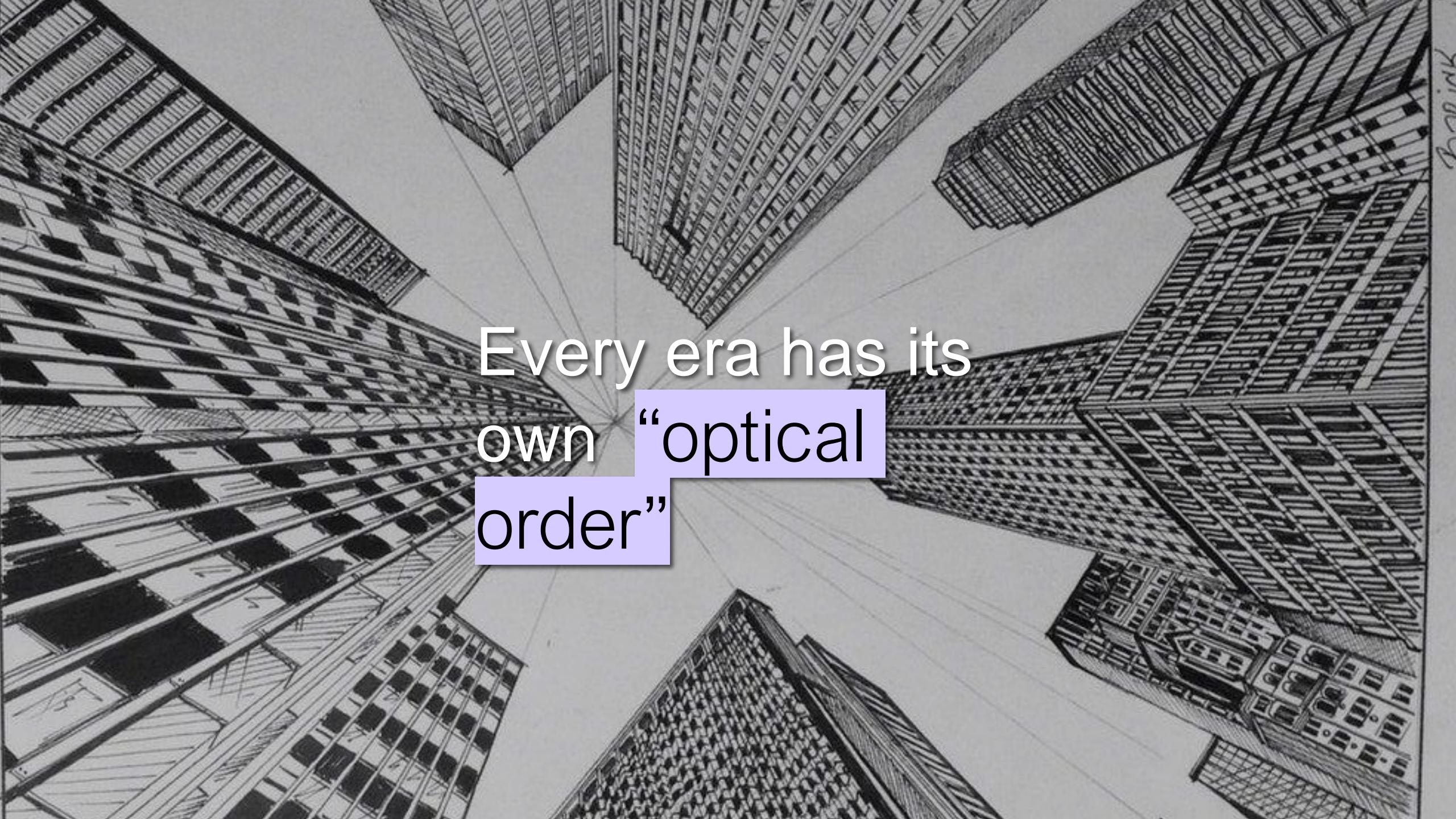
4. FROM STORY TO DATA BASE

- When images became data.
- When narrative gave way to systems, networks, and generative structures.



SEEING AS A REGIME WHO DEFINES THE PERSPECTIVE

,

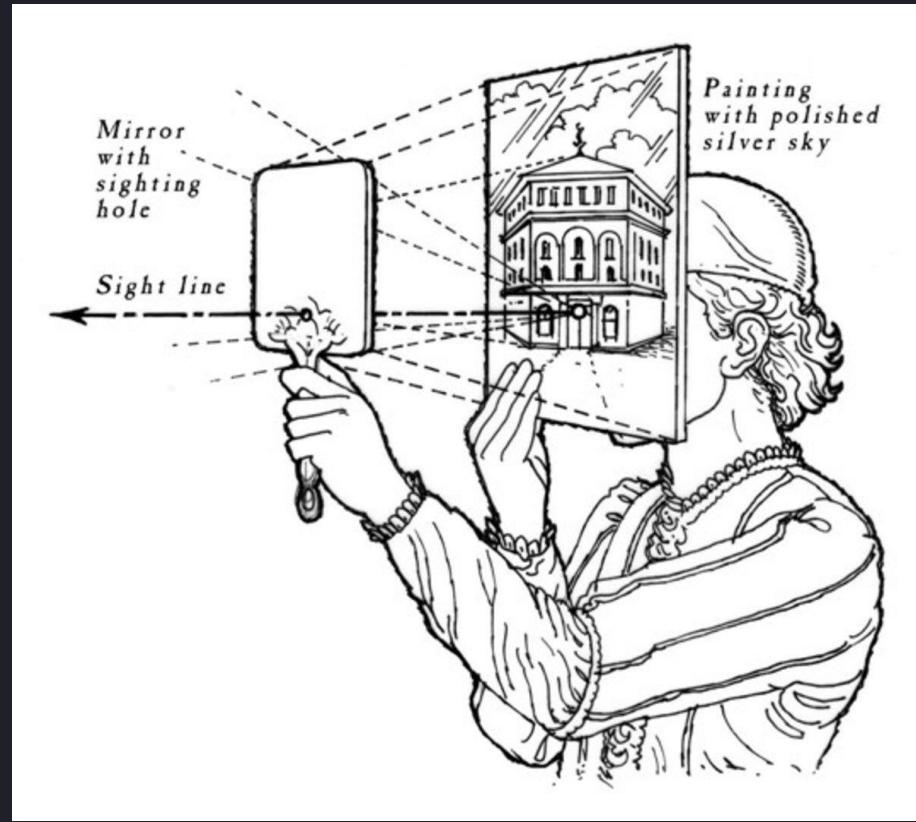
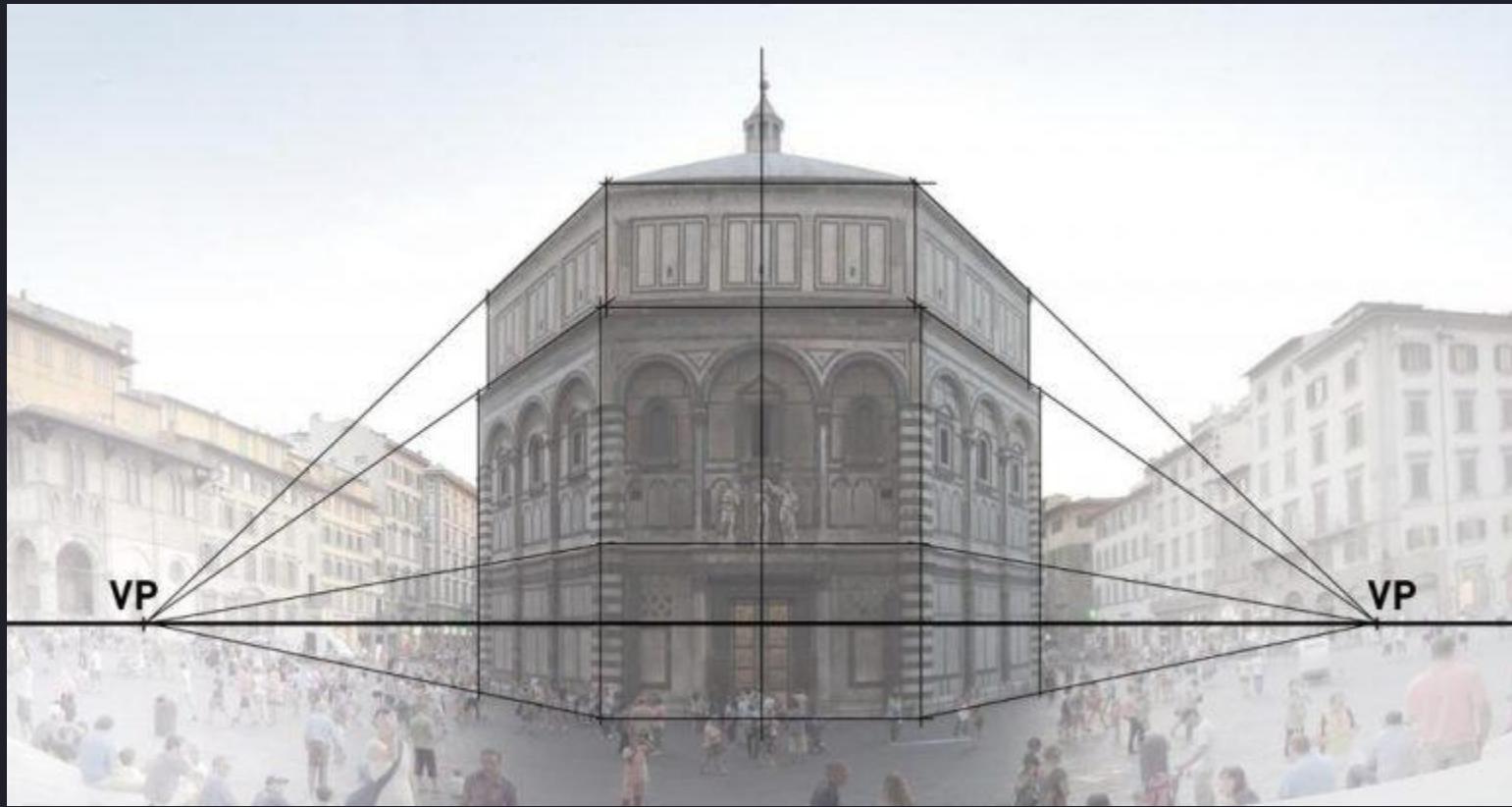


Every era has its
own “optical
order”



In Renaissance the
world became
calculable space

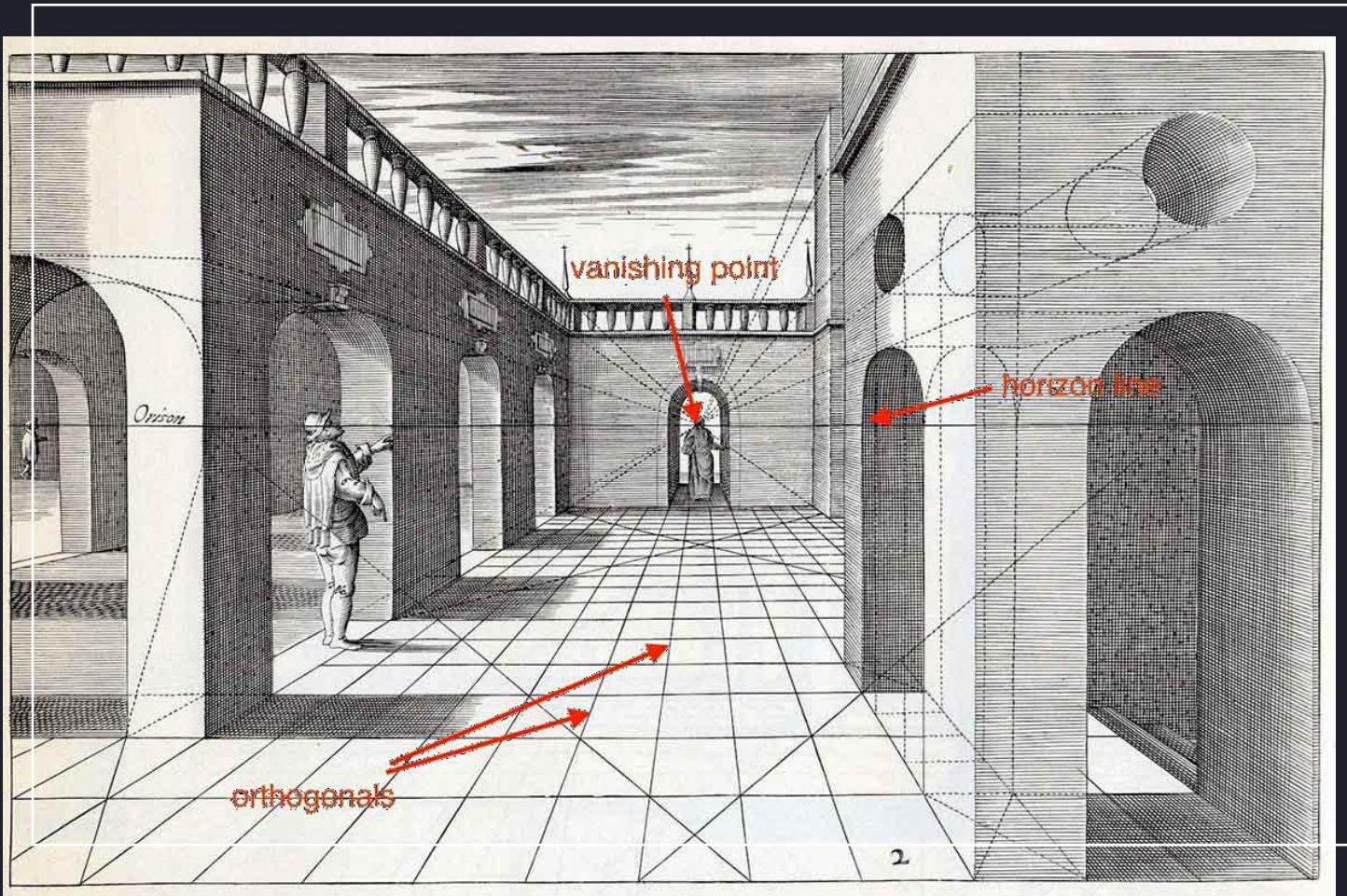
Who pushed
this shift?



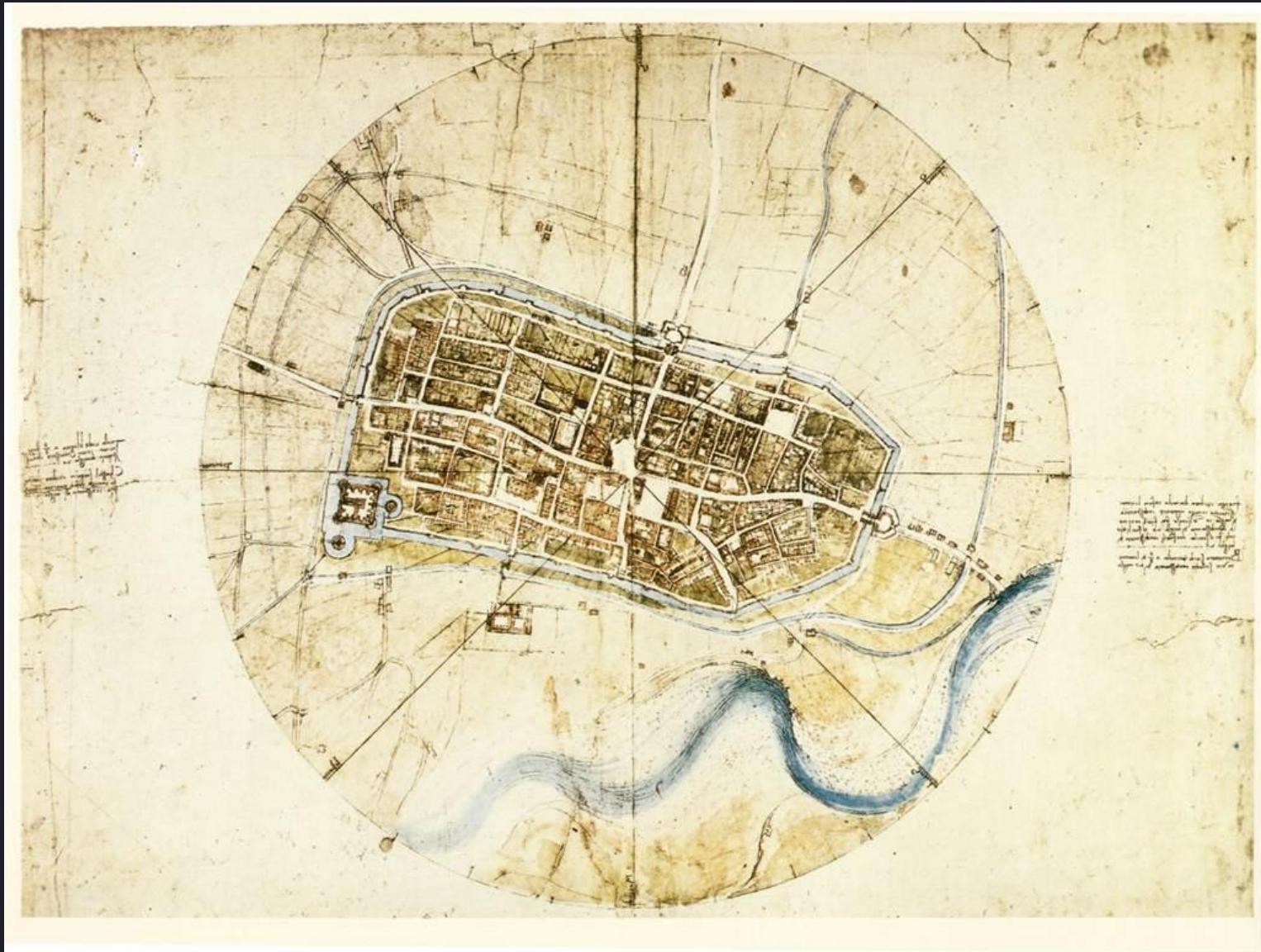
Filippo Brunelleschi demonstrated linear perspective

a mathematical system in which all lines converge to a vanishing point, creating the illusion of three-dimensional space





The universe became
divisible, frameable,
organizable
by a powerful eye.



