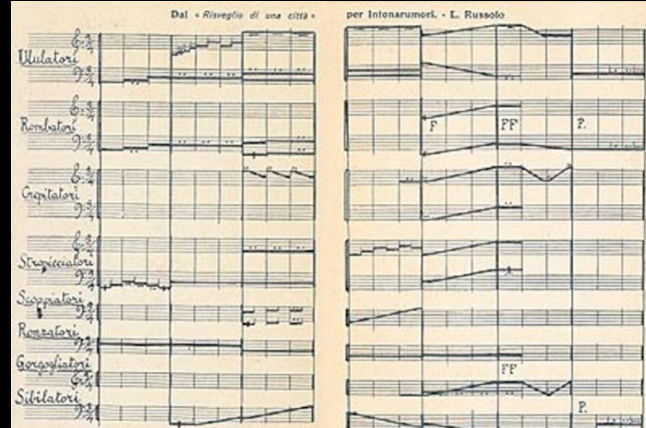
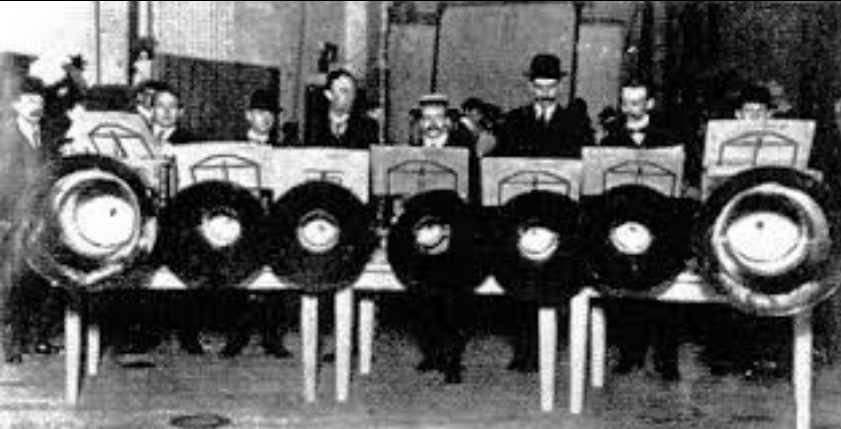


SISTEMAS E INSTRUMENTOS

ARTE SONORA | MÚSICA VISUAL E AUDIO-VISUAL | SISTEMAS DE ILUSÃO ÓPTICA | NOTAÇÃO GRÁFICA

Prof. Adriana Sá

ARTE SONORA: SISTEMAS E INSTRUMENTOS



Os *Intonarumori* de Luigi Russolo, 1910-30

instrumentos mecânicos & música como organização de “ruídos”

<https://www.youtube.com/watch?v=BYPXAo1cOA4>



o estúdio de som como instrumento > Música Concreta e “Objets Musicaux”

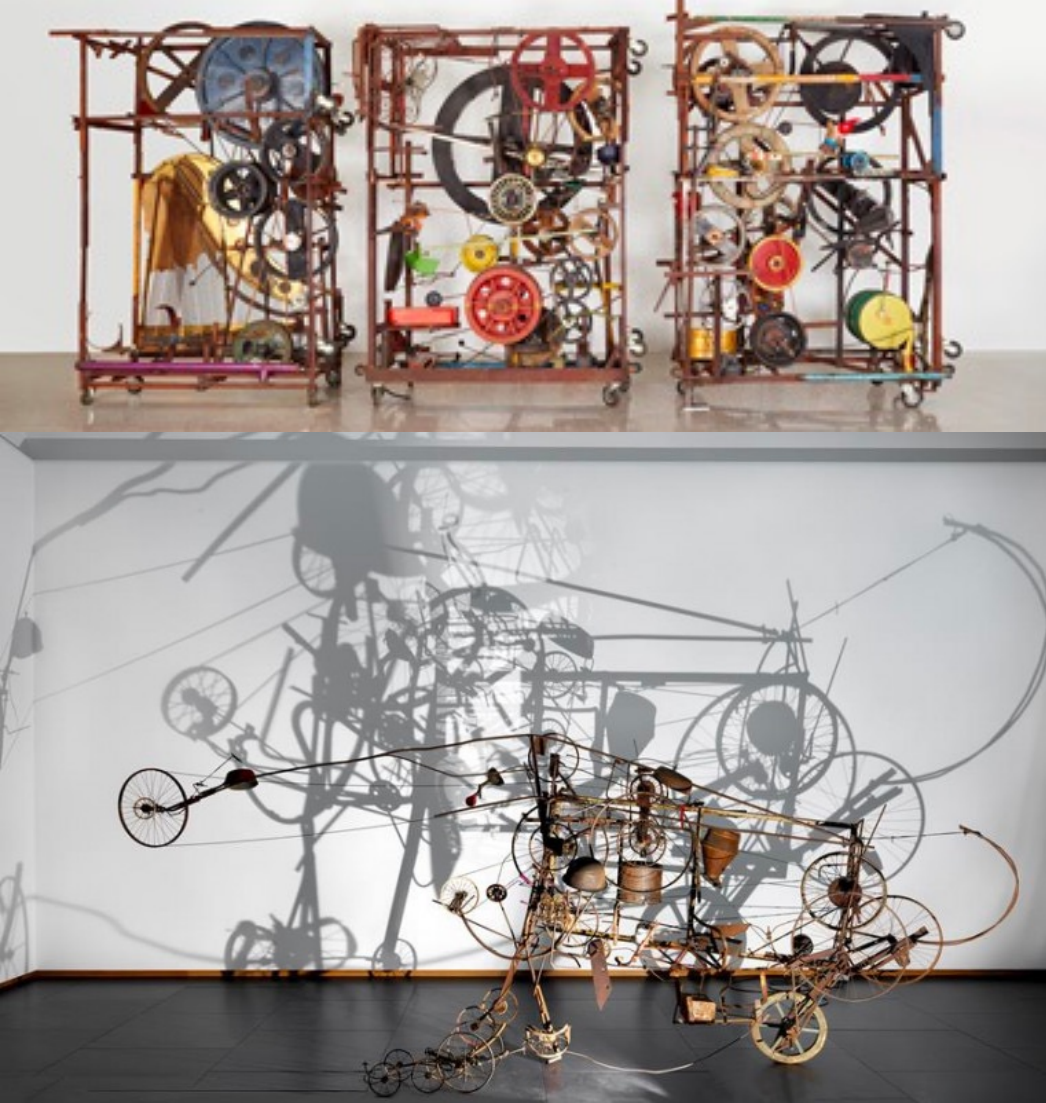
Pierre Schaeffer, *etude aux chemins de fer*, 1948 <https://www.youtube.com/watch?v=N9pOq8u6-bA>



o Oramics Synthesizer de Dafne Oram, 1958

desenhos traduzidos em Volts de modo a controlar amplitude, frequência, etc

<https://www.youtube.com/watch?v=mJ08diPUv6A>



Jean Tinguely, 1960s-91

Noise music com mecanismos escultóricos

<https://www.youtube.com/watch?v=GmrDEX4P5l8> & <https://www.youtube.com/watch?v=E-iUr1Y2tFo>

