AHST 4342-001
History of Media and New Media Art
Fall 2014
Dr. Charissa N. Terranova
University of Texas at Dallas
Arts & Humanities
Monday-Wednesday 2:30-3:45
Class Location: AH2 1.204

November 19, 2014

Bodies, Surrogates, and Emergent Systems

- **Wednesday December 3: CLASS MEETS AT -- Dallas Museum of Art, Isa Genzken Retrospective**
- **Wednesday December 10: CLASS MEETS AT -- Nasher Sculpture Center, Heatherwick Studio exhibition**
- **Monday December 15 at 2:00 p.m. FINAL EXAM**

Man
Machine
The Interface
Robots
Automata
Cyborgs

Clockwork Metaphors

- Nicolaus Copernicus (1473-1543)
- Joachim Rheticus in his *First Account* of Copernicus' new system (1540) asked rhetorically: "Why then should we not give God, the Creator of Nature, credit for the kind of skill that we see in common clockmakers?"
- René Descartes, "There are certainly no rules in Mechanics that do not also belong to Physics [i.e., physiology], of which it is a part or special case: it is no less natural for a clock composed of wheels to tell the time than for a tree grown out of a given seed to produce the corresponding fruit."
- René Descartes on animals, free will, and **determinism**, "From the extreme perfection of certain actions we suspect that they do not have a free will. I know quite well that animals do many things better than we, but that does not astonish me; for precisely that serves to prove that they act naturally and by such spring forces as a

Clockwork Metaphors (continued)

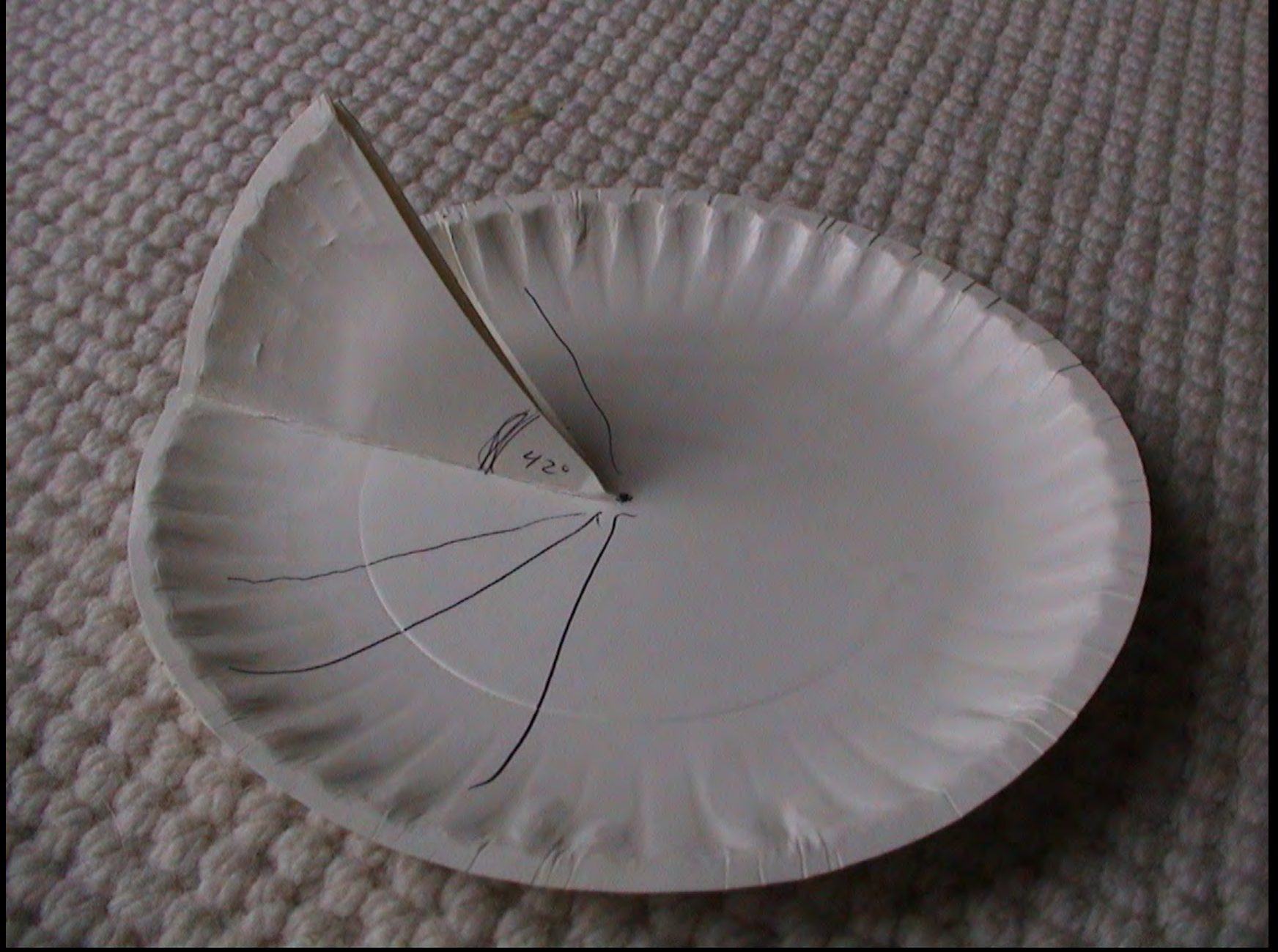
- Descartes (continued) "…a clock which indicates what time it is is far better than our judgment tells us. And when swallows come in Spring, the doubtless act like clocks."
- Thomas Hobbes, *Leviathan* (1651):