Brilliant and dangerous

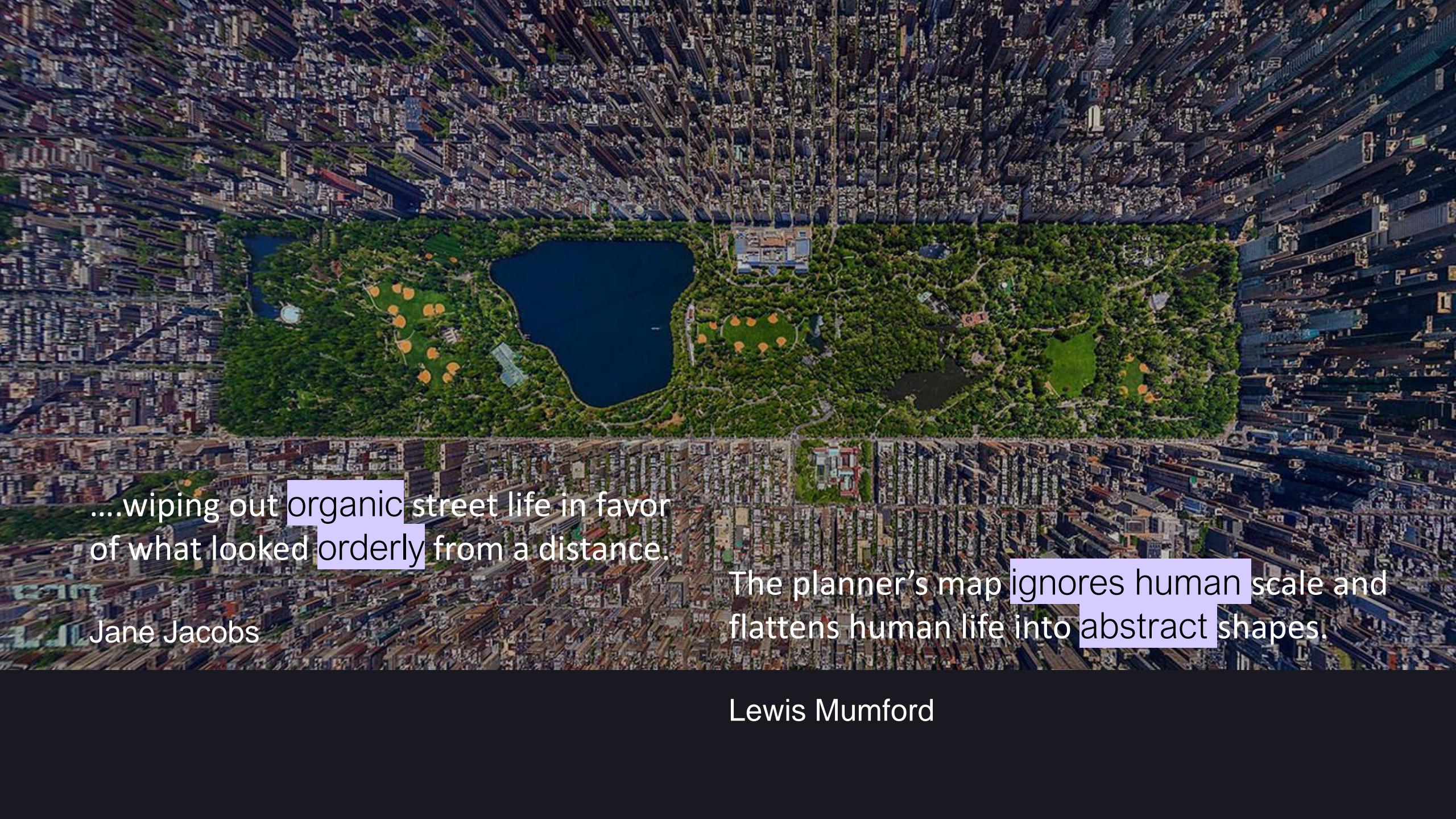
Leonardo da Vinci's 1502
map of Imola, a precursor
to satellite imagery



Modern humans no longer encounter things as beings, but as resources: forests become timber inventory, rivers become hydropower, a mountain becomes something you can grid, then mine.

Martin Heidegger

Vision becomes a tool for capitalism

An aerial photograph of a city, likely New York City, showing a dense grid of buildings. In the center is a large, green park with a dark blue lake. The park is filled with trees and some open grassy areas. The surrounding city blocks are packed closely together.

....wiping out organic street life in favor
of what looked orderly from a distance.

Jane Jacobs

The planner's map ignores human scale and
flattens human life into abstract shapes.

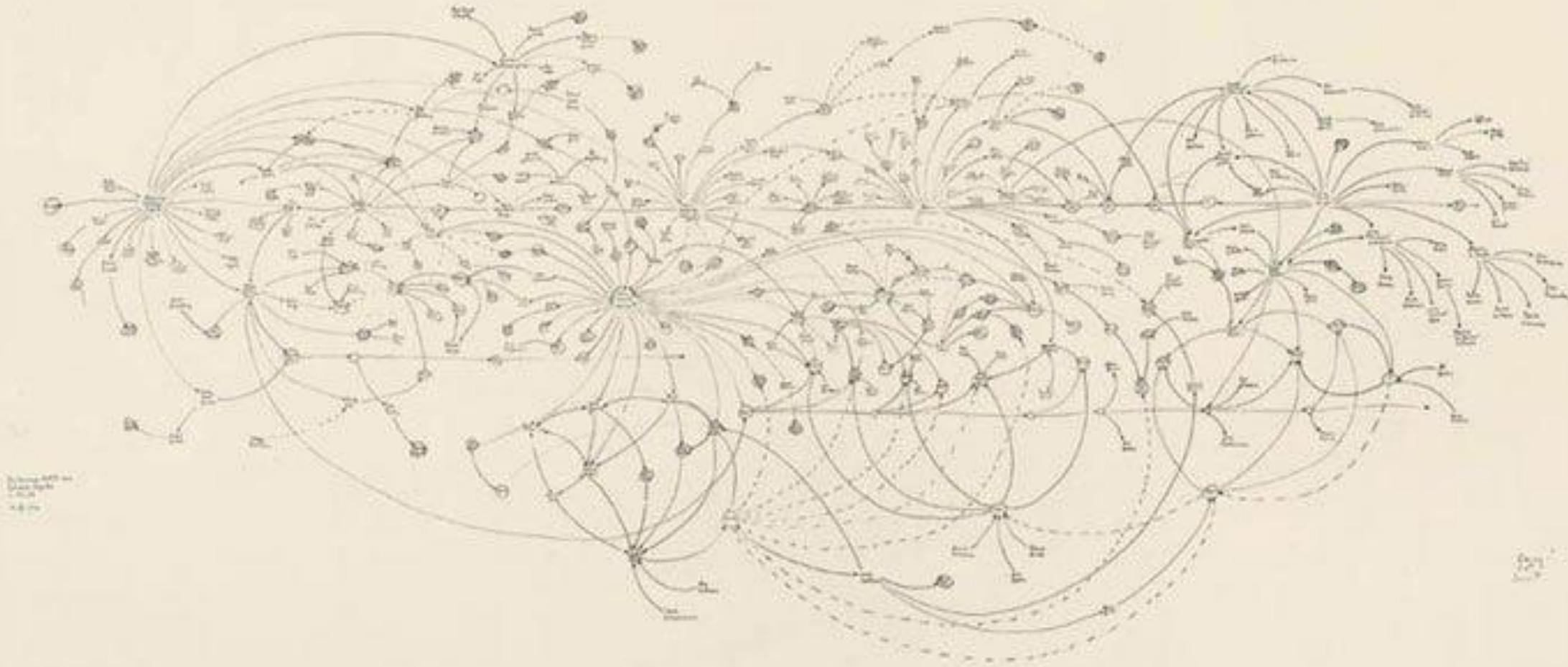
Lewis Mumford



Chicago, Board of Trade II',
Andreas Gursky, 1999



Amazon,
Andreas Gursky, 2016

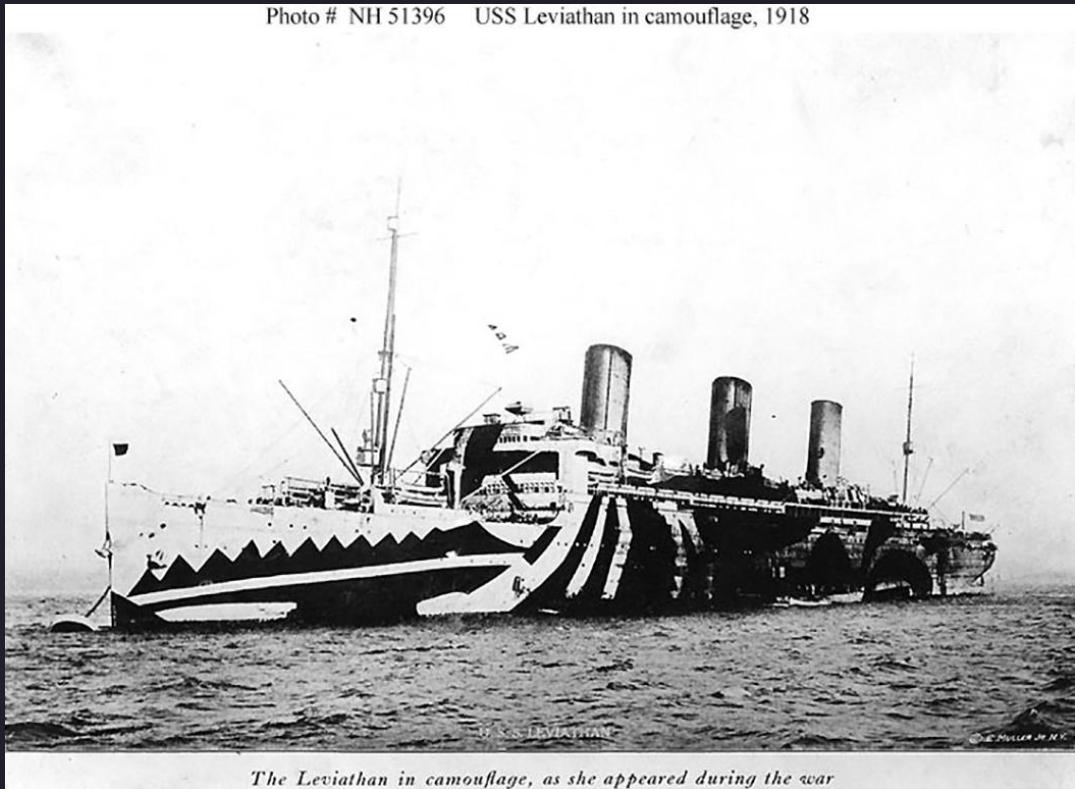


George W. Bush, Harken Energy, and Jackson Stephens, c. 1979–90,
Mark Lombardi



Guernica, 1937,
Pablo Picasso

Photo # NH 51396 USS Leviathan in camouflage, 1918



The Leviathan in camouflage, as she appeared during the war



Once again a discovery about vision
was appropriated by power



David Hockney
rejected the tyranny of single-point perspective



Perspective is a choice
David Hackney

KEY TAKEAWAYS

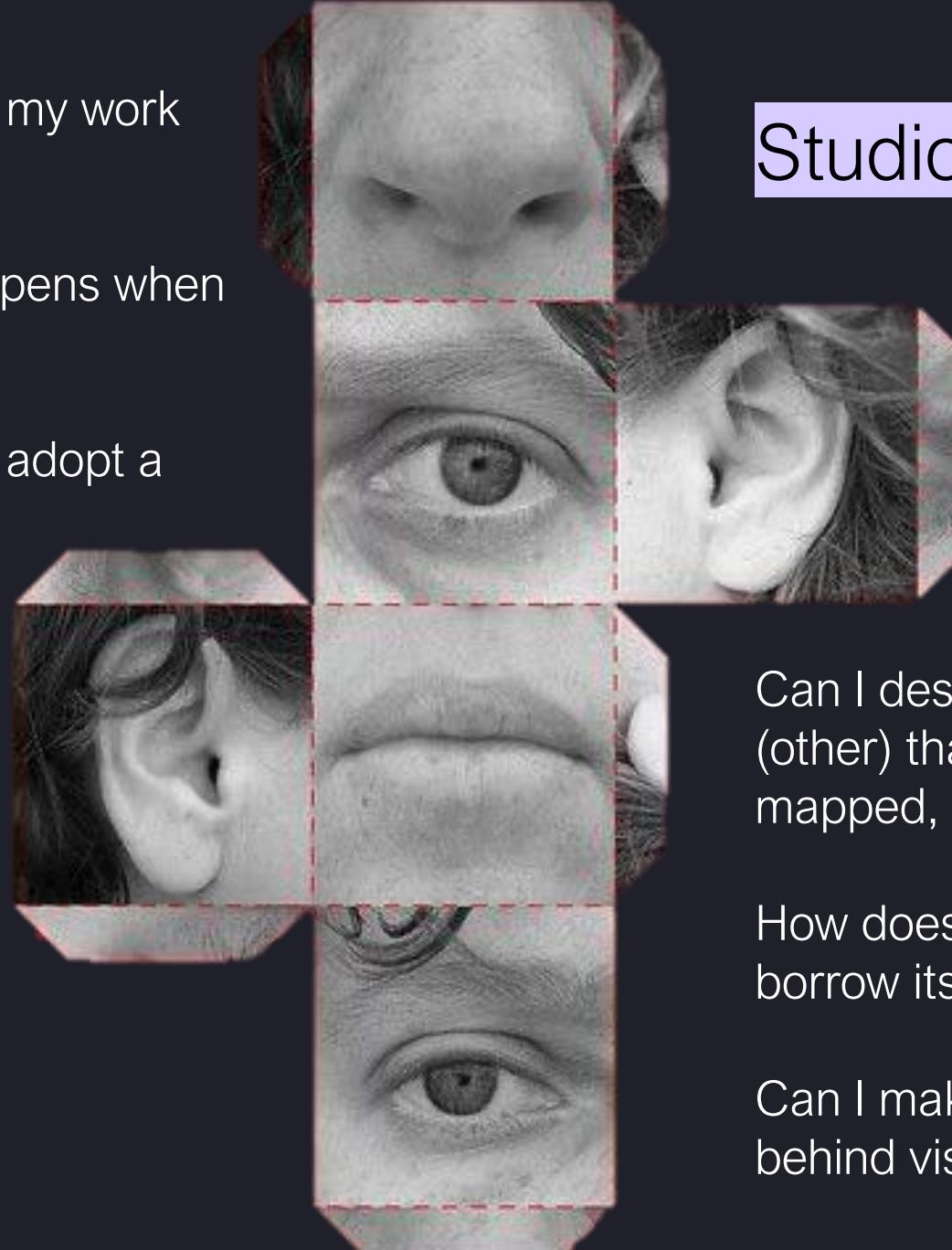
- Seeing is never neutral. Every era builds an optical order.
- Linear perspective reorganized the world, placing the viewer at the center and turning space into something measurable, ownable, governable.
- From Brunelleschi's peephole to Leonardo's maps, vision became a technology of control — a way to manage land, bodies, and resources.
- Modernity inherited this gaze. Cities, landscapes, and even people were redesigned to fit the view from above — the view of institutions, markets, and administrations.
- Contemporary artists mimic power's viewpoint to reveal its logic and fracture perspective to restore conflict, memory, and multiplicity.

What viewpoint is assumed in my work
— and who benefits from it?

If perspective is a choice, happens when
I change or refuse it?

What remains invisible when I adopt a
“view from above”