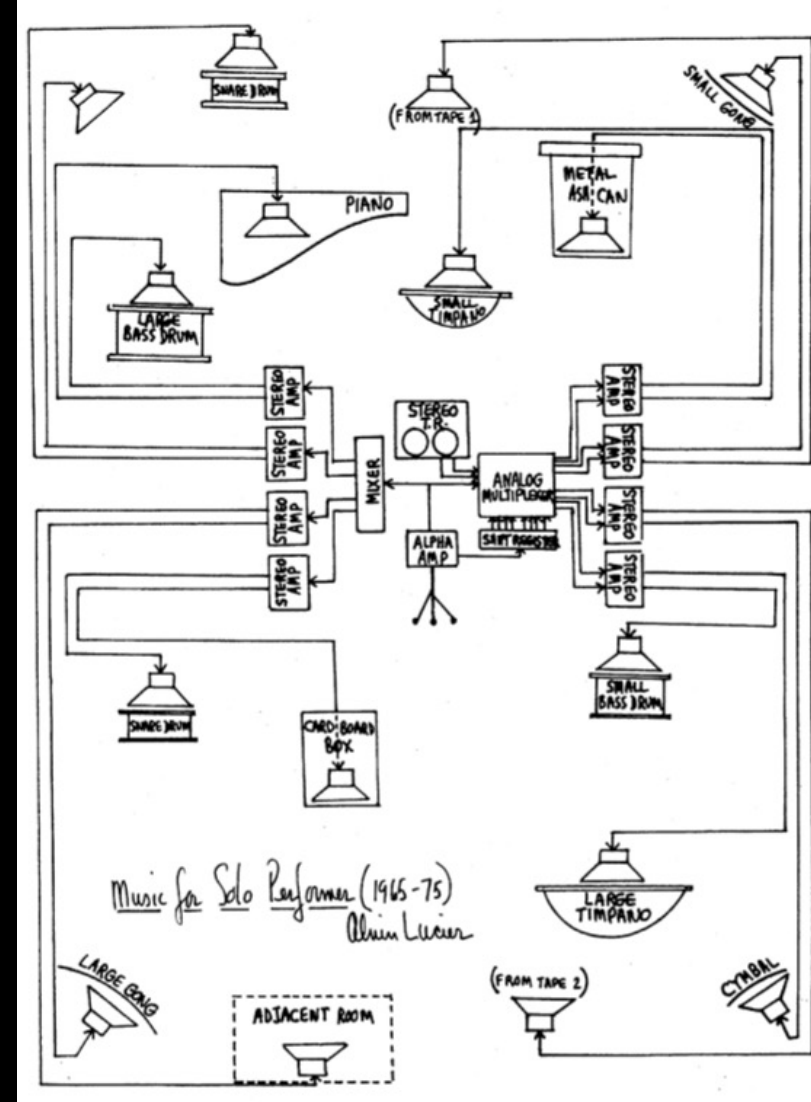


Steve Reich, *Pendulum Music*, 1968

Mecanismo pendular - feedback com microfones e amplificadores

Uma performance: <https://www.youtube.com/watch?v=fU6qDeJPT-w>

Funcionamento: <https://www.yourclassical.org/story/2020/05/21/classical-kids-music-lessons-pendulum-music>



Alvin Lucier, *Music for Solo Performer*, 1965 - 75

interface cérebro-máquina, sistema analógico

<https://vimeo.com/53888614>



John Cage, *Reunion*, 1968

sistema electrónico concebido por Lowell Cross:
sensores de luz, microfones de contacto e geradores áudio

dinâmica musical modulada por uma partida de xadrez entre John Cage & Marcel Duchamp
material musical de David Behrman, Gordon Mumma, David Tudor e Lowell Cross

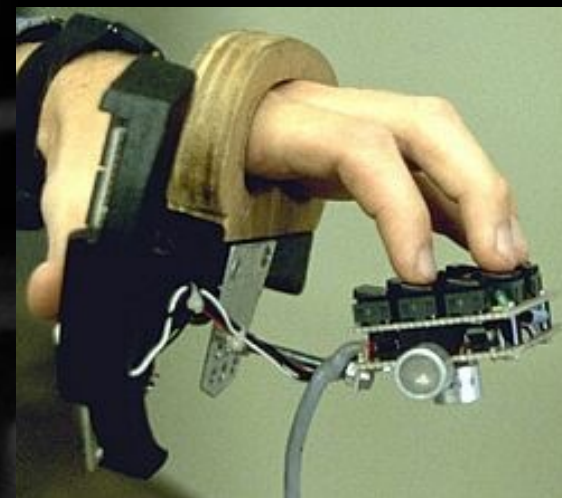
<https://www.youtube.com/watch?v=7NnpMQVxfKs>



John Lifton, *Green Music*, 1975

Sonorização dos sinais bio-eléctricos das plantas

Outras relações entre som e plantas: <https://soundstudiesblog.com/tag/botanical-rhythms/>