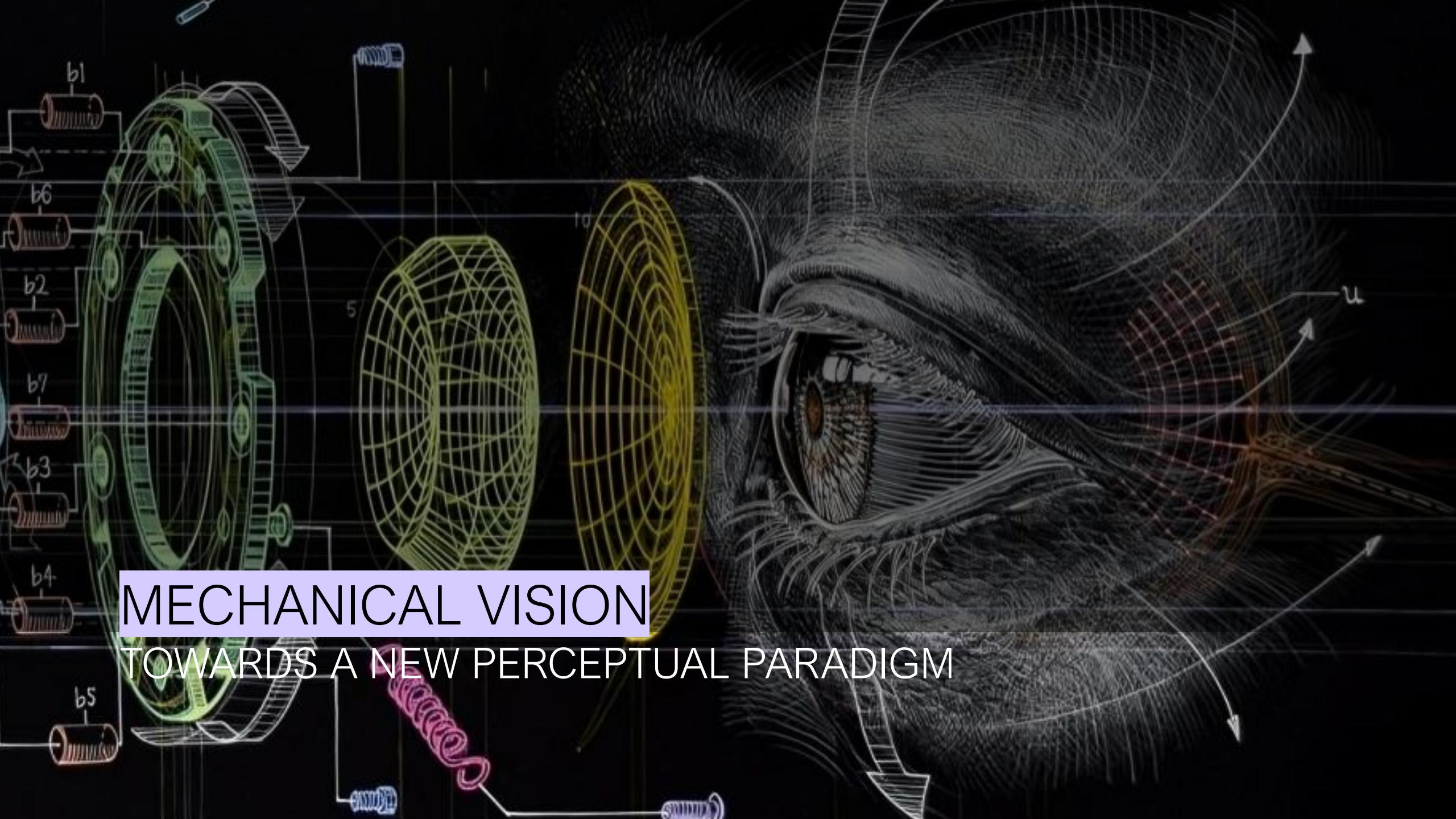
Studio Reflections



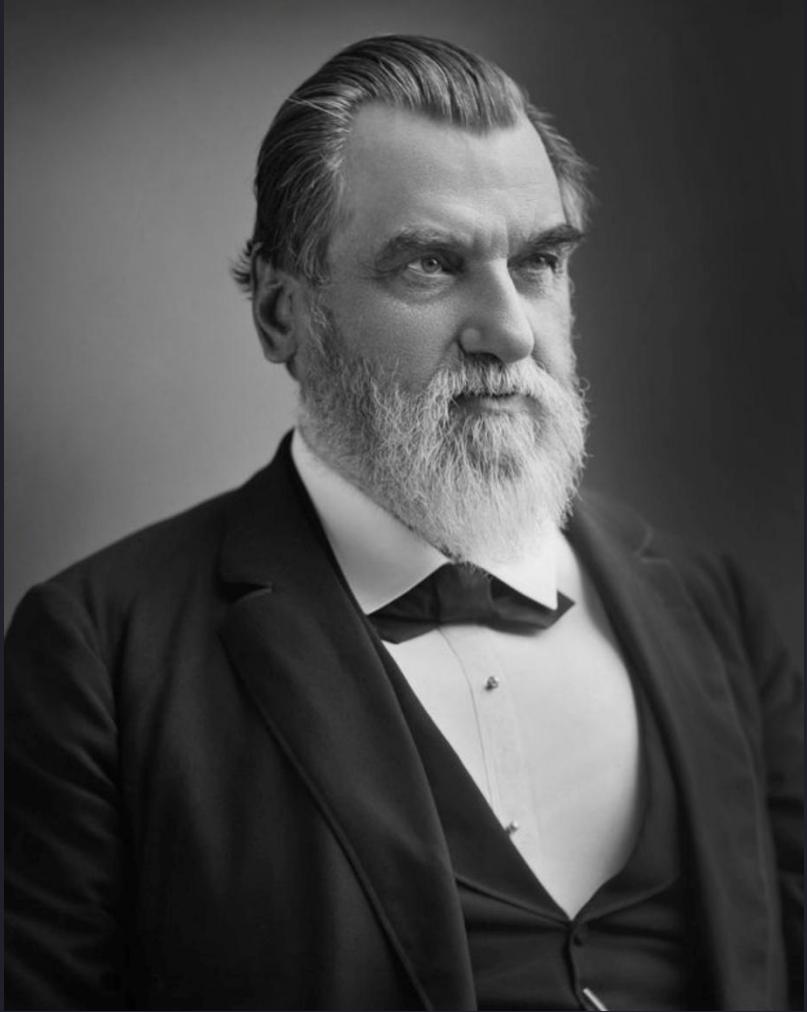
Can I design an image/system/code
(other) that resists being owned,
mapped, or consumed?

How does power see — and how can I
borrow its gaze to expose it?

Can I make visible the infrastructure
behind vision itself?

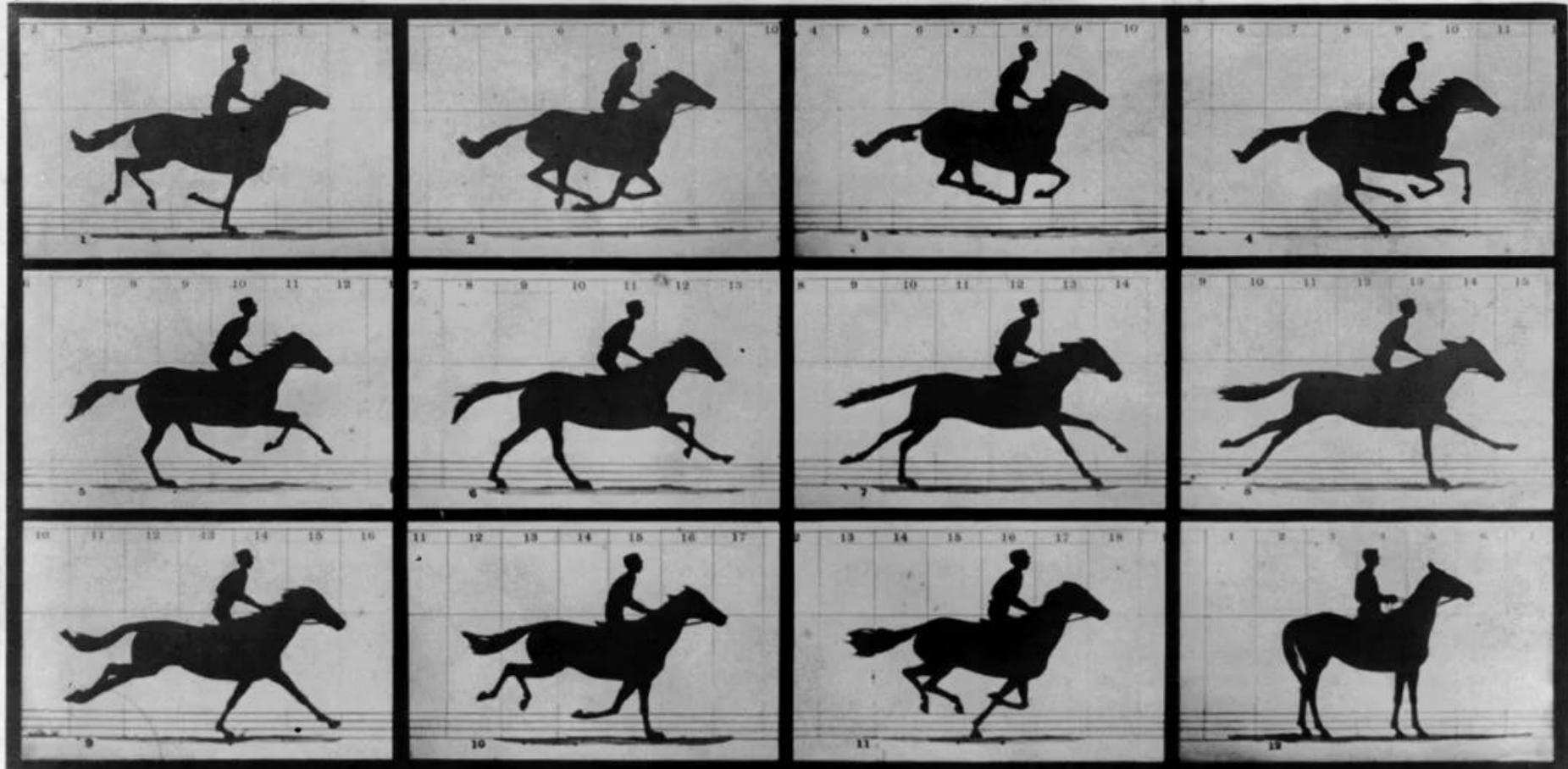


MECHANICAL VISION TOWARDS A NEW PERCEPTUAL PARADIGM



During a horse's gallop,
do all four hooves ever
leave the ground?

Leland Stanford



Copyright, 1878, by MUYBRIDGE.

MORSE'S Gallery, 417 Montgomery St., San Francisco.

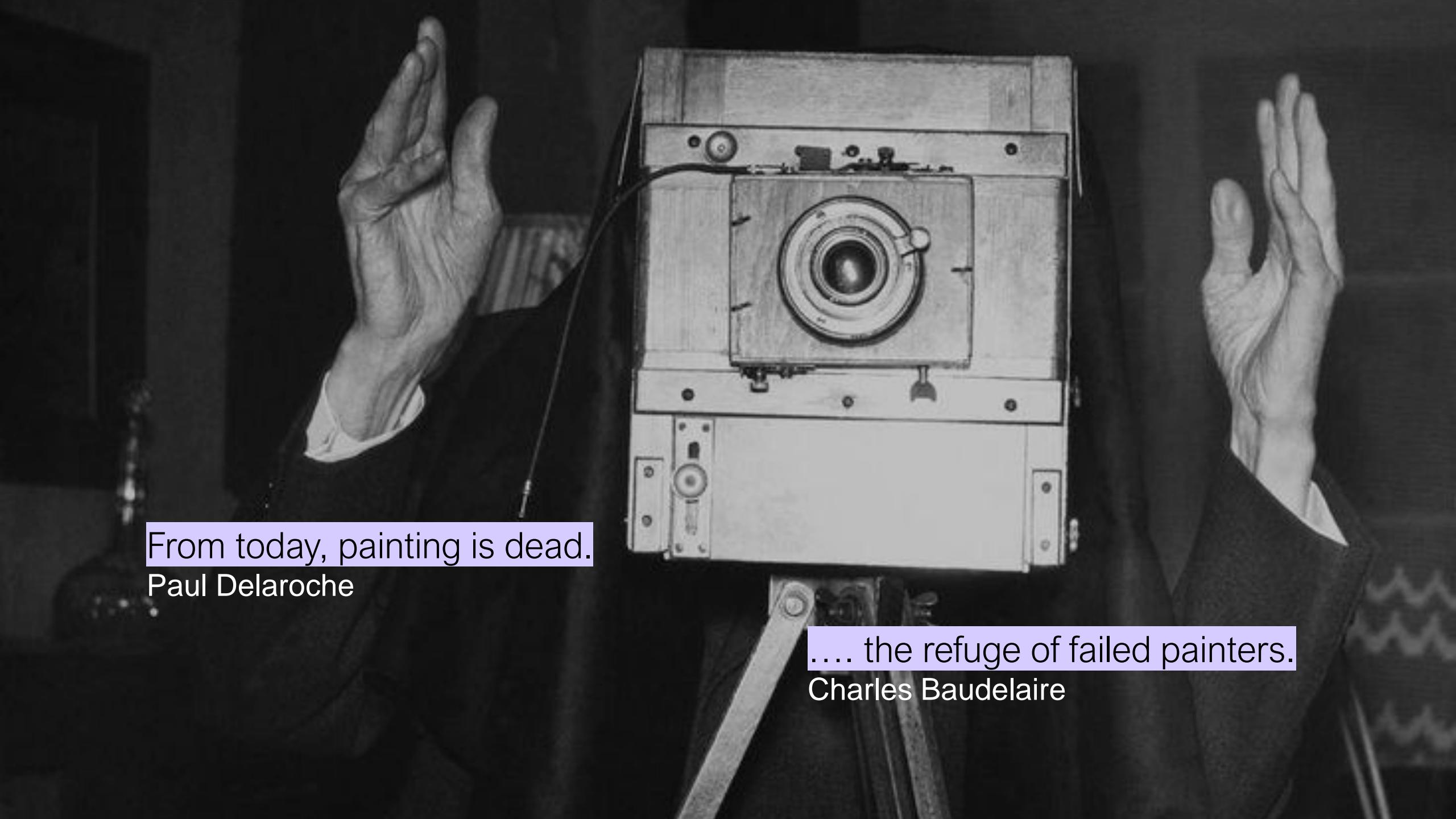
THE HORSE IN MOTION.

Illustrated by
MUYBRIDGE.

AUTOMATIC ELECTRO-PHOTOGRAPH.

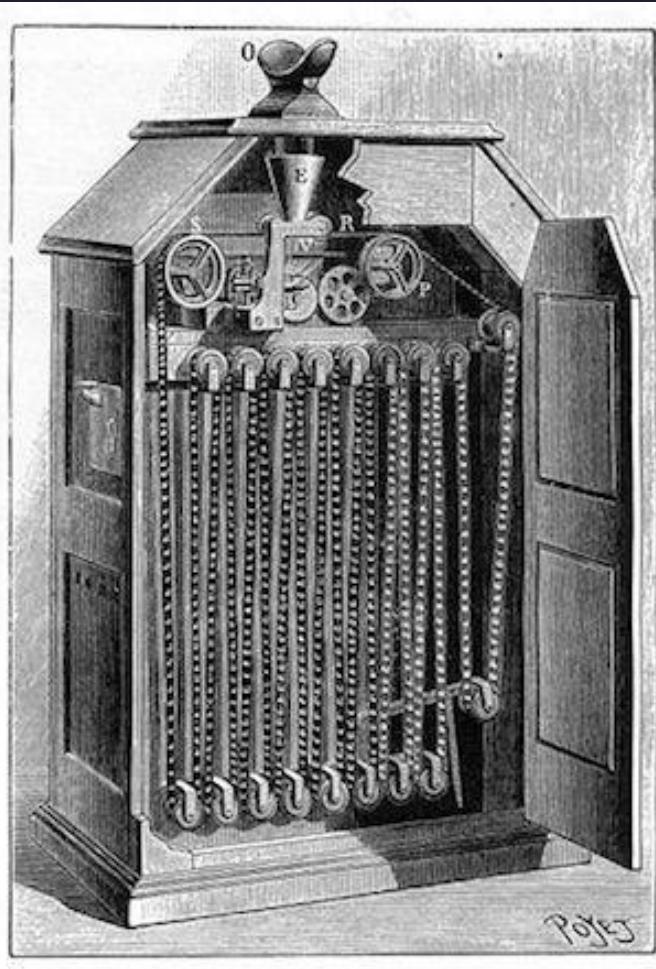
"SALLIE GARDNER," owned by LELAND STANFORD; running at a 1.40 gait over the Palo Alto track, 19th June, 1878.

The negatives of these photographs were made at intervals of twenty-seven inches of distance, and about the twenty-fifth part of a second of time; they illustrate consecutive positions assumed in each twenty-seven inches of progress during a single stride of the mare. The vertical lines were twenty-seven inches apart; the horizontal lines represent elevations of four inches each. The exposure of each negative was less than the two-thousandth part of a second.

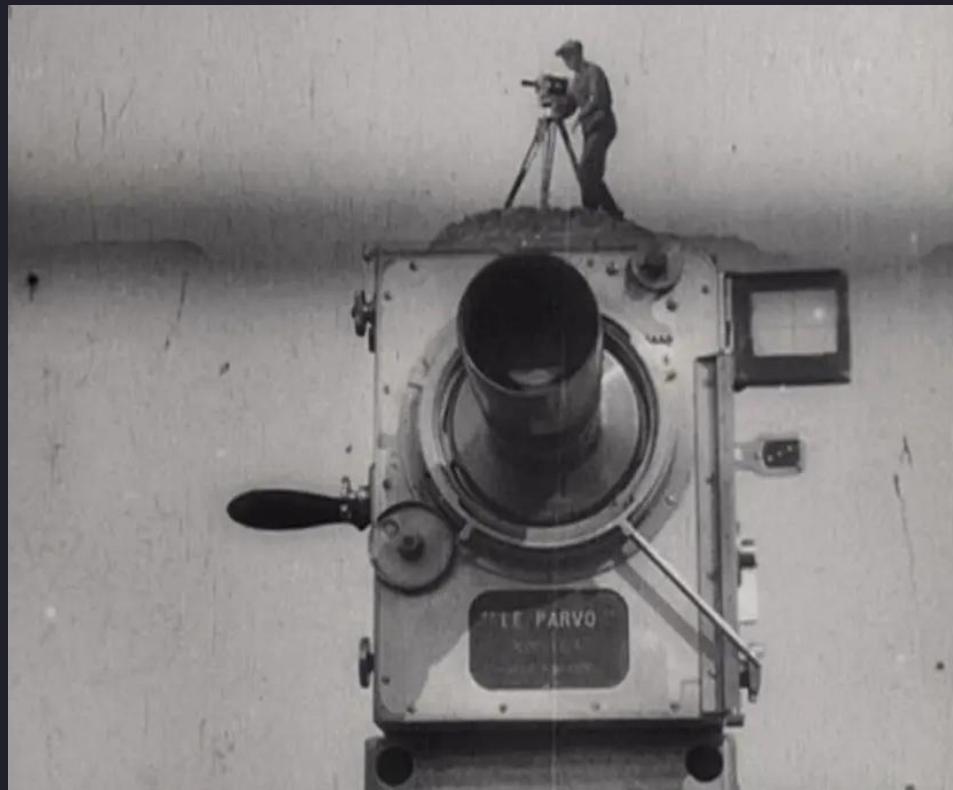


From today, painting is dead.
Paul Delaroche

.... the refuge of failed painters.
Charles Baudelaire



The Kinetoscope was
the forerunner of the motion

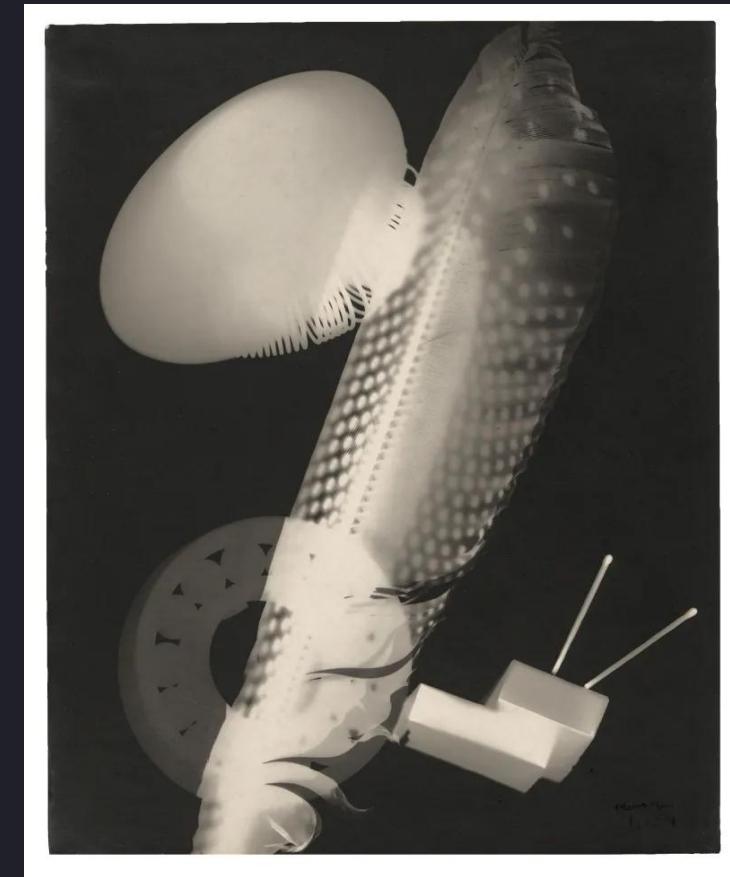
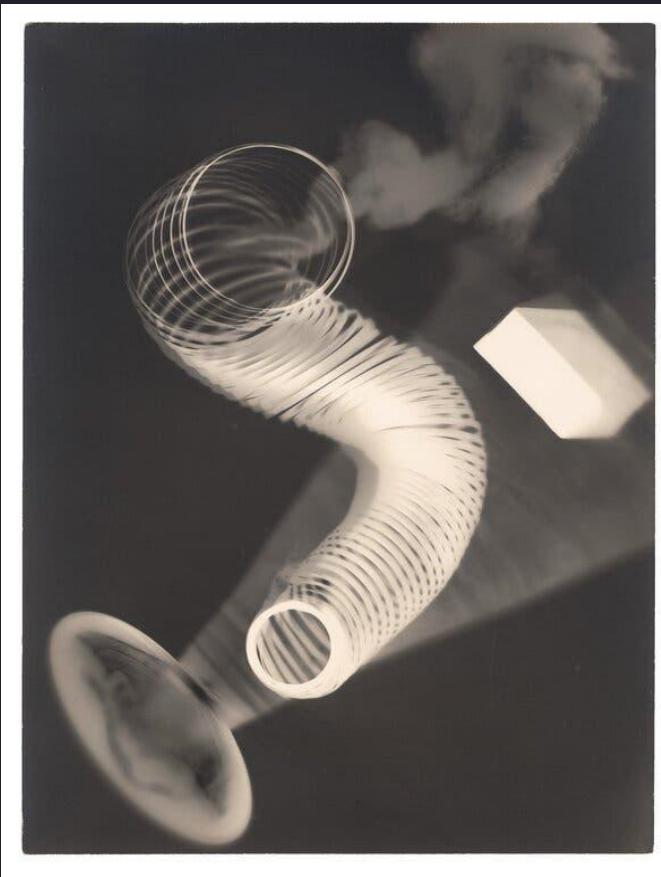


kino-eye,
more perfect than the human eye
Dziga Vertov

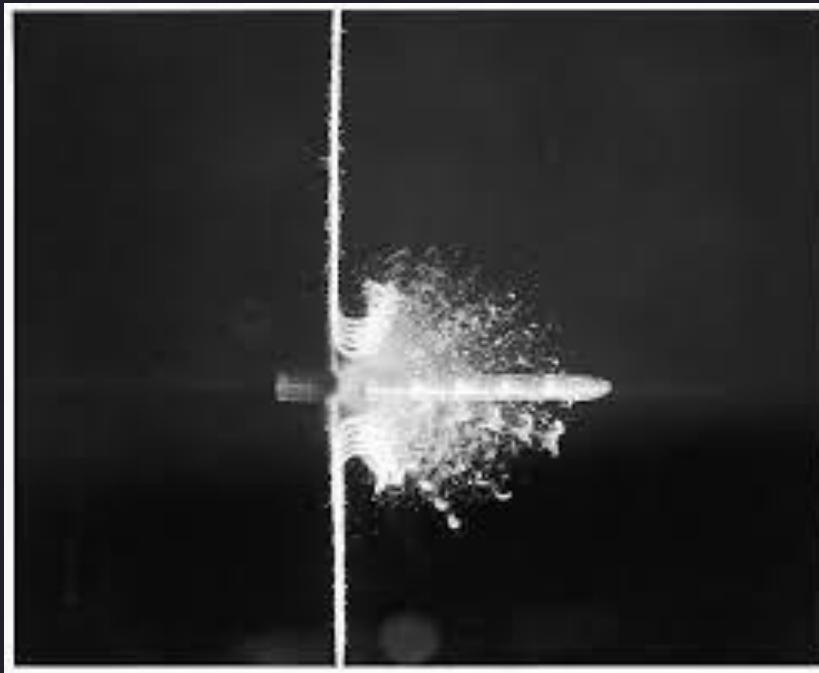


It is through photography
that we first discover the
existence of this optical
unconscious.

Walter Benjamin



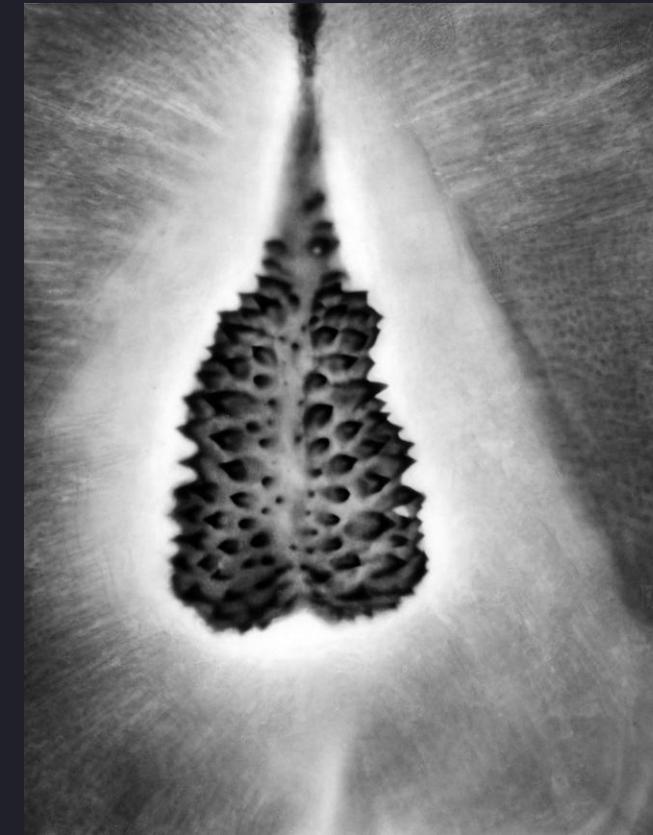
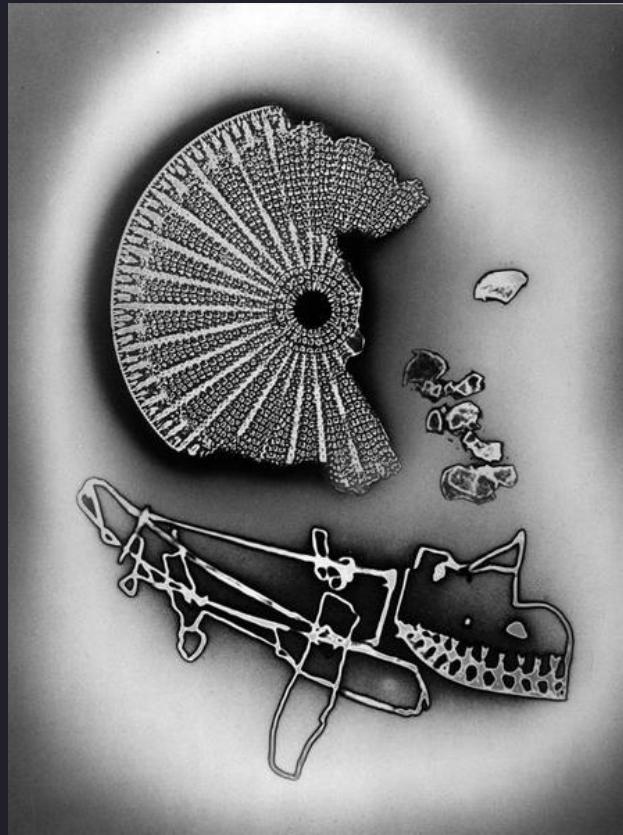
Rayographs,
Man Ray



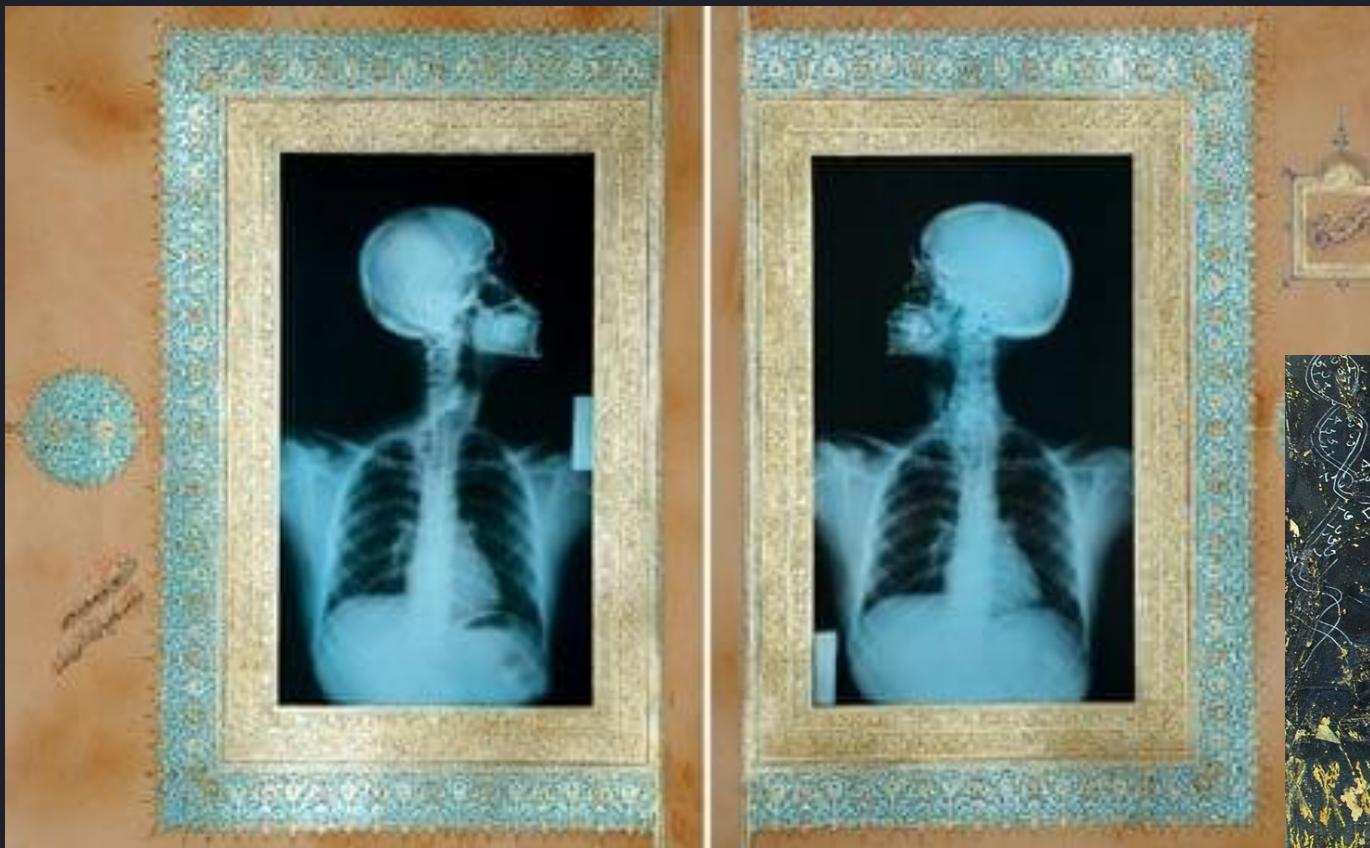
Experiments,
Harold Edgerton



Michael Wesely



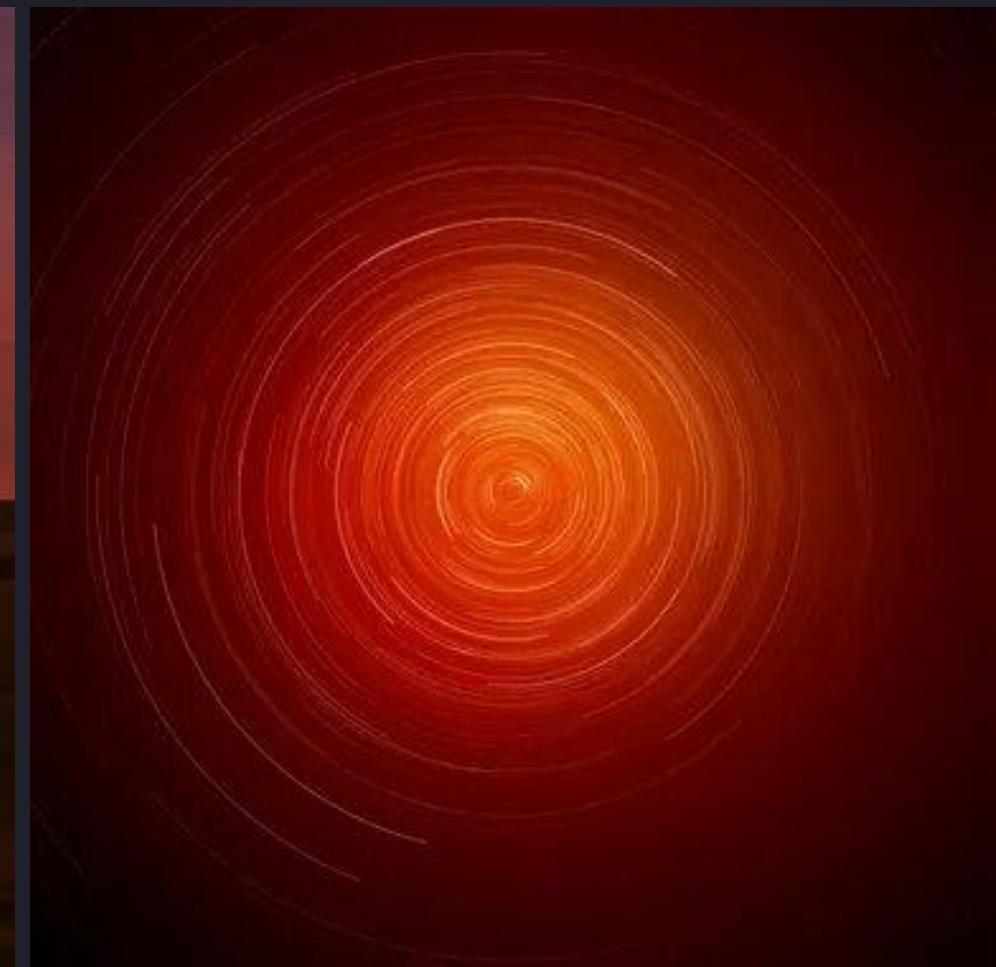
Carl Strüwe, Archetype of Individuality, 1933



Ahmed Mater



NSA_GCHQ Surveillance Base, Bude,
Cornwall, UK, 2014, Trevor Paglen



STTS-1 and Two Unidentified
spacecraft over Carson City (Space
Tracking and Surveillance System,
USA

KEY TAKEAWAYS

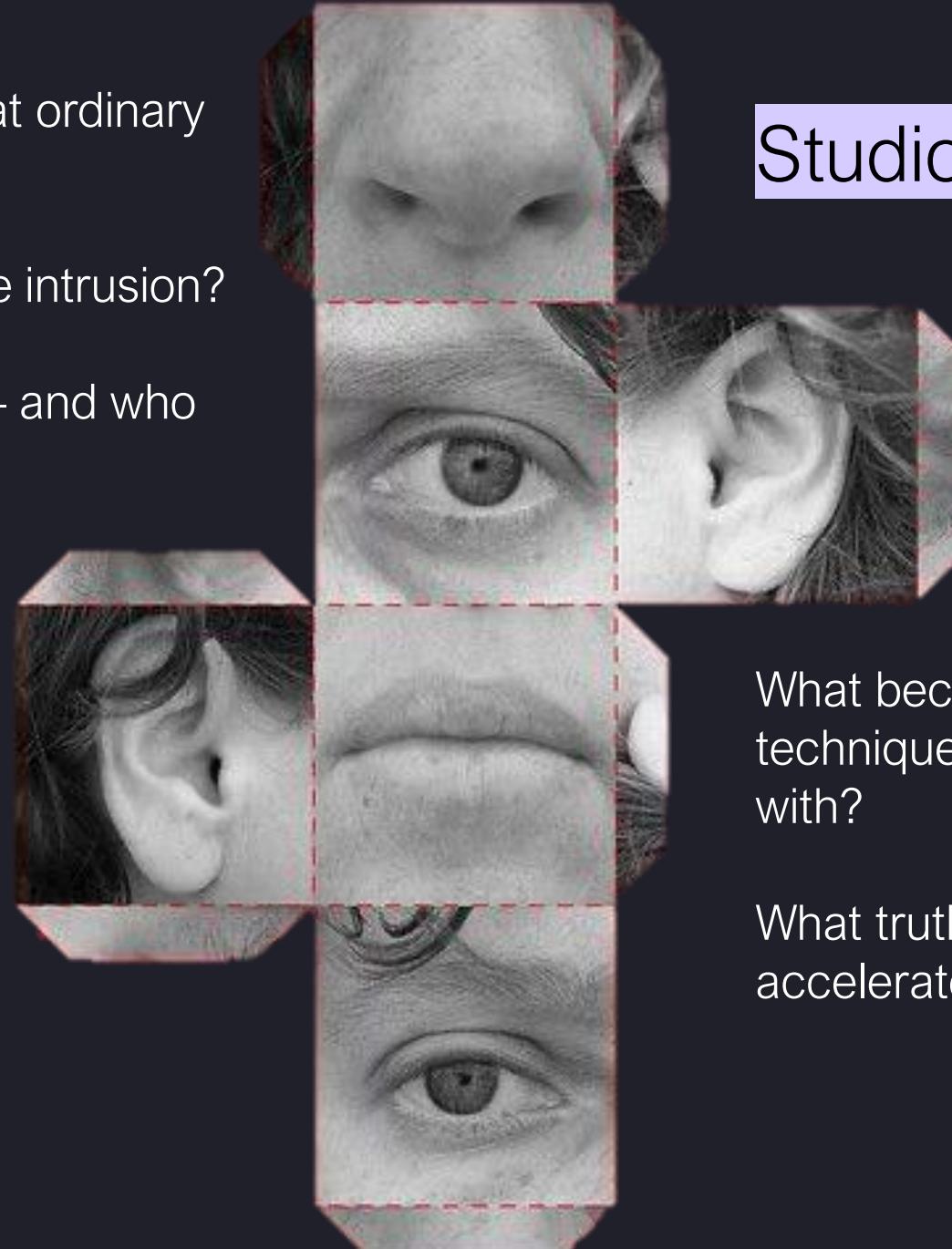
- Photography and film broke the monopoly of the human eye. Vision became mechanical, repeatable, mobile.
- Machines began to see what we could not: the too-fast, the too-small, the too-distant, the hidden. The camera re-edited perception — revealing an optical unconscious beneath ordinary sight.
- Once vision is mediated, reality is no longer singular. It can be frozen, stretched, dissected, accumulated, or haunted.