The Hands, de Michel Waisvisz, 1984 - 2008

interface gestural com mapeamento digital

<https://www.youtube.com/watch?v=iqYcBulmdWw>



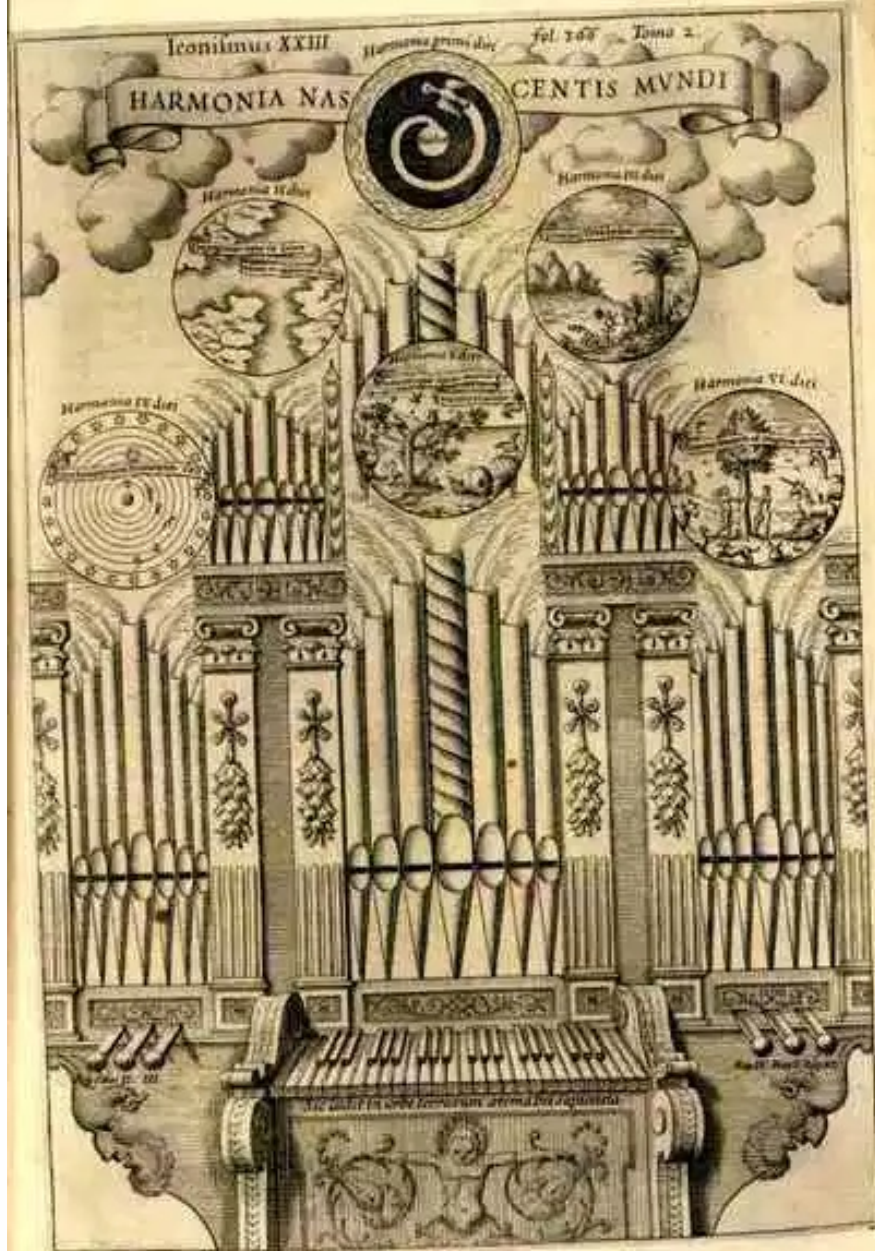
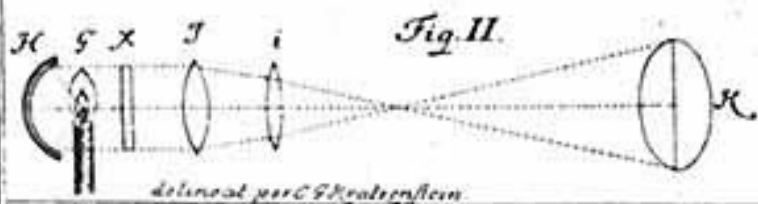
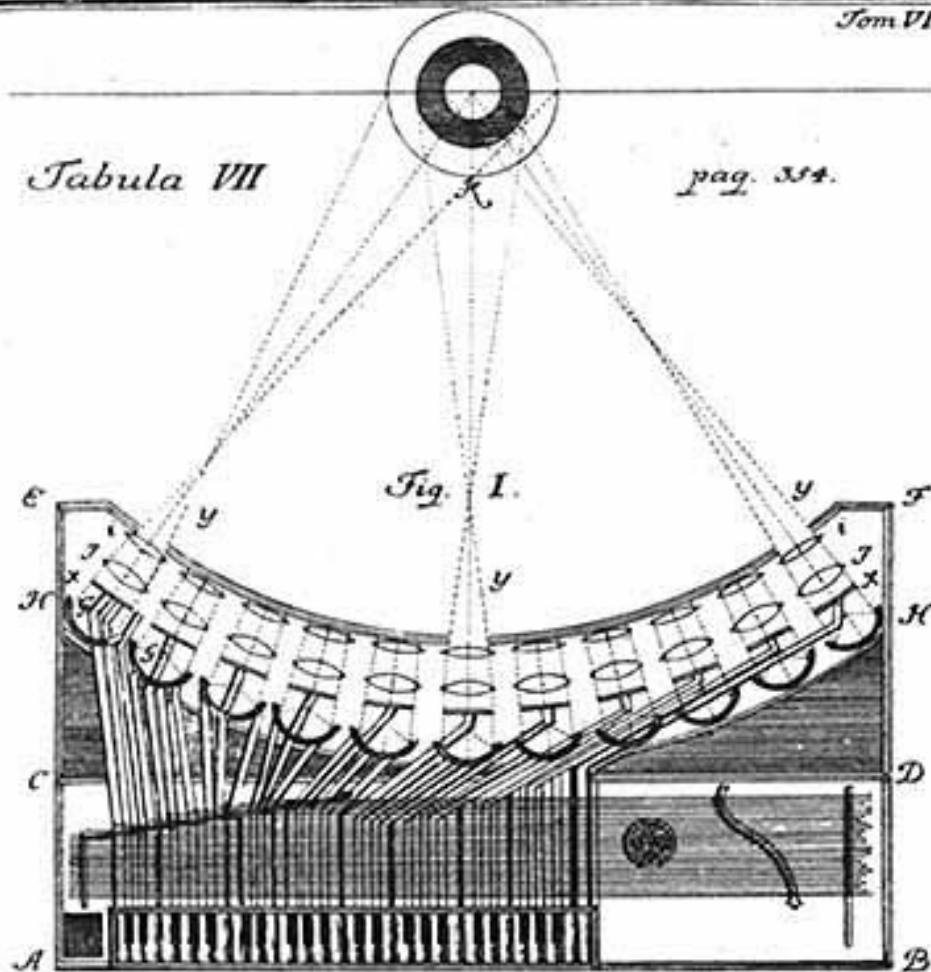
Sensorband, 1994 - 2003