What does my work reveal that ordinary sight ignores?

When does revelation become intrusion?

What lies beneath surfaces — and who has the right to see it?

Studio Reflections



What becomes visible only through a technique, technology you are working with?

What truths appear when time is slowed, accelerated, or accumulated?

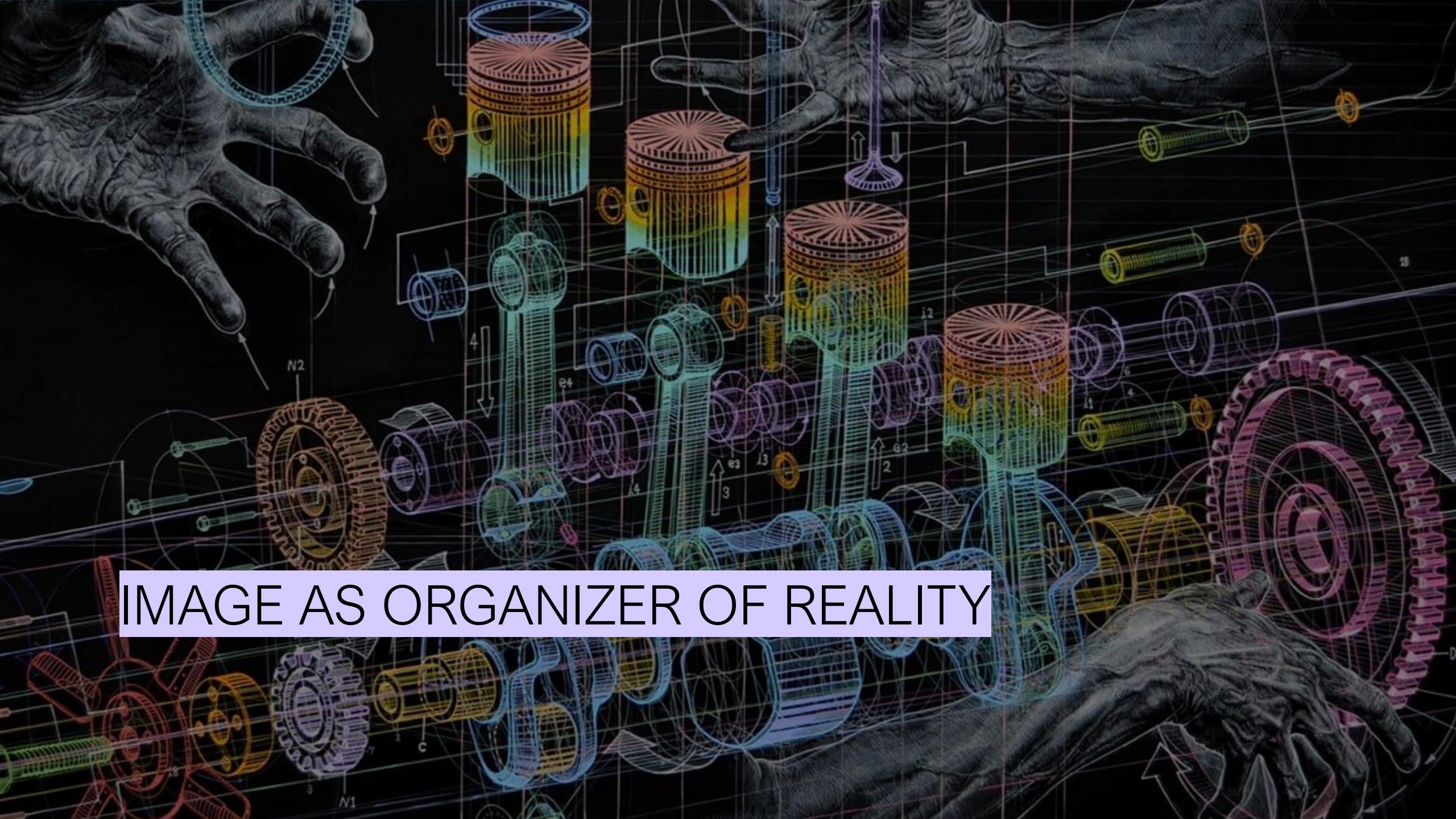
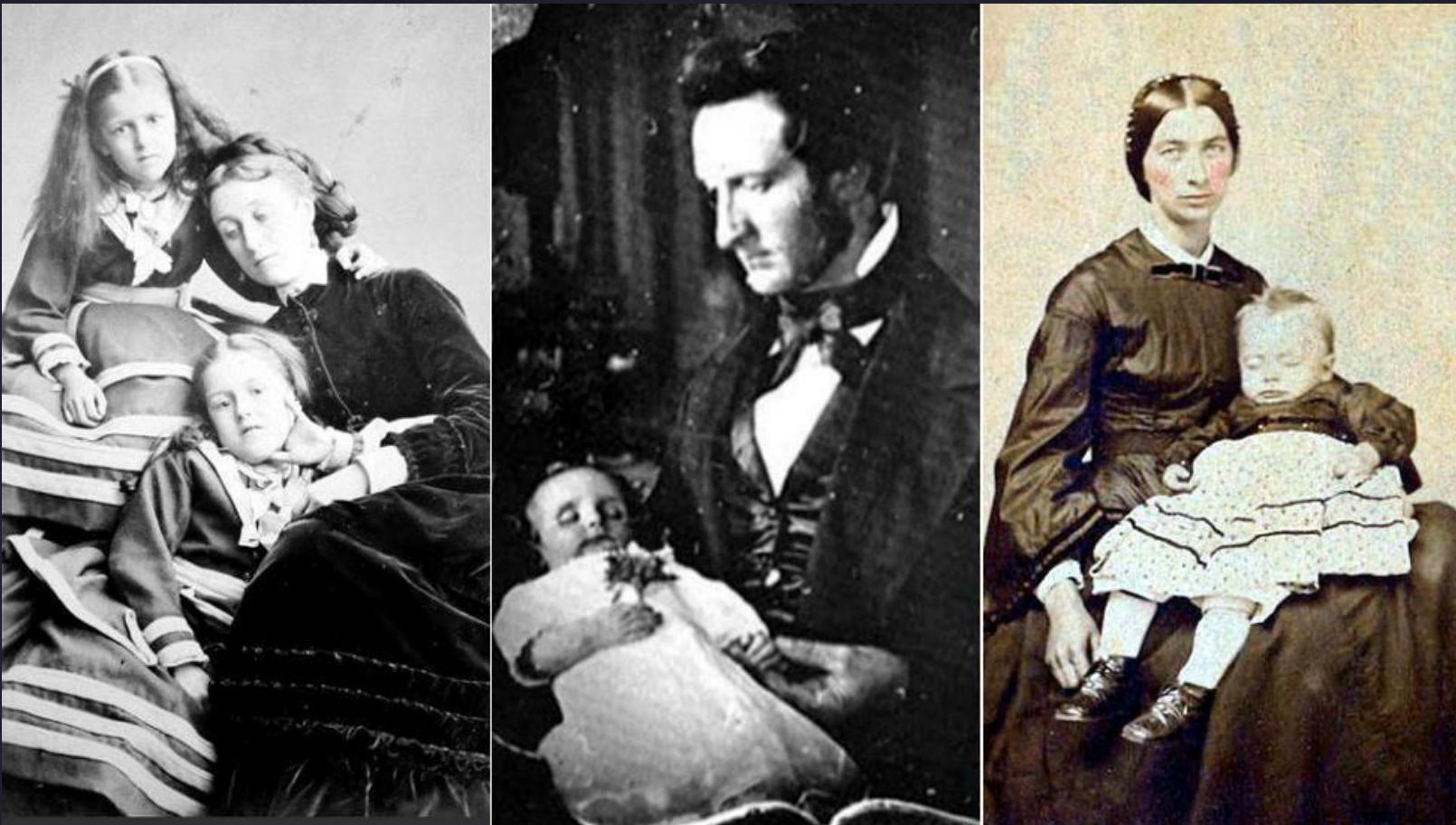


IMAGE AS ORGANIZER OF REALITY



called the photograph a paradox: it says both “here it is” and “this has been.”

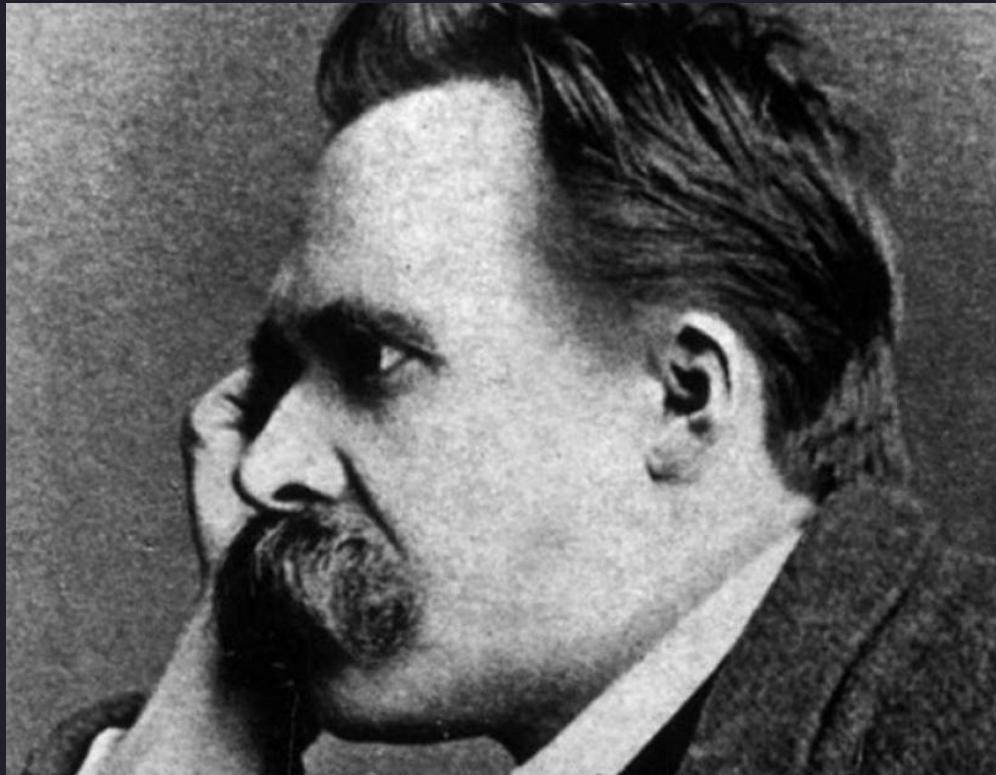
Roland Barthes



Mechanical images replace lived memory



Erik Kessels, 24Hrs in photos



Too much memory is a sickness.

Friedrich Nietzsche,
On the Uses and Disadvantages of
History for Life (1874)



Joachim Schmid

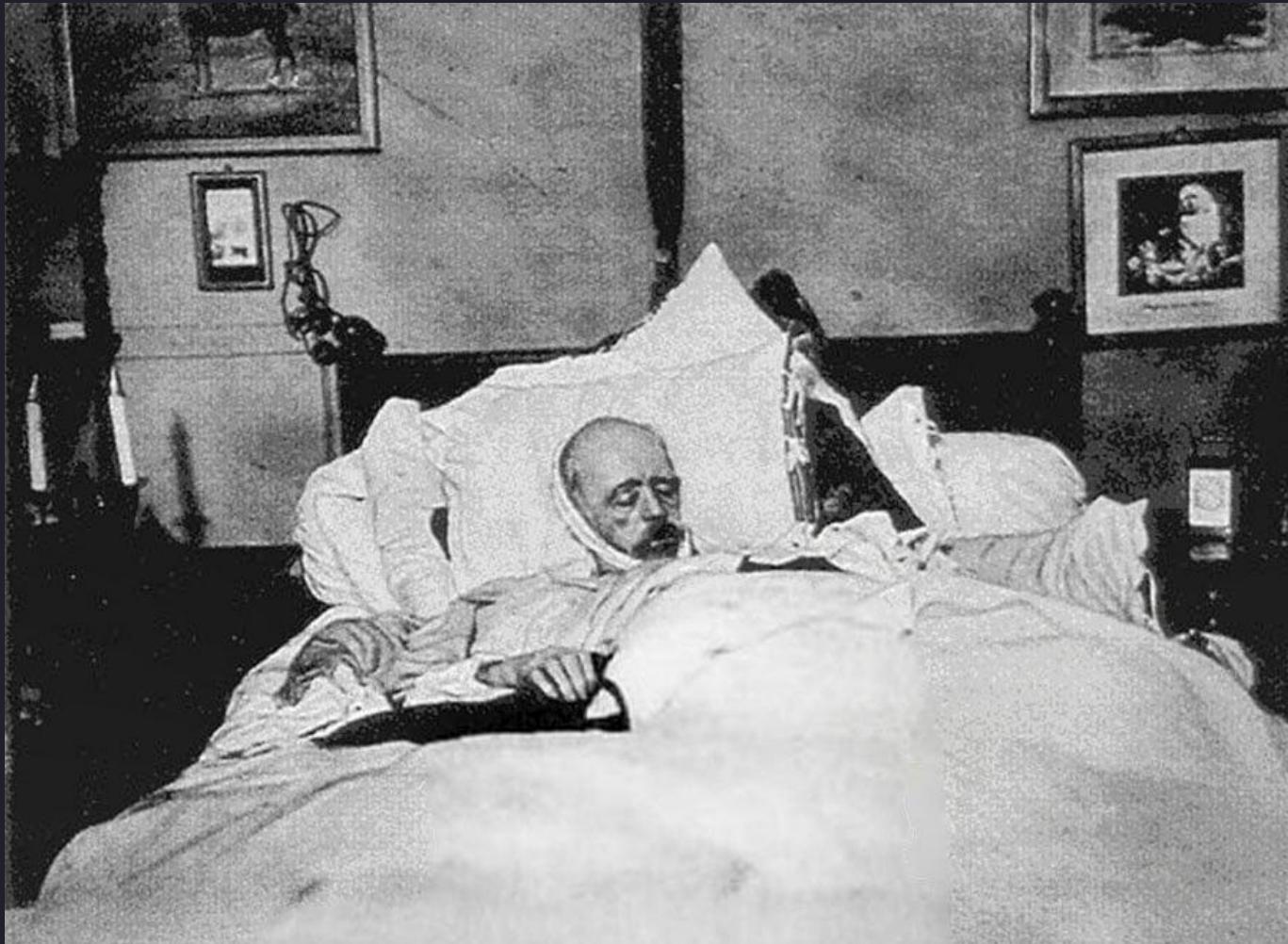
IMAGE AS ORGANIZER OF REALITY

IMAGE BECOMES EVENT



Everything that was directly lived has moved away into representation.

Guy Debord



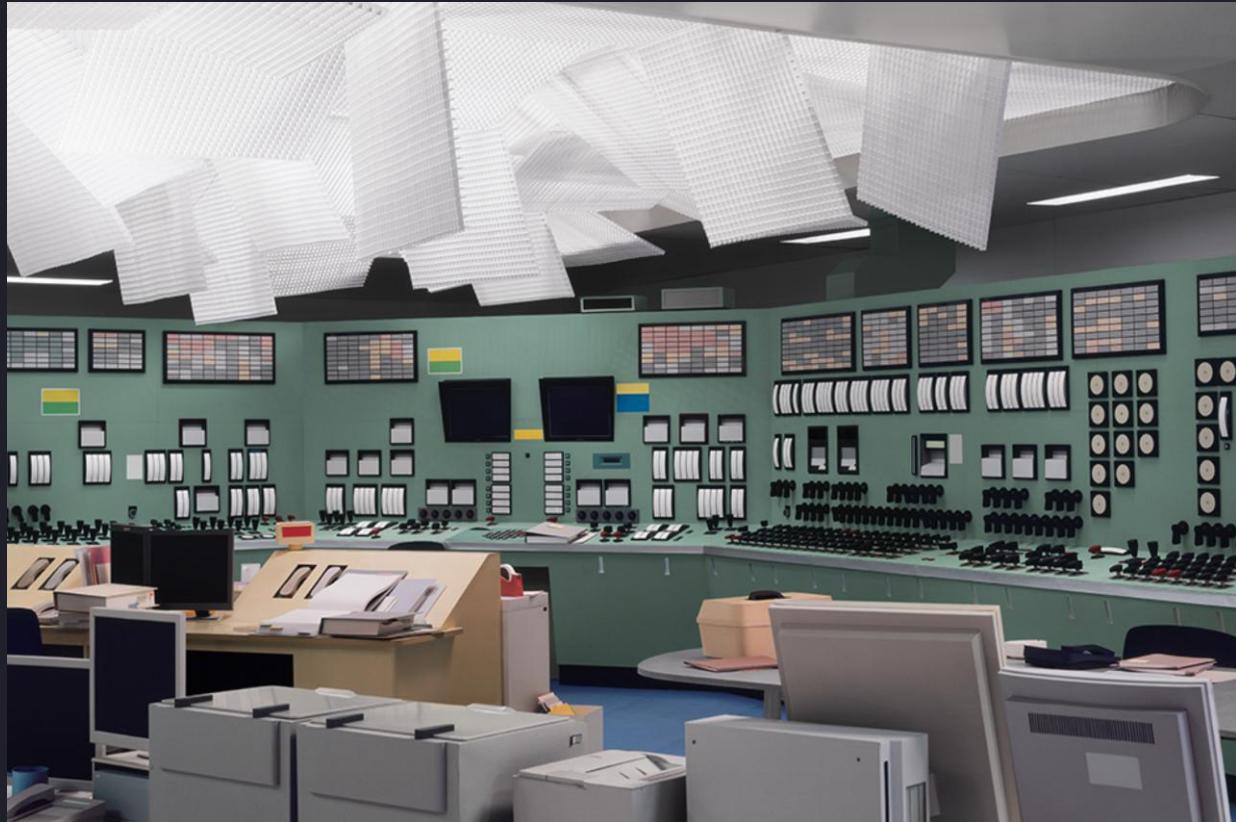
Otto von Bismarck's death chamber

The photograph manufactured
a historical event.



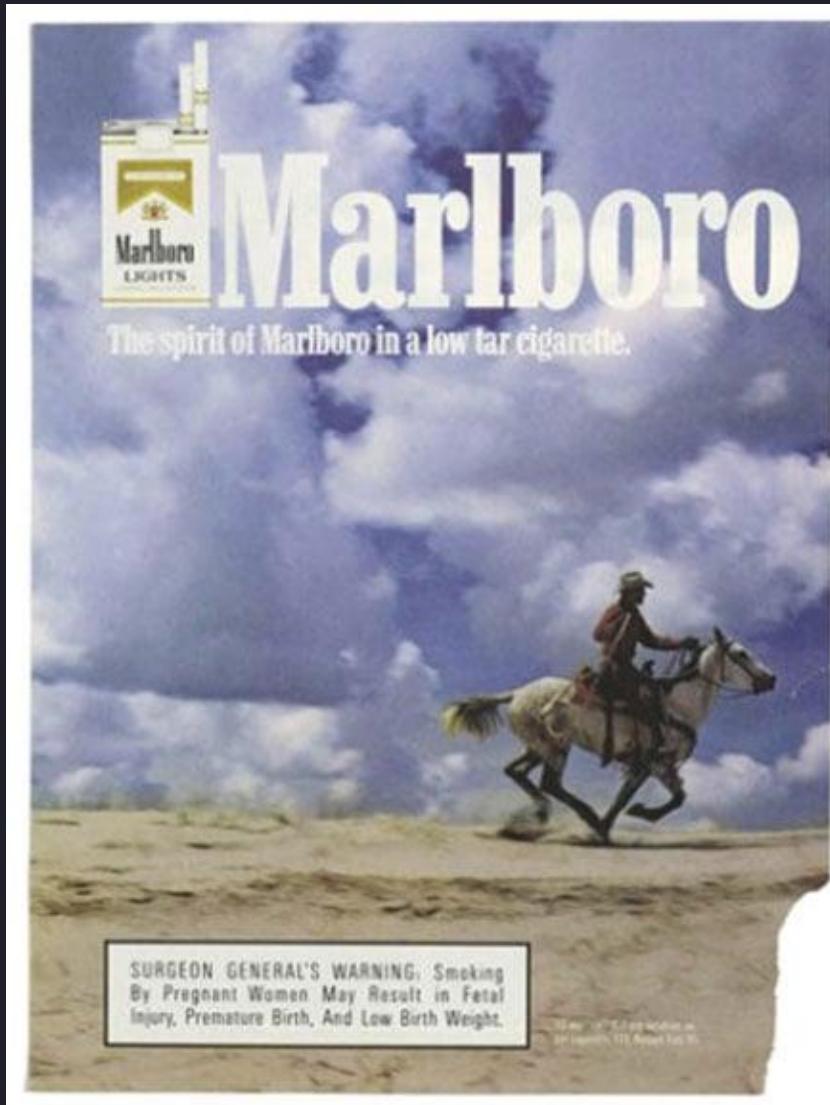
The Yes Men, Fake news

If it looks like news,
it is news.



Thomas Demand

from event to news image, to paper replica, to pristine print



Richard Prince, the Marlboro Cowboy

JEAN BAUDRILLARD

*SIMULACRA
AND
SIMULATION*

where copies no
longer refer to
originals

IMAGE AS ORGANIZER OF REALITY

IMAGE CONSTRUCTS NARRATIVE



The camera never lies

THE ORIGINAL BROADCAST THAT PANICKED THE NATION!

Orson Welles' WAR OF THE WORLDS

The Actual Broadcast by the Mercury Theater on the Air as heard over the Columbia Broadcasting System,
October 30, 1938. The most thrilling drama ever broadcast from the famed HOWARD KOCH script!





Who

decides what the camera shows?



+



= sadness



+



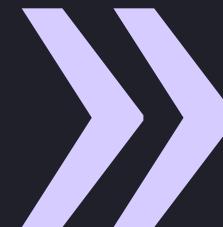
= hunger



+



= lust



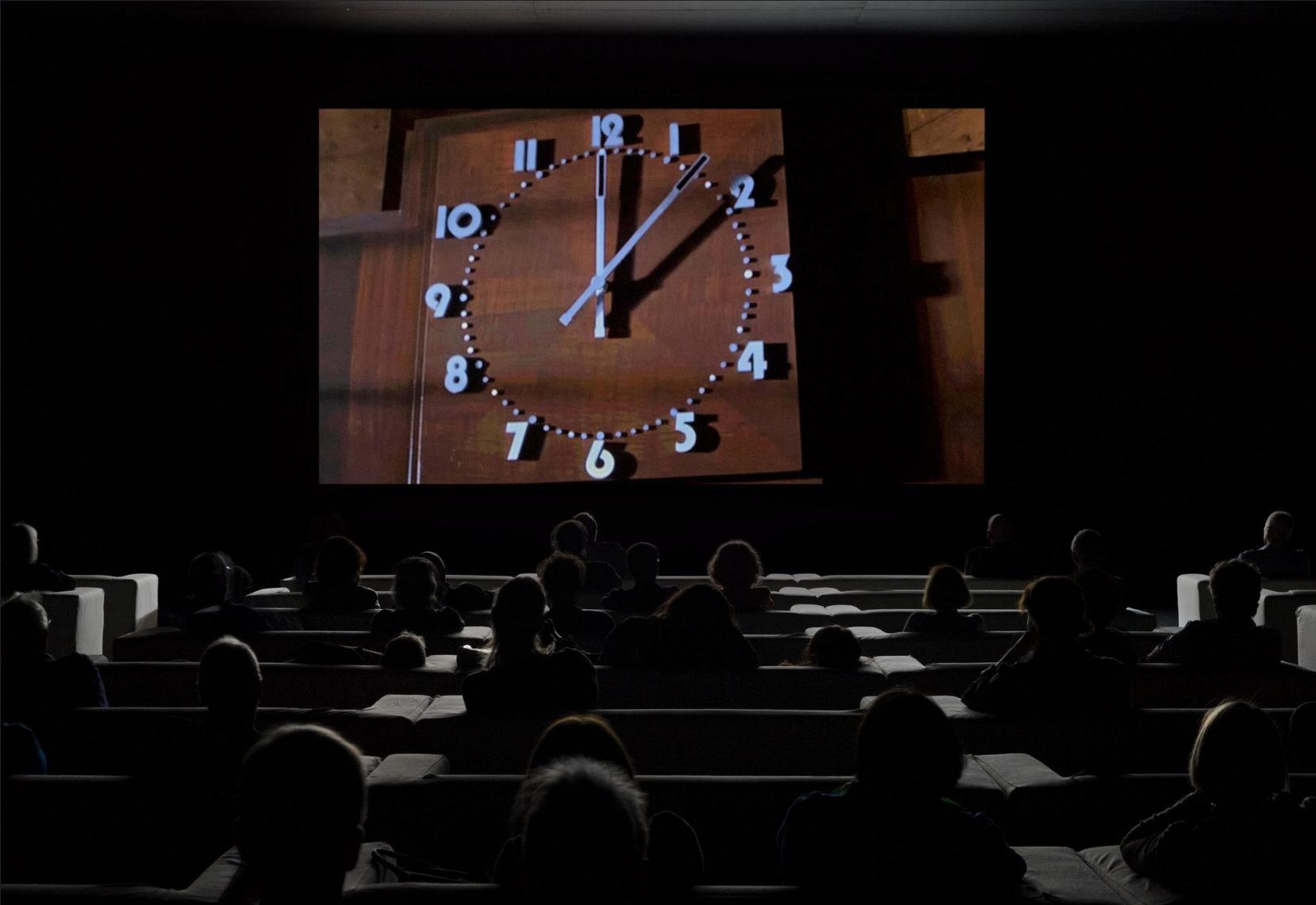
Montage is a collision of images
that manufactures thought.

Sergei Eisenstein

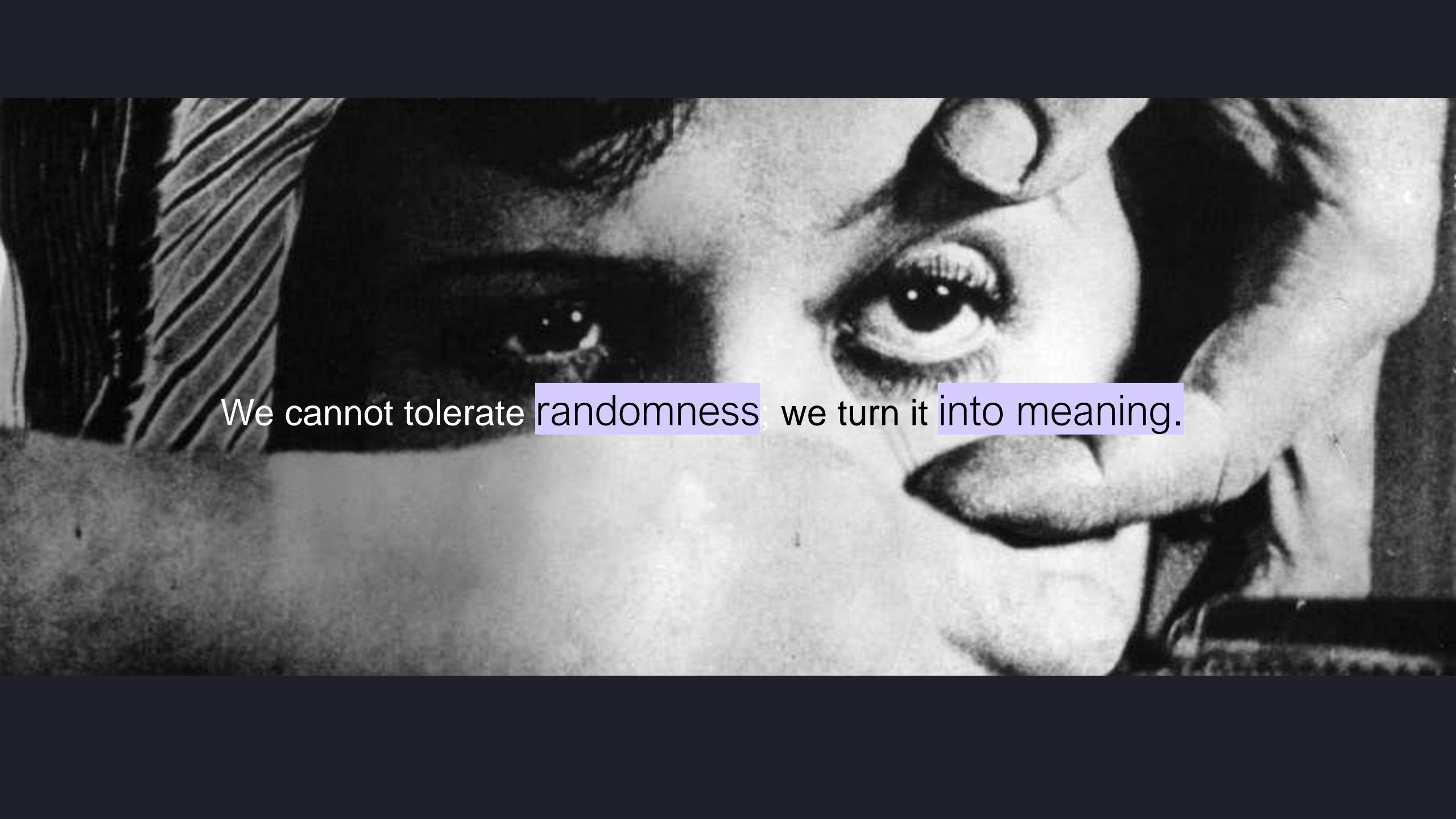


Battleship Potemkin (1925)





Christian Marclay, *The Clock*



We cannot tolerate randomness; we turn it into meaning.



Watching becomes
an act of strained expectation.

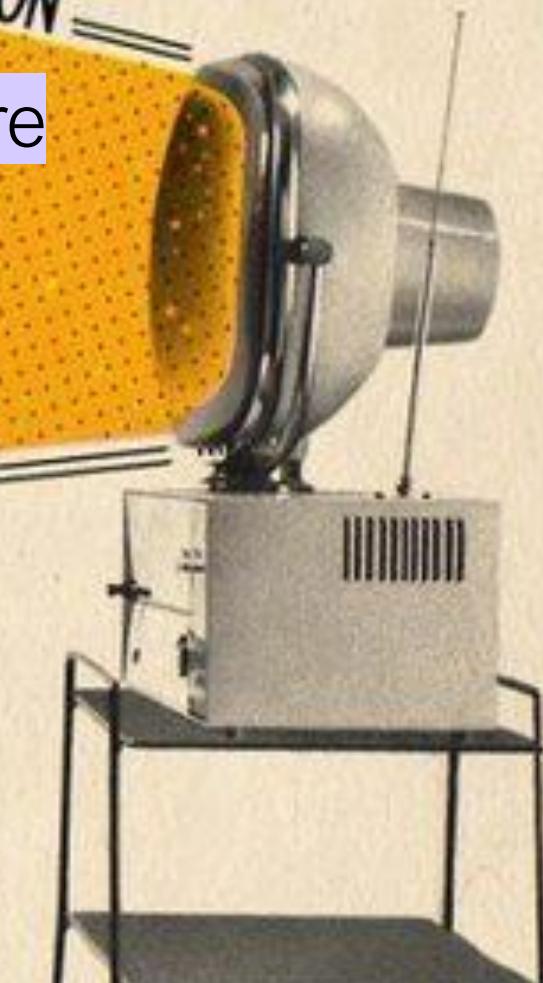
Andy Warhol, the Empire State Building

IMAGE AS ORGANIZER OF REALITY

TELEVISION AS REALITY

TELEVISION - DRUG OF THE NATION

power to shape desire





Seeing the world no longer meant
witnessing it directly;
it meant watching it delivered.

Susan Sontag





Television culture could only be
confronted through television
itself.

Christine Hill



SONY PORTAPAK

...the first affordable handheld video camera — and from that moment on, artists could not be stopped.



Nam June Paik,
Magnet TV (1965)



Nam June Paik,
TV Buddha (1974)



architecture of perception

Nam June Paik,
Electronic Superhighway, 1995

The television is the sculpture of the XXth century

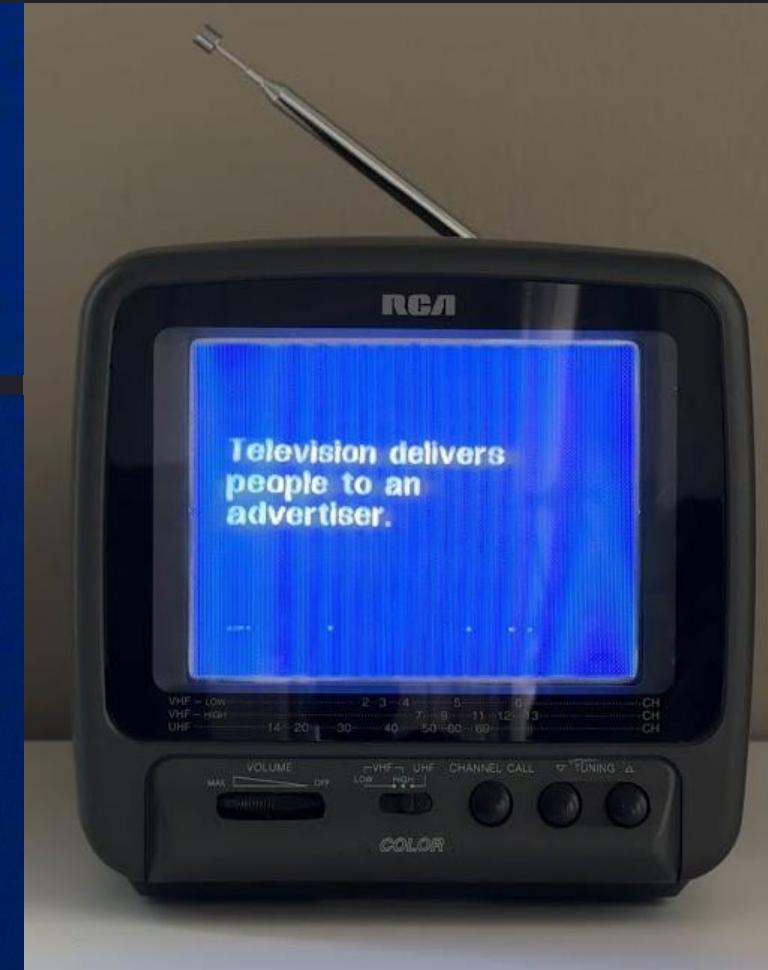


Wolf Vostell,
6 TV Dé-Coll/age, 1963

The Product of Television, Commercial Television, is the Audience.

You are the end product.

You are the end product delivered en masse to the advertiser.



Richard Serra
Television Delivers People, 1973



The fourth wall breaks but only on one side.

Douglas Davis
The Last Nine Minutes (1974)



Klaus vom Bruch, 1980



Das Duracellband

PAL - Mono 10 Min



Chris Burden TV Hijack, 1972



Paper Tiger TV



Pirate TV, 1989–1992,
Vladislav Mamyshev-Monroe, Yuris Lesnik, Timur Novikov



Media Burn, 1975

THE MEDIUM
IS THE
MESSAGE



THE MEDIUM
IS THE
MESSAGE

KEY TAKEAWAYS

- Images began as records of moments — but gradually became structures that organize memory itself. The past no longer lived only in minds or rituals, but in archives, databases, feeds, and screens, memory shifted from lived experience to stored representation — and soon from storage to overload.
- The image stopped documenting events and began producing them: shaping public history, collective emotion, and social belief.
- Montage, broadcast, and mass media revealed whoever controls image sequence controls attention — and whoever controls attention organizes reality.
- By the late twentieth century, television and mass imagery became the environment in which the world appears.
- The central condition of contemporary life: we do not live events — we live their images.

How does my work guide attention,
sequence, expectation?