Sensores de ultrasons, infravermelhos e EMG, com mapeamento digital

Instrumentos individuais: <https://www.youtube.com/watch?v=o-ZcsAHVn6A>

Soundnet: <https://www.youtube.com/watch?v=XLSoPmY6jGM>

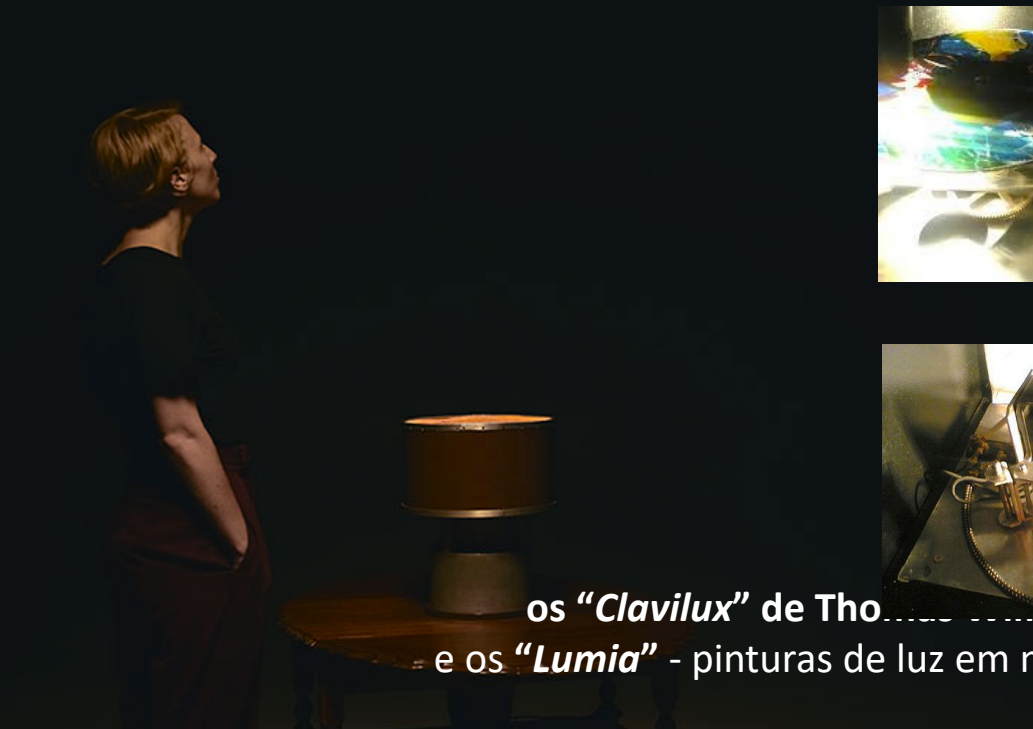
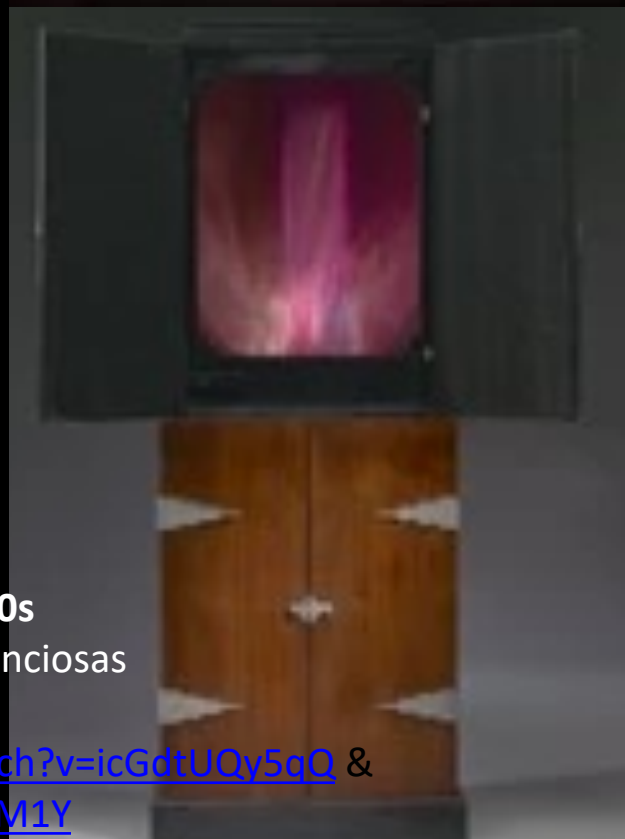
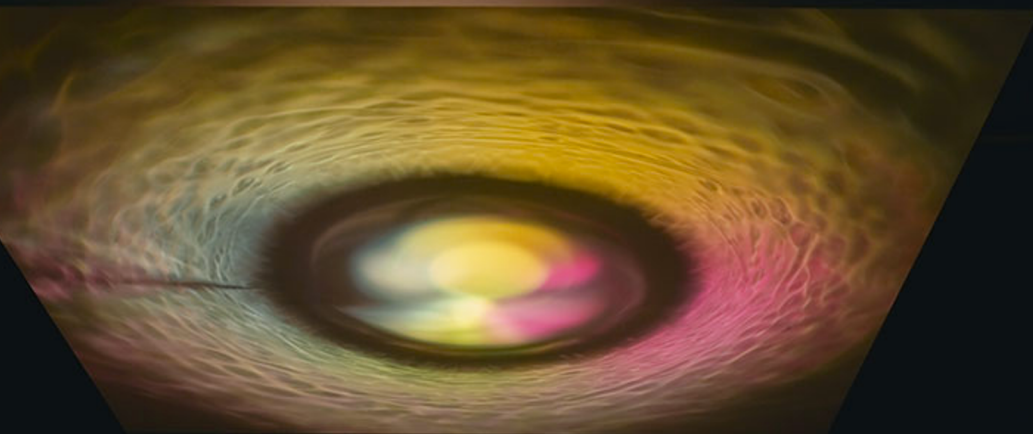
MÚSICA VISUAL E AUDIO-VISUAL: SISTEMAS E INSTRUMENTOS



***O Clavecin Oculaire* do padre Castel, 1740s -70s**

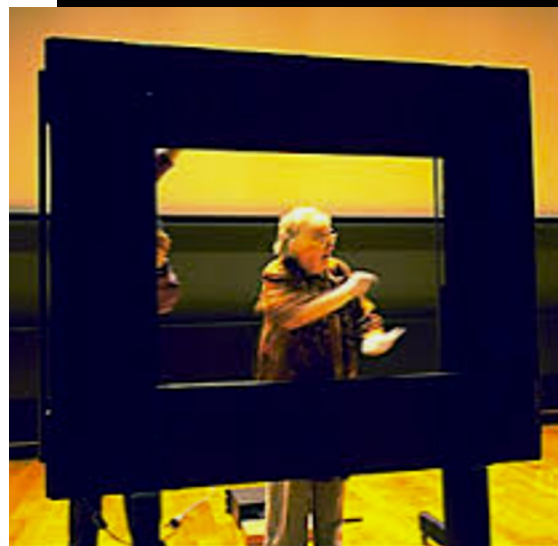
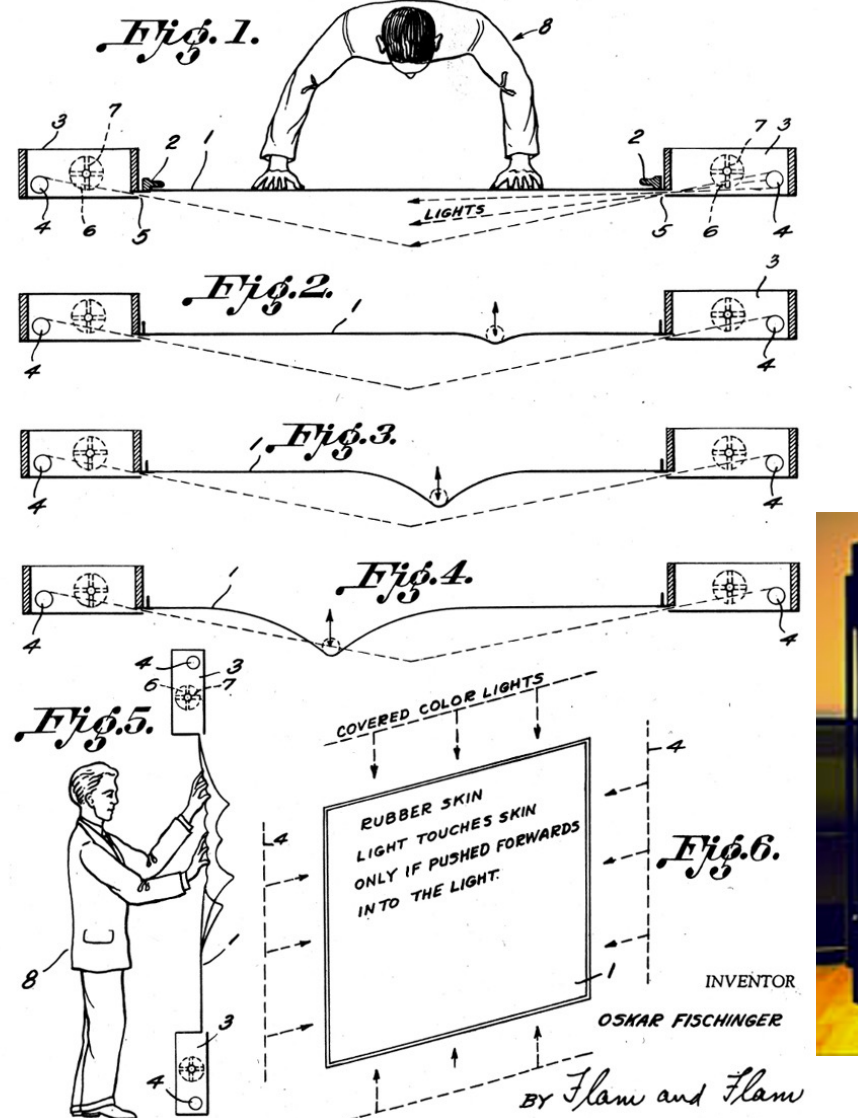