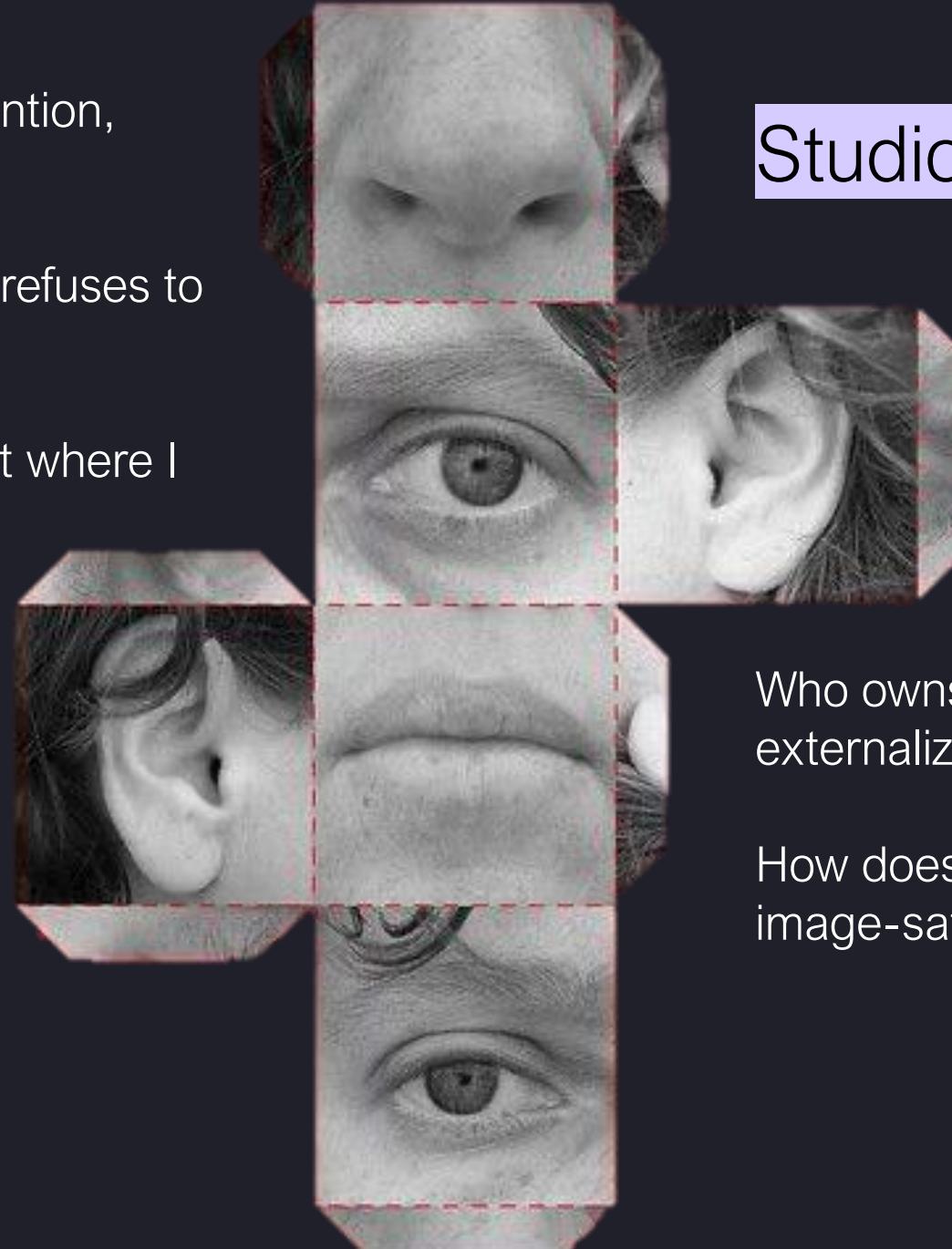
Can I make a work of art that refuses to
become spectacle?

What stories do viewers invent where I
provide none?

Studio Reflections

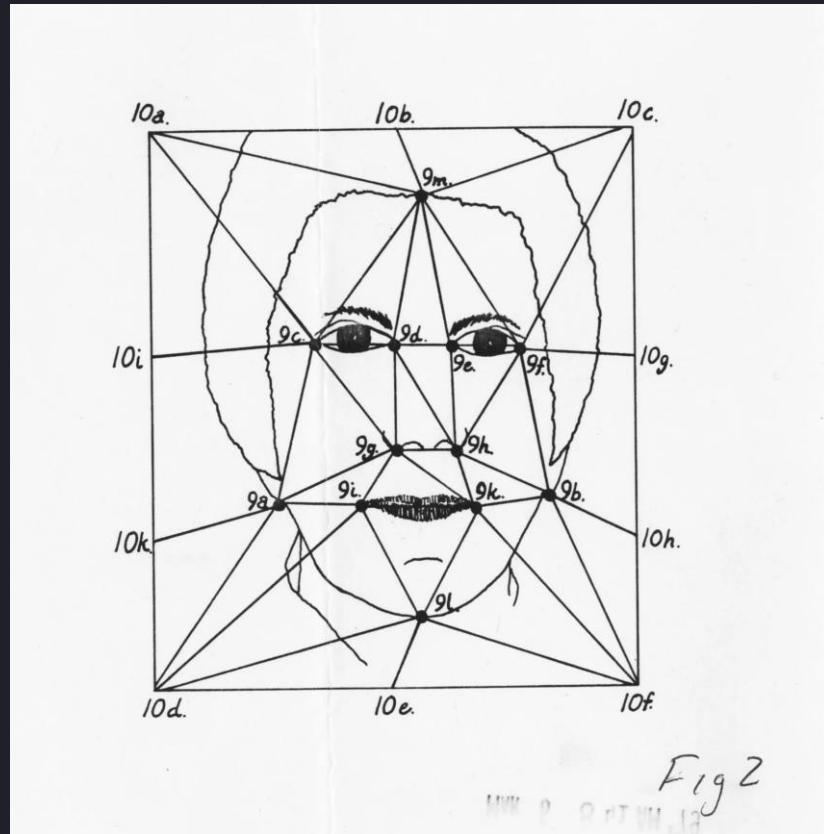
Who owns memory once it is
externalized?

How does my work behave inside an
image-saturated world?

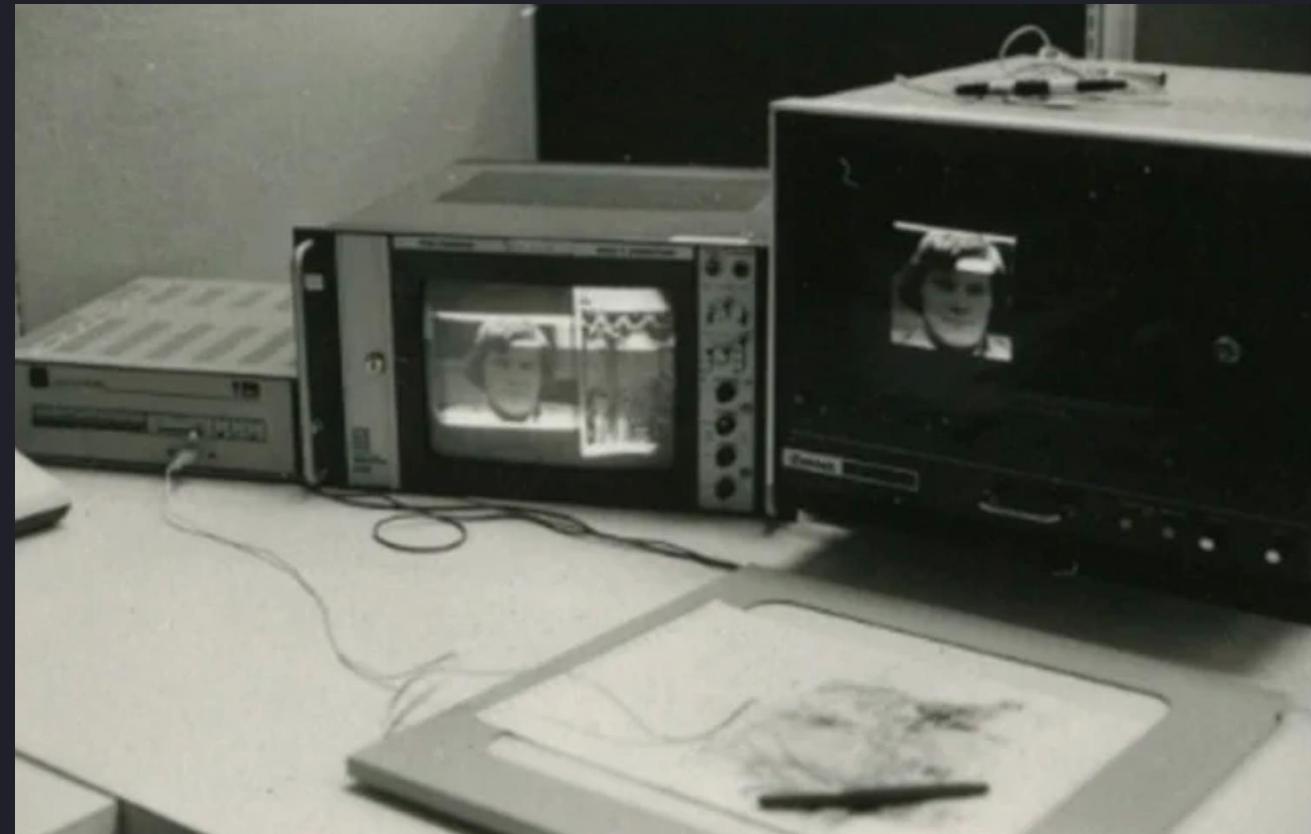




FROM STORY TO DATA BASE



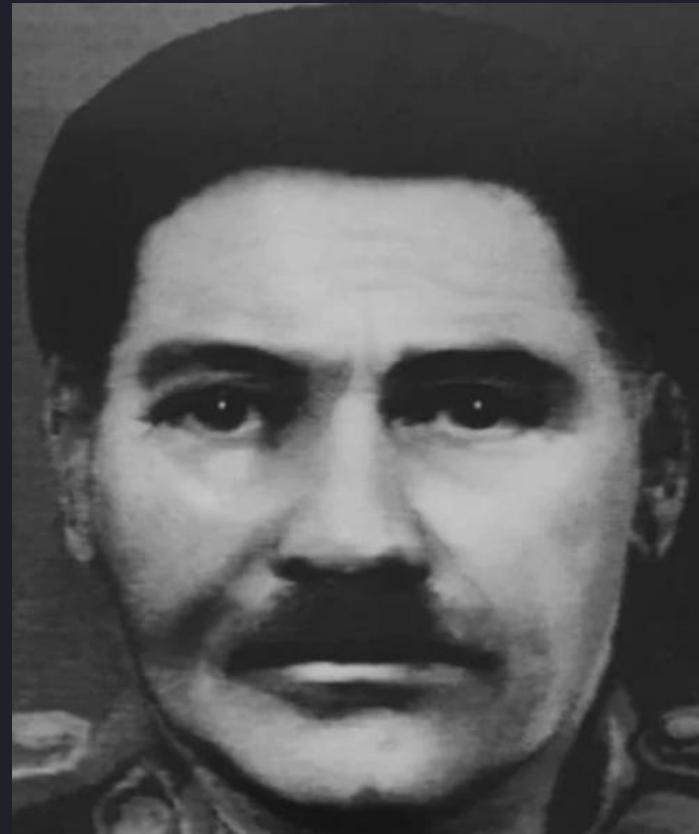
Nancy Burson,
Morphing Gridt



The set up at MIT which was their first version of a digitizer



Nancy Burson, Warhead I
(Ronald Reagan, Leonid
Brezhnev, Margaret Thatcher,
François Mitterand, and Deng
Xiaoping), 1982



Nancy Burson, Big Brother
(Hitler, Stalin, Khomeini, Mao
and Mussolini), 1983 © Nancy
Burson





Nancy Burson,
Trump/Putin, 2018



Images are modular units — pixels, files, datasets — that can be stored, sorted, searched, recombined, and generated.

Lev Manovich

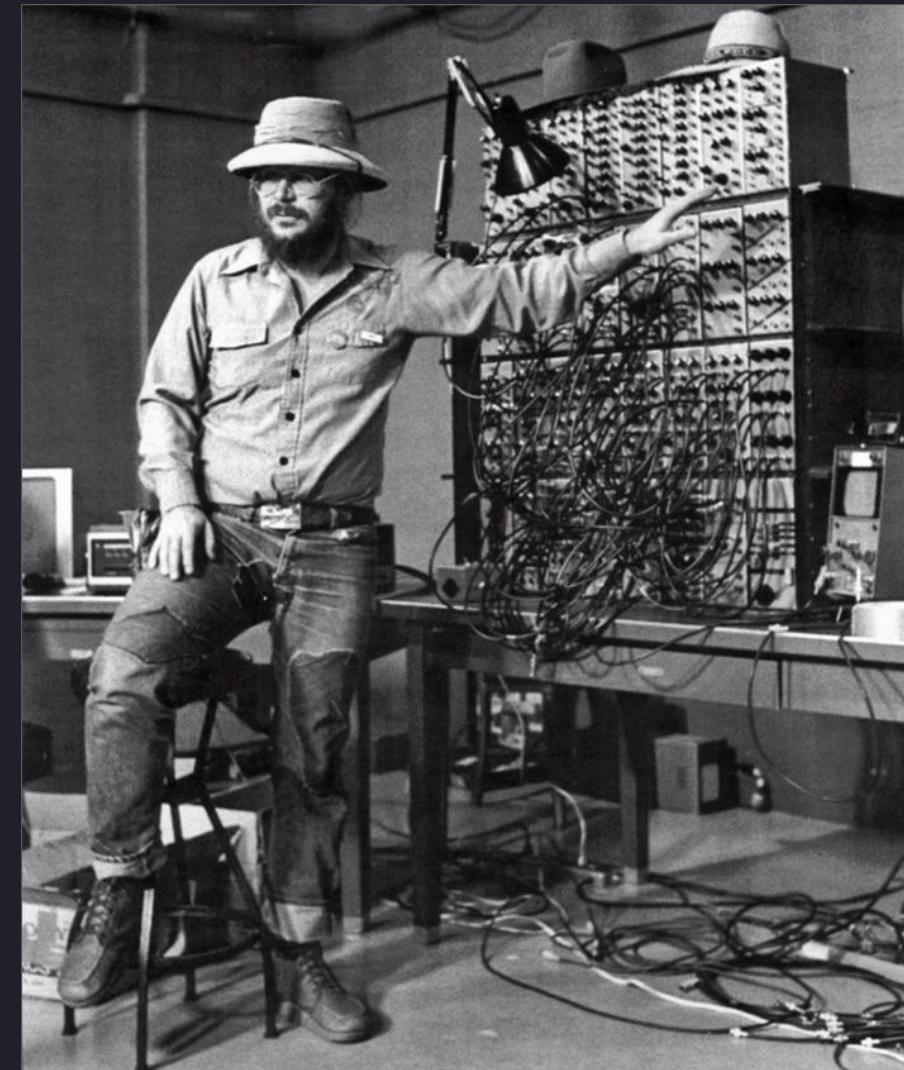
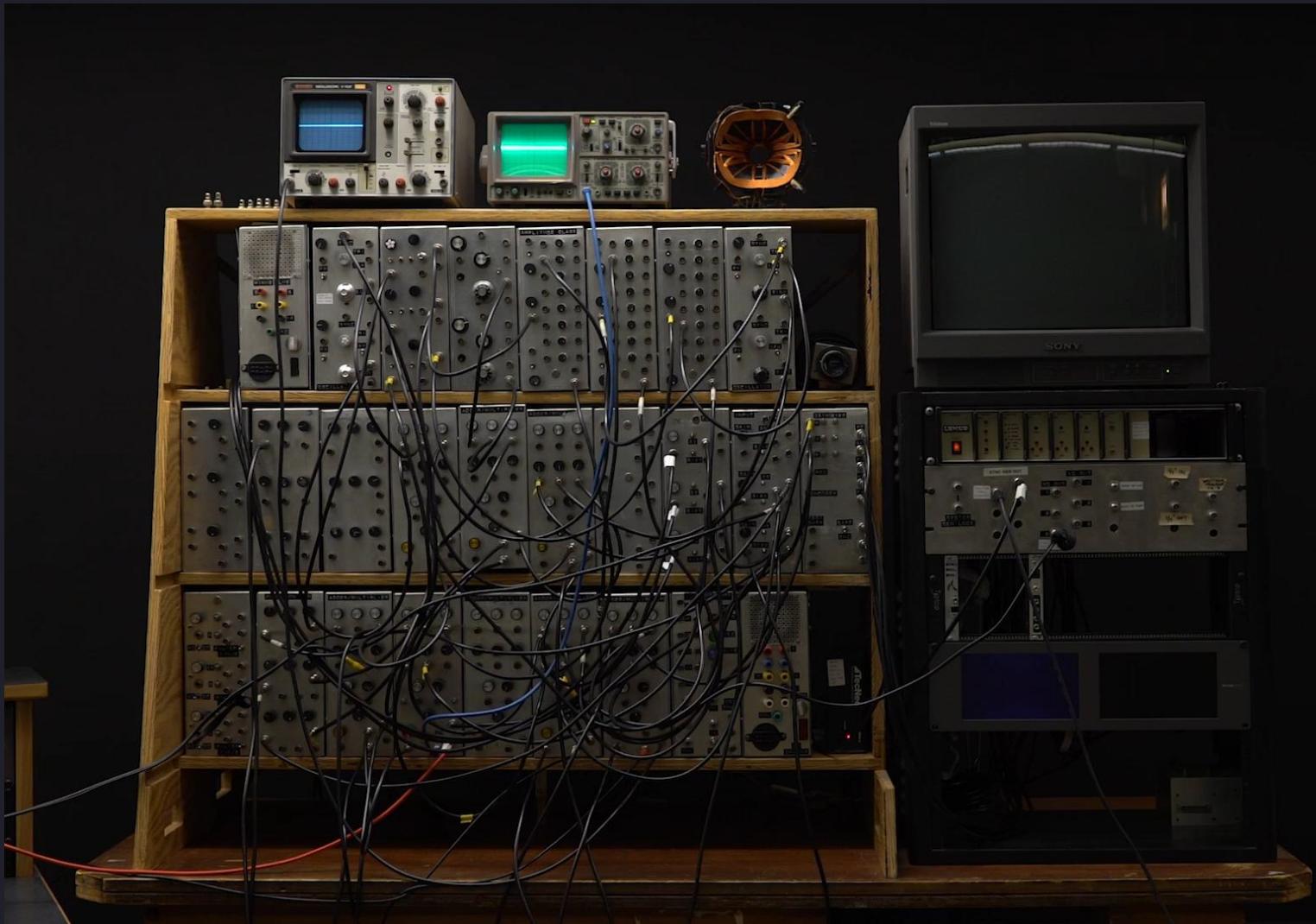
Numerical representation: digital images are made of numbers.

Modularity: these digital elements remain independent building blocks — clips, pixels, files — that can be rearranged without destroying the whole.

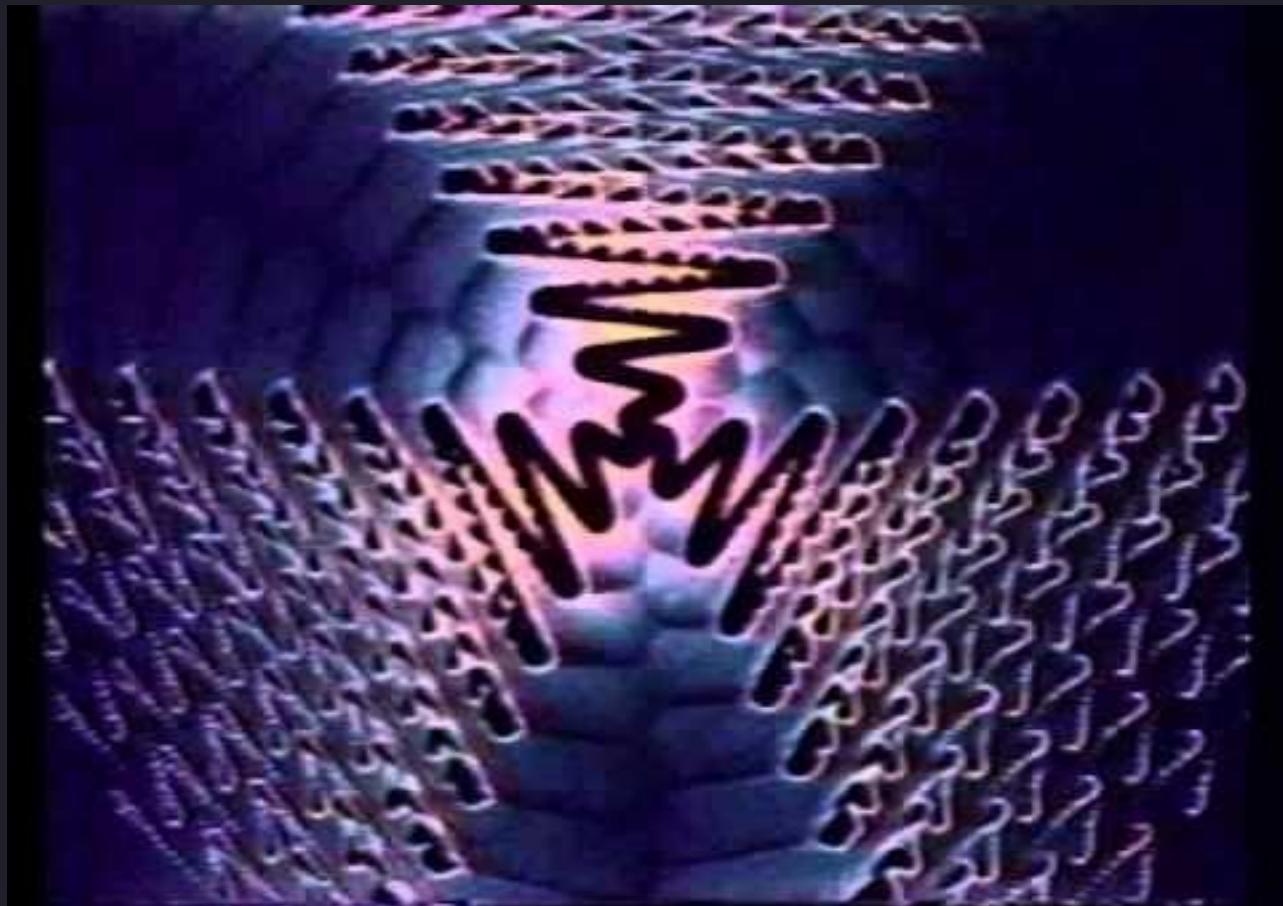
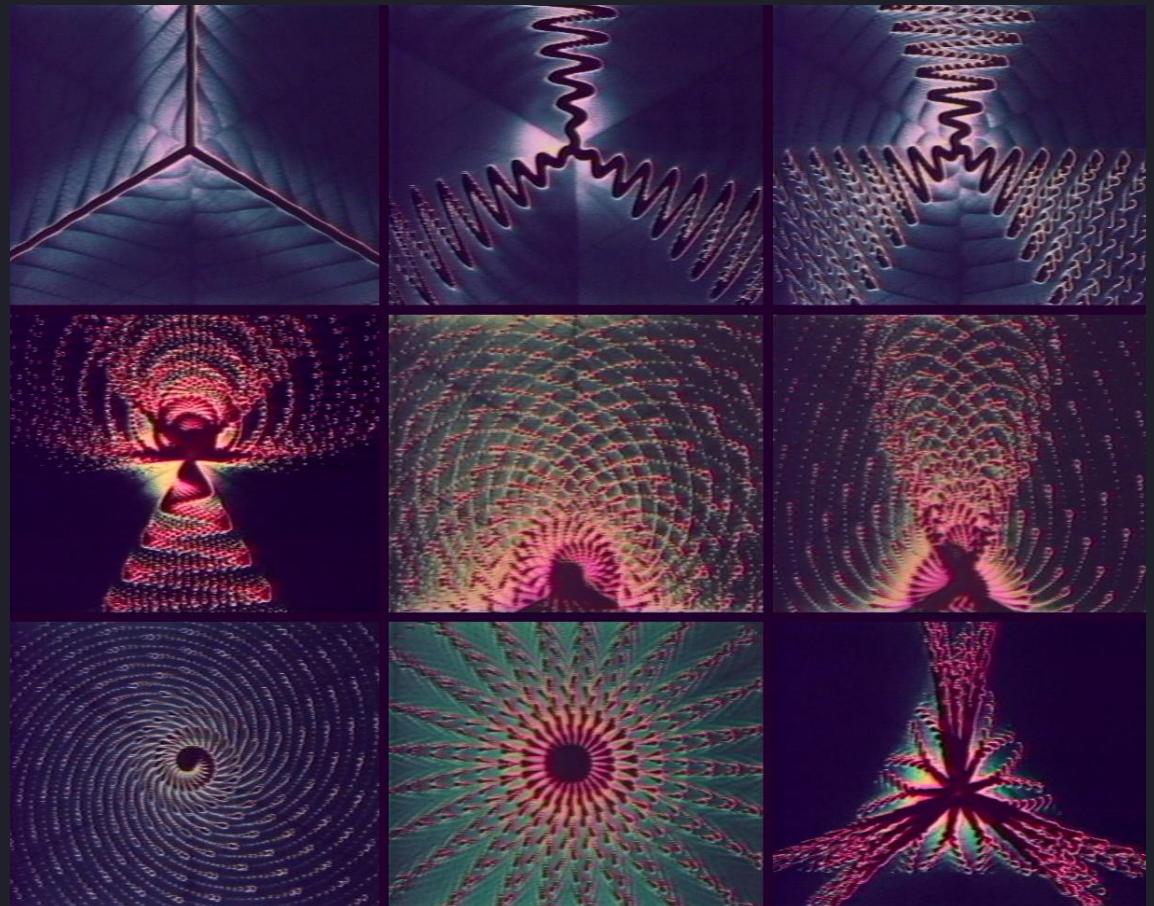
Automation: software can operate on images automatically — morphing faces, recognizing patterns, generating sequences, predicting behavior.

Variability: no digital image has a single final form. It can be resized, recolored, recompressed, reassembled, or regenerated endlessly.

Transcoding: new media lives in two layers that reshape each other: the cultural layer (human meanings, like a photo's story) and the computer layer (code, algorithms, data). A face becomes both art and editable pixel array; culture gets rewritten by software logic, and vice versa..



Dan Sandin, Image Processor Documentation, 1971-1974



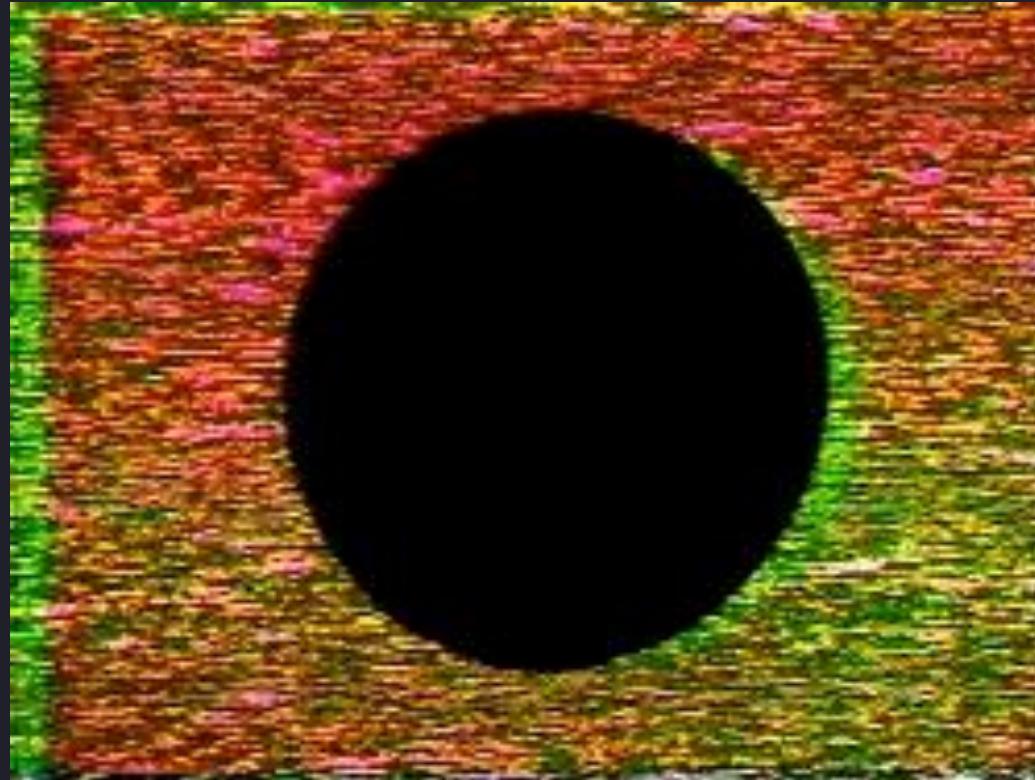
Dan Sandin, Spiral PTL6 1980



Steina and Woody Vasulka constructed modular video instruments — machines that treated the television signal the way a Moog synthesizer treated sound.



Steina and Woody Vasulka, Violin Power, 1970-78



Steina and Woody Vasulka, Noise Fields, 1974

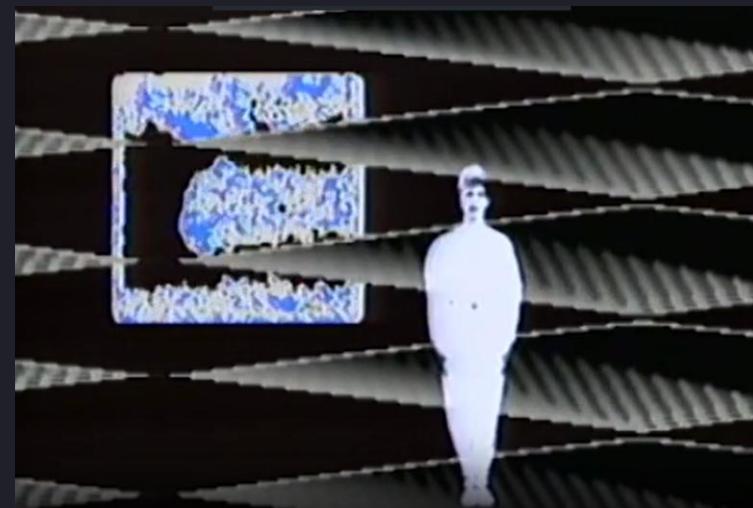


Ture Sjölander and Lars Weck, Bengt Modin, "Monument", 1967



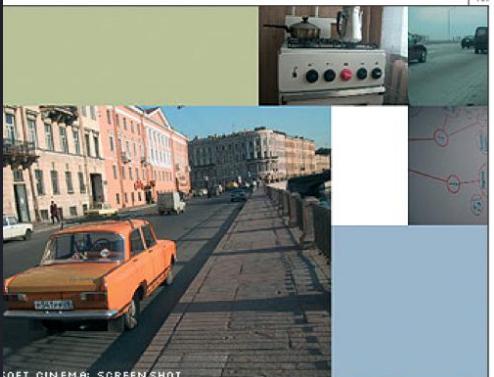
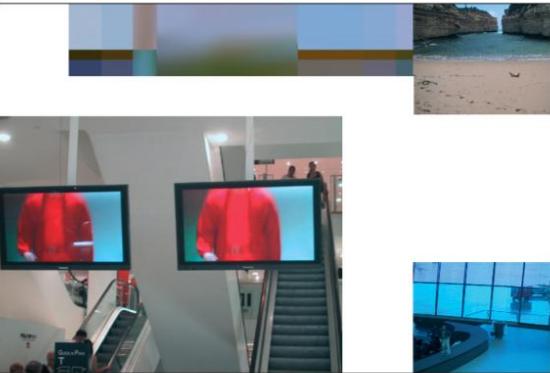
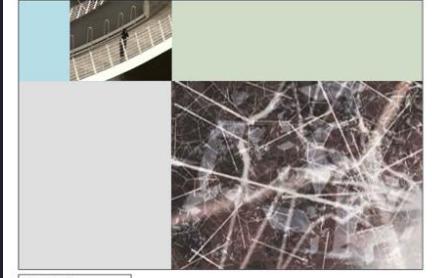
Famous figures infected
by electronic disease

Gene Youngblood



Max Almy, Leaving the 20th Century, 1982

SOFT CINEMA :



Lev Manovich, «Soft Cinema», 2002



Cory Arcangel, Super mario clouds, 2002

Artists according to Manovich's principles

Principle	1960s-80s Pioneer	2000s+ Escalation	Visual Hook
Numerical	Burson (face coordinates)	Müller-Pohle (photo → ASCII)	Pixel grid dissolving
Modularity	Arcangel (clouds only)	Soft Cinema (clip database)	Layer stack diagram
Automation	Sandin (live voltage)	Ridler (algo-flowers)	Morphing sequence
Variability	Vasulkas (signal flux)	Pulse Room (heartbeats)	Permutation variants
Transcoding	Almy (media critique)	ImageNet (AI labels)	Face → code overlay

KEY TAKEAWAYS

- Images are no longer singular frames or sequences. They are modular elements that can be stored, sorted, recombined, and generated.
- Meaning emerges from structure, correlation, and permutation.
- Once vision becomes data, the body becomes describable, the face becomes calculable, identity becomes editable.
- Narrative does not organize images anymore. Images organize narrative.

If images are building blocks, what structures am I constructing?

When does a person become a pattern?

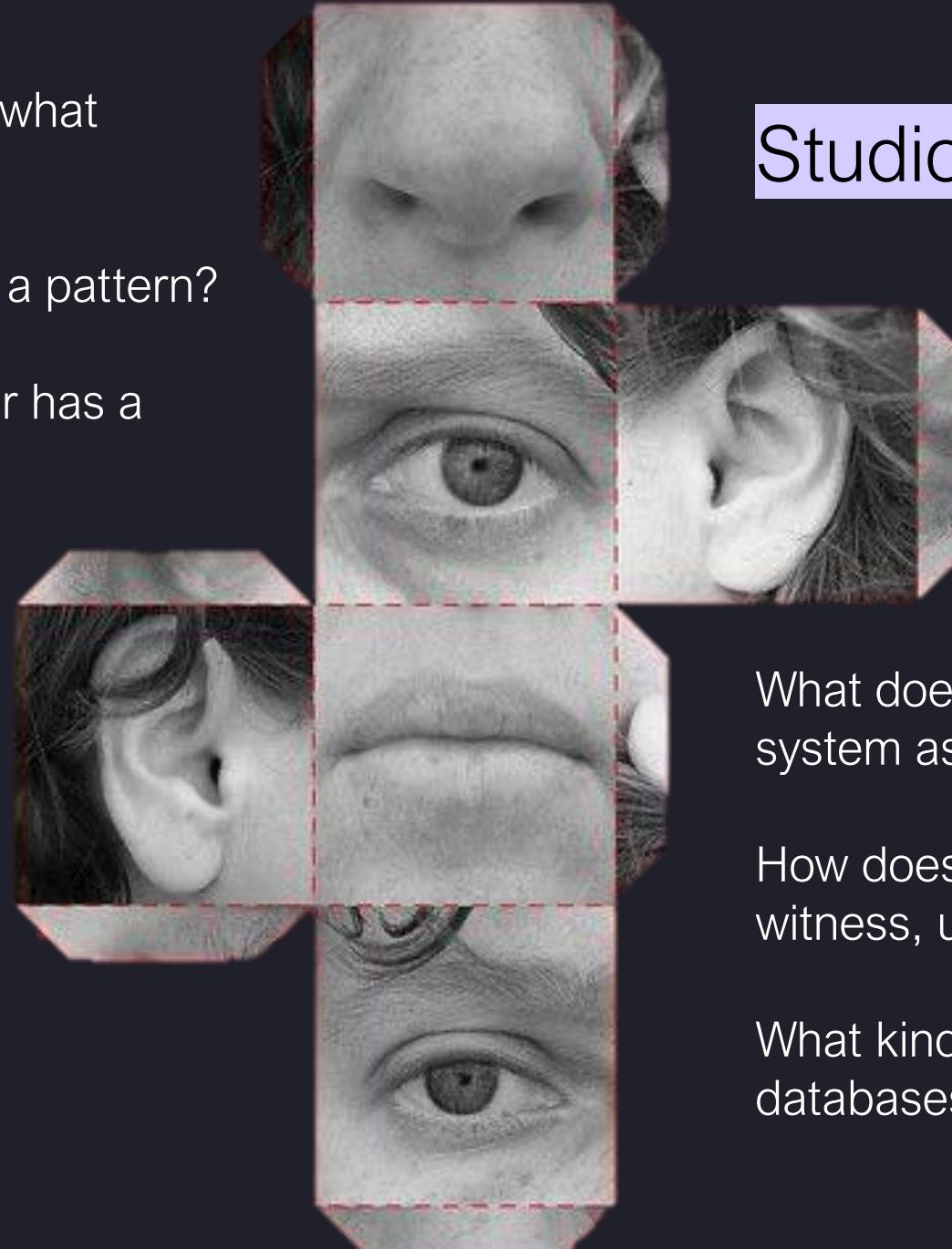
Can I design a work that never has a final version?

Studio Reflections

What does authorship mean when a system assembles the image?

How does my work treat the viewer: as witness, user, or data-point?

What kinds of stories can only exist as databases?



UNFINISHED EXPERIMENTS

Can we invent ways of seeing that do not convert the world into resource?

What counts as evidence in an age of synthetic images? When images no longer guarantee a referent, how do we ground knowledge?

Vision has become a field of governance. Who has the right to see, to show, to hide?

If time becomes navigable, what happens to memory, forgetting, and responsibility?