O Color Organ de Wallace Remington, 1895 – 1914



os "Clavilux" de Thorvald Stubber, anos 1930s
e os "Lumia" - pinturas de luz em movimento, silenciosas

<https://vimeo.com/69661801> & <https://www.youtube.com/watch?v=icGdtUQy5qO> &
<https://www.youtube.com/watch?v=-1qc0ygSM1Y>



o "Lumigraph" de Oscar Fishinger, 1940s – 1960s

Instrumento de luz, tocado com as mãos

<https://vimeo.com/13787280>



John & James Whitney, 1960s-80s

“computer graphics”, relações pitagóricas, de harmonia e contraponto

computador analógico: <https://www.youtube.com/watch?v=5eMSPtm6u5Y>

Permutations (1968): <https://www.youtube.com/watch?v=kdYxJ85RSds>

Arabesque (1975): <https://www.youtube.com/watch?v=w7h0ppnUQhE>



o *ZETA violin* de Steina Vasulka, 1990s

instrumento audio-visual com mapeamento digital som / vídeo

<https://vimeo.com/44114554> & <https://www.youtube.com/watch?v=9mg1weOHWSs>



Sensors Sonic Sights, 2006-8

sensores de ultrasons, biomuse e theremin (Cecile Babirole, Atau Tanaka, Laurent Dailleau)

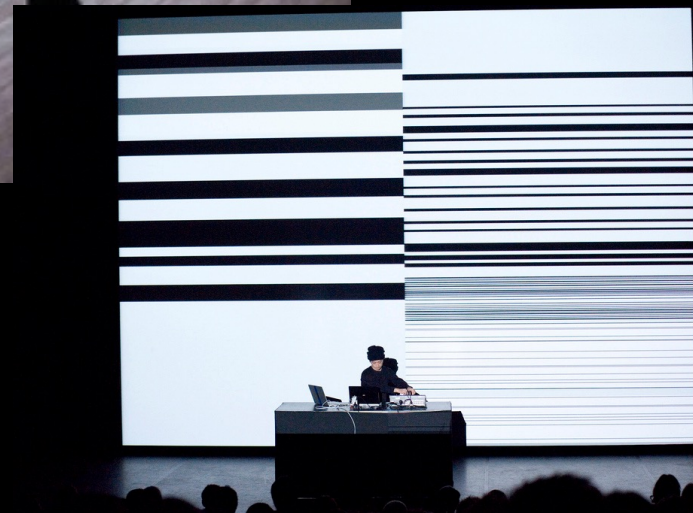
<https://vimeo.com/5683200> & <http://babirole.net/en/ss-sensors-sonics-sights/>



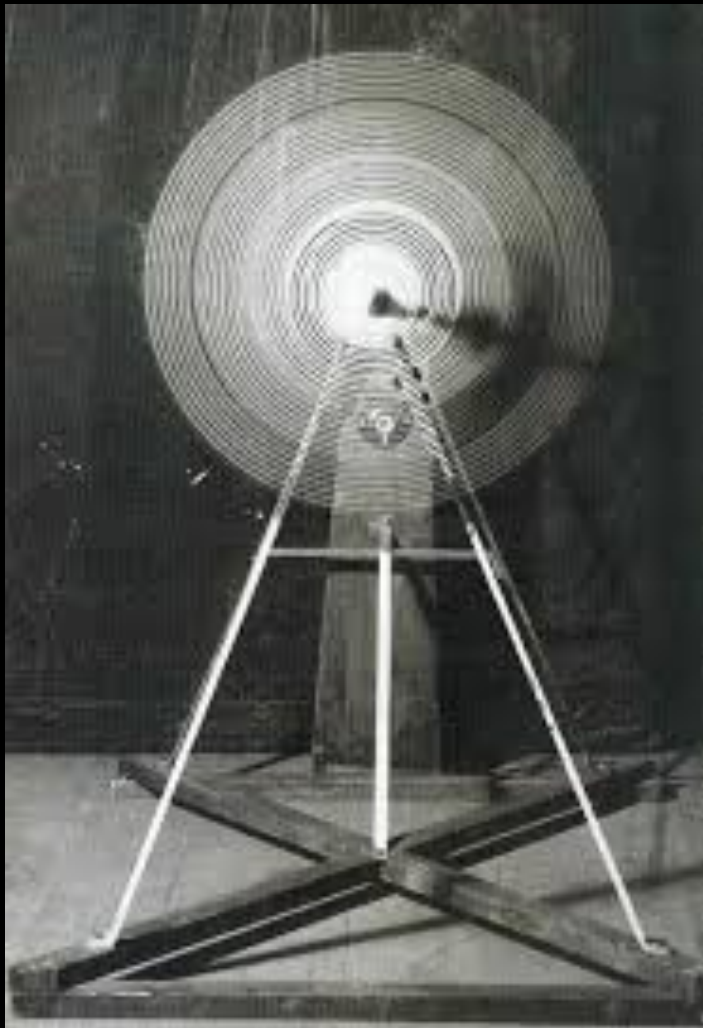
Ryoji Ikeda, *Test Pattern*, 2008

som e imagem sintetizados digitalmente a partir de um mesmo algoritmo

<https://www.youtube.com/watch?v=RFxFWNbW8rk>



SISTEMAS DE ILUSÃO ÓTICA



Marcel Duchamp, *Rotative Plaque Verre*, 1920
um sistema de ilusão óptica

<https://www.youtube.com/watch?v=dq9DcUcUxbY>





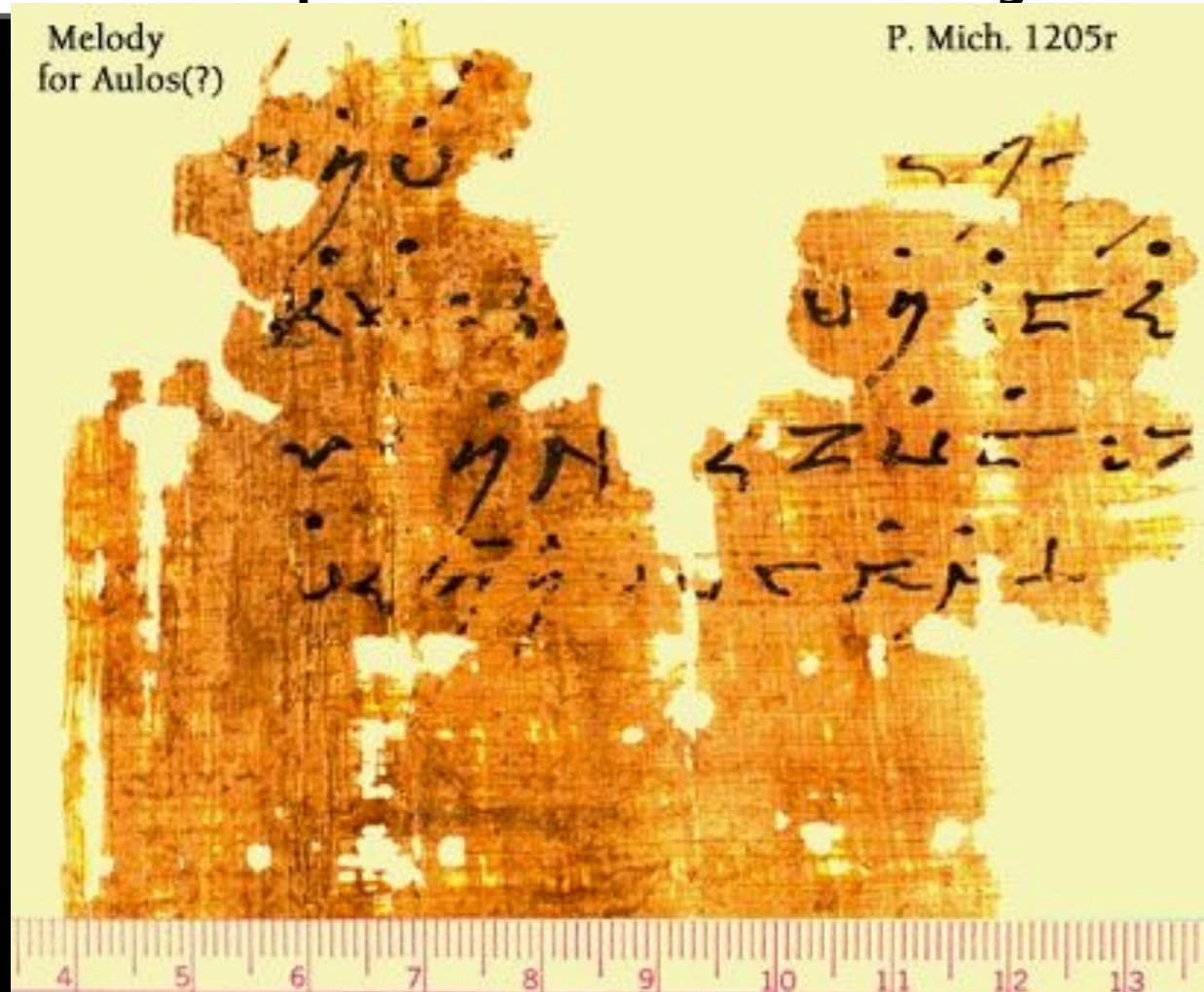
Gregory Barsamian, *The Trap*, 1998

Efeitos estroboscópicos sobre figuras escultóricas criam ilusão de movimento

<https://www.youtube.com/watch?v=4cmDcZY9Trc>

SISTEMAS DE NOTAÇÃO GRÁFICA

O Papiro Instrumental de Michigan



“One of the most significant changes in music in Egypt in the Greco-Roman period was the introduction of Greek-style musical notation. Separate systems of notation indicated instrumental and vocal pitches, while various markings and implicit signals showed rhythm in both systems.”

<http://exhibitions.kelsey.lsa.umich.edu/galleries/Exhibits/MIRE/Introduction/Papyri.html>

Mais info: <https://quod.lib.umich.edu/a/apis/>

Missal medieval

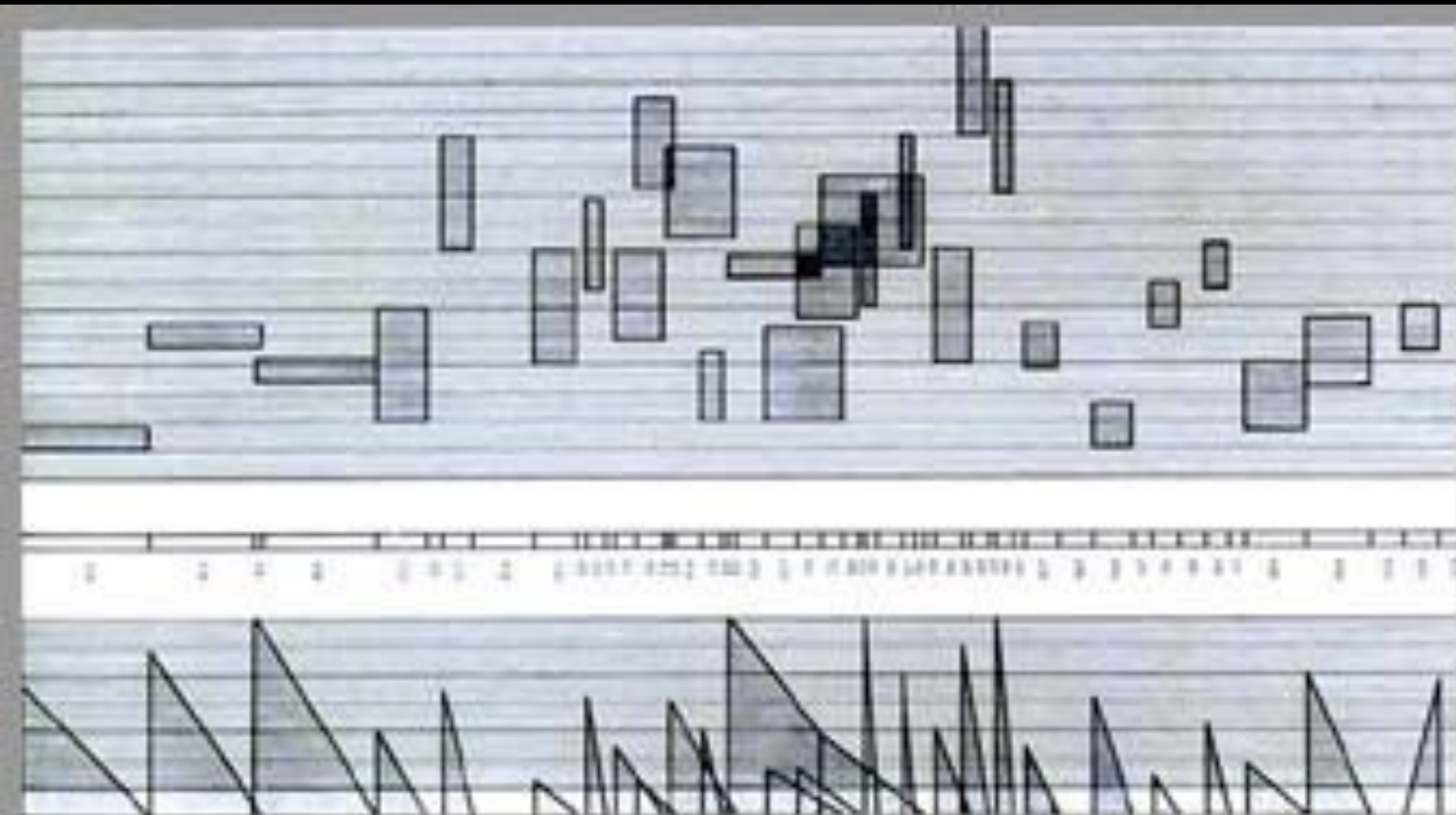
quo corū pariter ⁊ actu delectem
⁊ fructu. **In die scē trinitat. ad**
processu. r. Summe tri. In redeūdo.
r. Honor uir. v. Sit nomē dñi be.
o. o. mīe sempitne d's

Ene
dicta sit
sancta

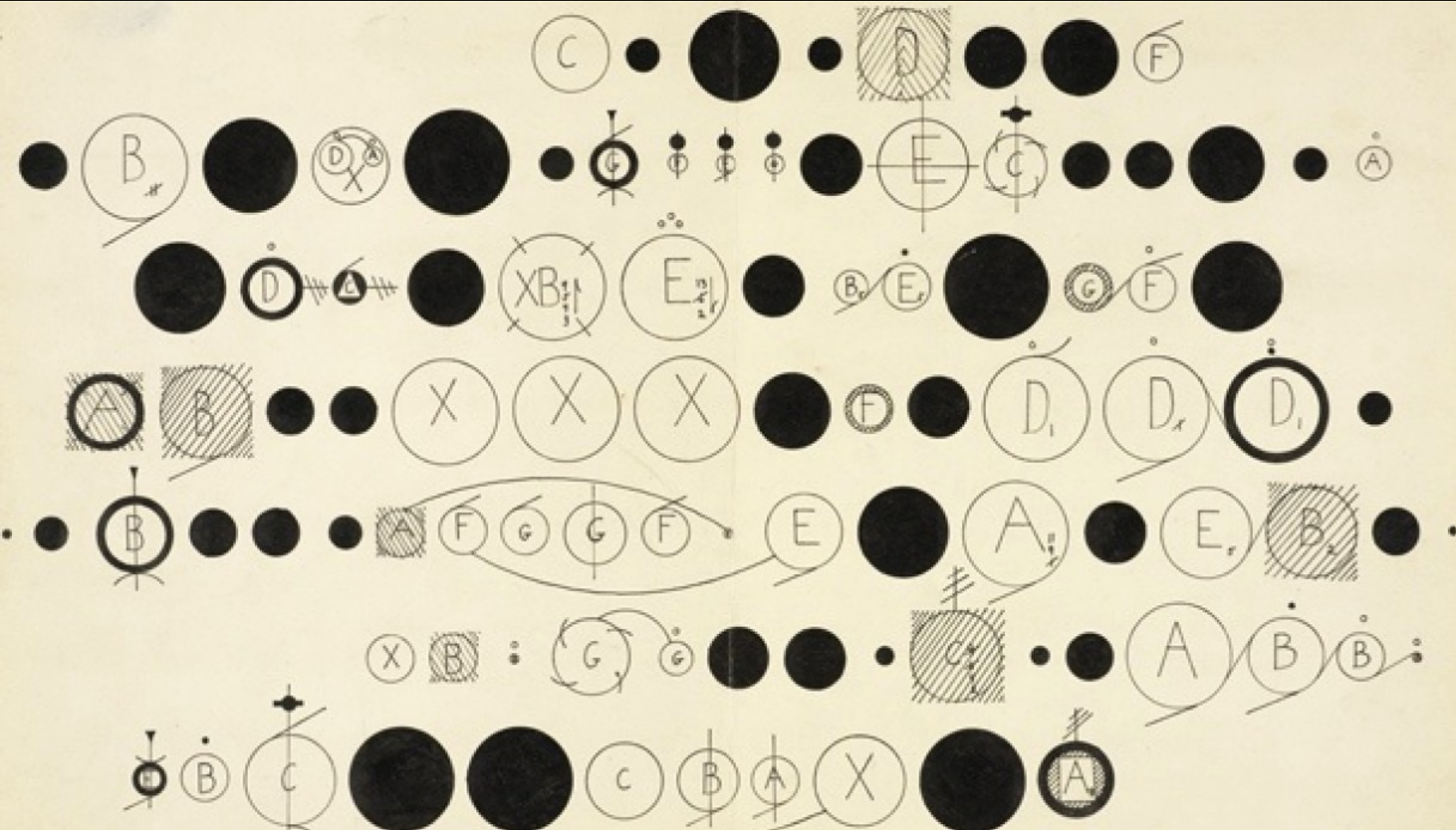
trinitas atq; indiuisa uni
tas confitebi mur e i quia fe



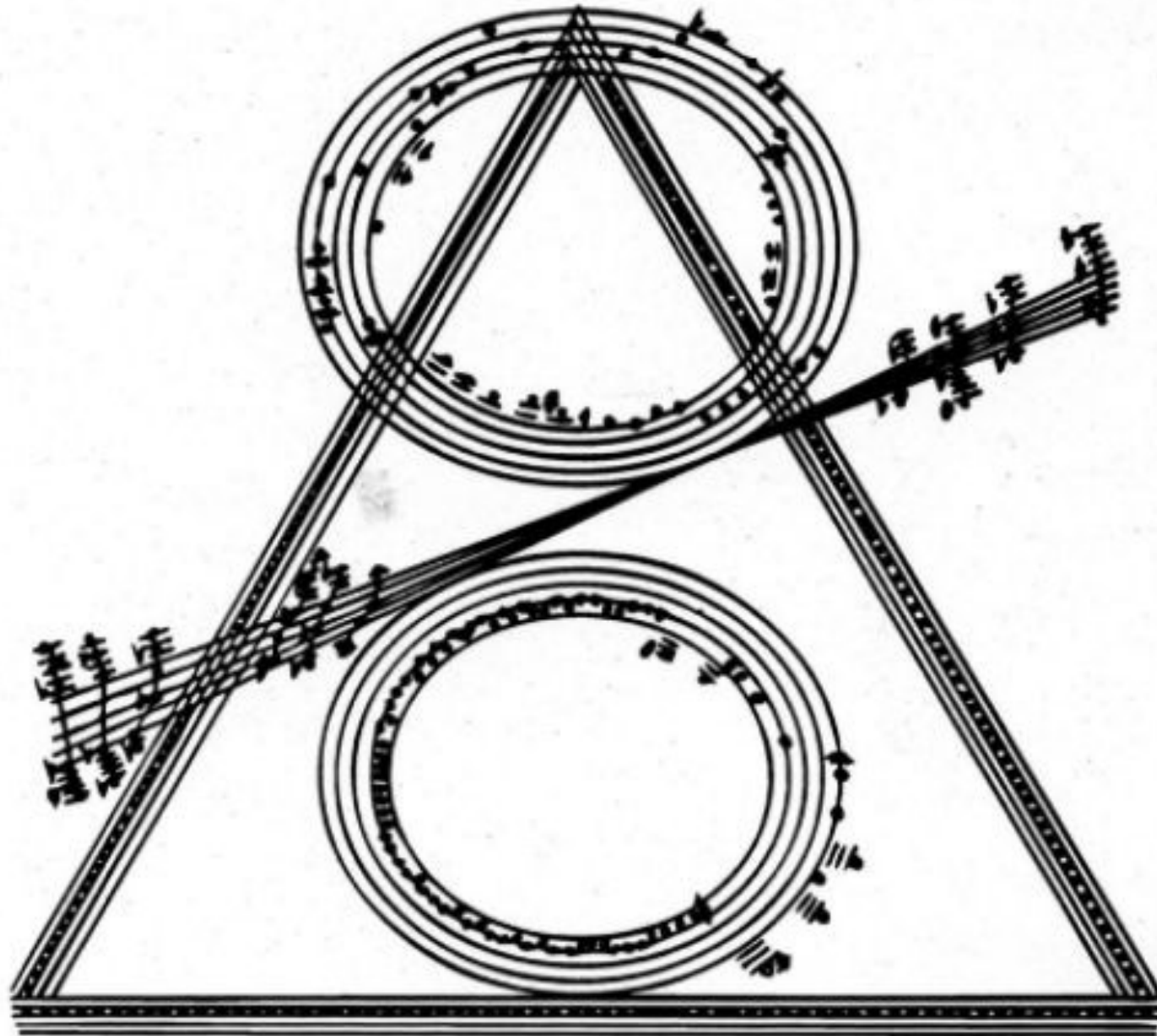
Stockhausen (1954)



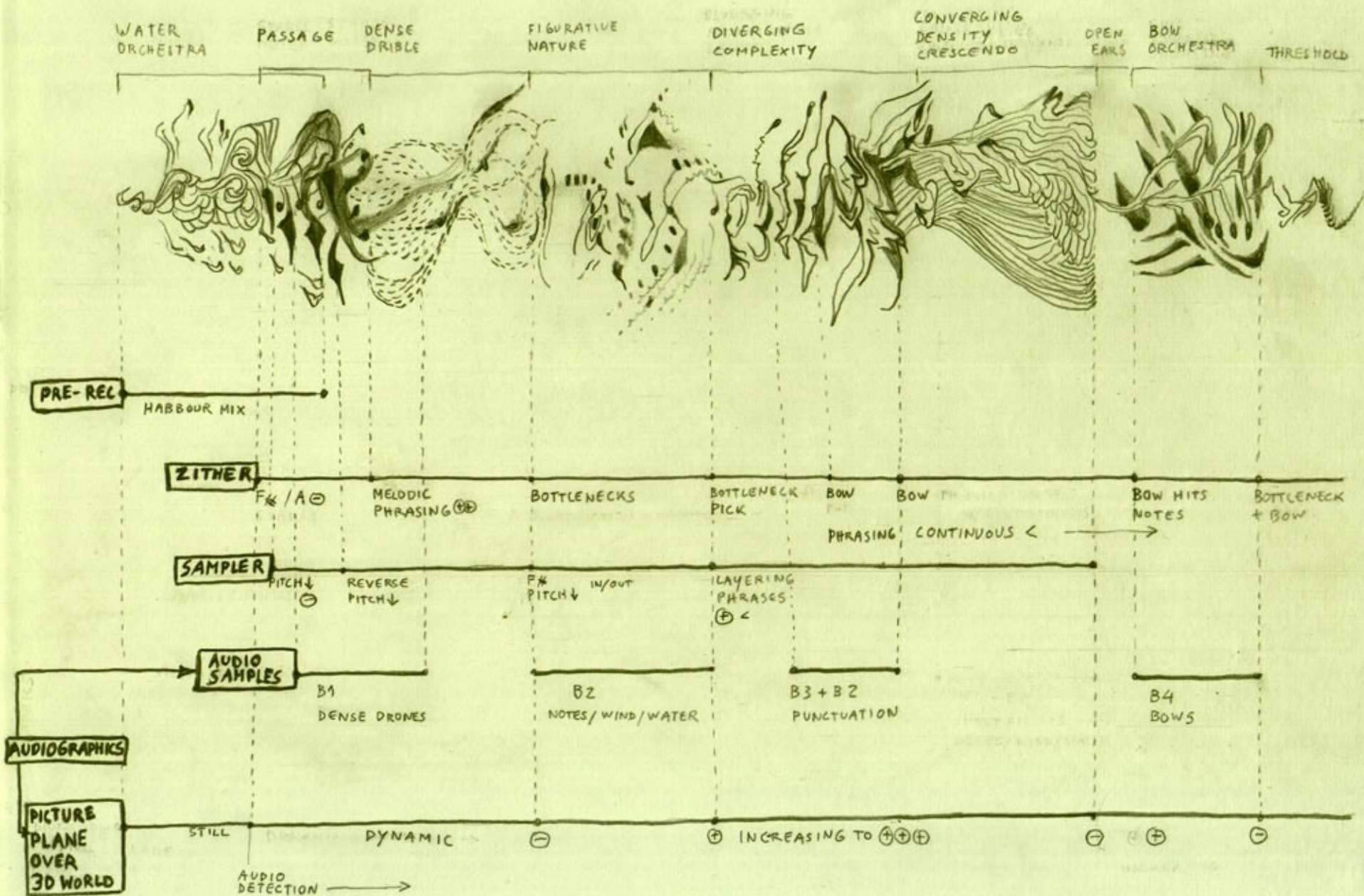
Ben Patterson (1960)



Pozzi Escot (1989)



Adriana Sá (2000-...)



VIDEOS

John Cage: Variations (1958-1966)

<https://vimeo.com/45068649>

Xenakis: Pithoprakta (1955-56)

<https://www.youtube.com/watch?v=nvH2KYYJg-o>

Wehinger, notação visual para acompanhar Ligeti: Artikulation (1970s)

https://www.youtube.com/watch?v=71hNI_skTZQ

Stockhausen: Gesang der Jünglinge (1956)

<https://www.youtube.com/watch?v=s7HD-95knVQ>