NATURE (the art whereby God hath made and governs the world) is by the art of man, as in many other things, so in this also imitated, that it can make an artificial animal. For seeing life is but a motion of limbs, the beginning whereof is in some principal part within, why may we not say that all automata (engines that move themselves by springs and wheels as doth a watch) have an artificial life? For what is the heart, but a spring; and the nerves, but so many strings; and the joints, but so many wheels, giving motion to the whole body, such as was intended by the Artificer? Art goes yet further, imitating that rational and most excellent work of Nature, man. For by art is created that great LEVIATHAN called a COMMONWEALTH, or STATE (in Latin, CIVITAS), which is but an artificial man, though of greater stature and strength than the natural, for whose protection and defence it was intended; and in which the sovereignty is an artificial soul, as giving life and motion to the whole body; the magistrates and other officers of judicature and execution, artificial joints; reward and punishment (by which fastened to the seat of the sovereignty, every joint and member is moved to perform his duty) are the nerves, that do the same in the body natural; the wealth and riches of all the particular members are the strength; salus populi (the people's safety) its business; counsellors, by whom all things needful for it to know are suggested unto it, are the memory; equity and laws, an artificial reason and will; concord, health; sedition, sickness; and civil war, death.

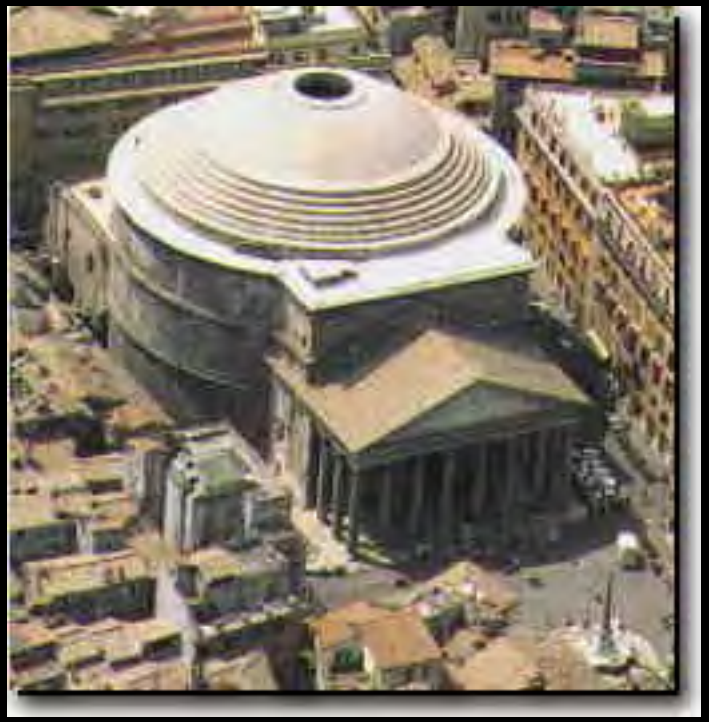
Clock Metaphors (continued)

- Robert Boyle, "…when…I see curious clock, how orderly every wheel and other parts perform its own motions…; I do not imagine, that any of the wheels, etc. or the engine itself is endowed with reason, but commend that of the worksman, who framed it so artificially. So when I contemplate the actions of those several creatures, that make up the world, I do not conclude…the vast engine itself, to act with reason or design, but admire and praise the most wise Author…"
- Christian Wolff, *Cosmologia generalis* (1731), "The world behaves like a clockwork automaton."
- Julien Offray de La Mettrie, *Man a Machine* (1748):

  The human body is a machine which winds its own springs. It is the living image of perpetual movement. Nourishment keeps up the movement which fever excites. Without food, the soul pines away, goes mad, and dies exhausted. The soul is a taper whose light flares up the moment before it goes out. But nourish the body, pour into its veins life-giving juices and strong liquors, and then the soul grows strong like them, as if arming itself with a proud courage, and the soldier whom water would have made to flee, grows bold and runs joyously to death to the sound of drums. Thus a hot drink sets into stormy movement the blood which a cold drink would have calmed.



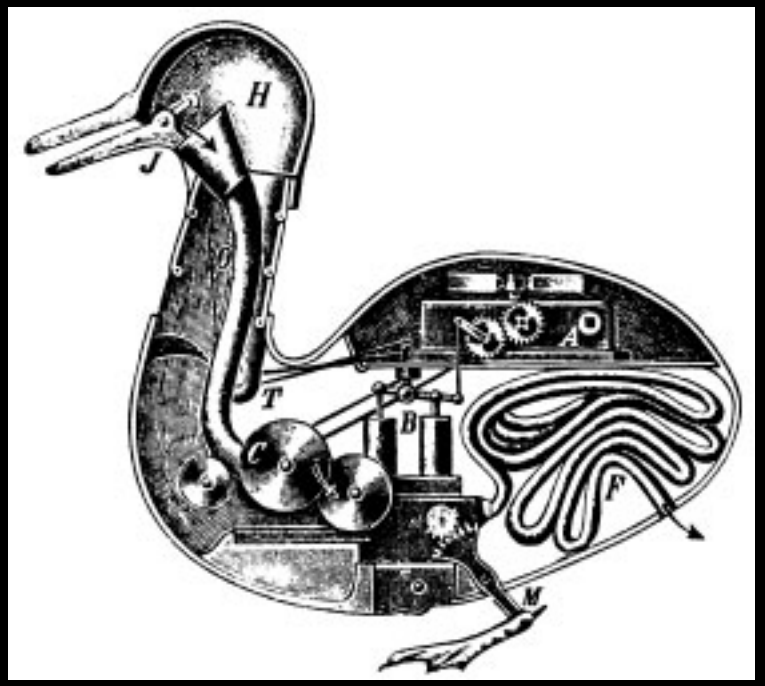
sundials
gnomon



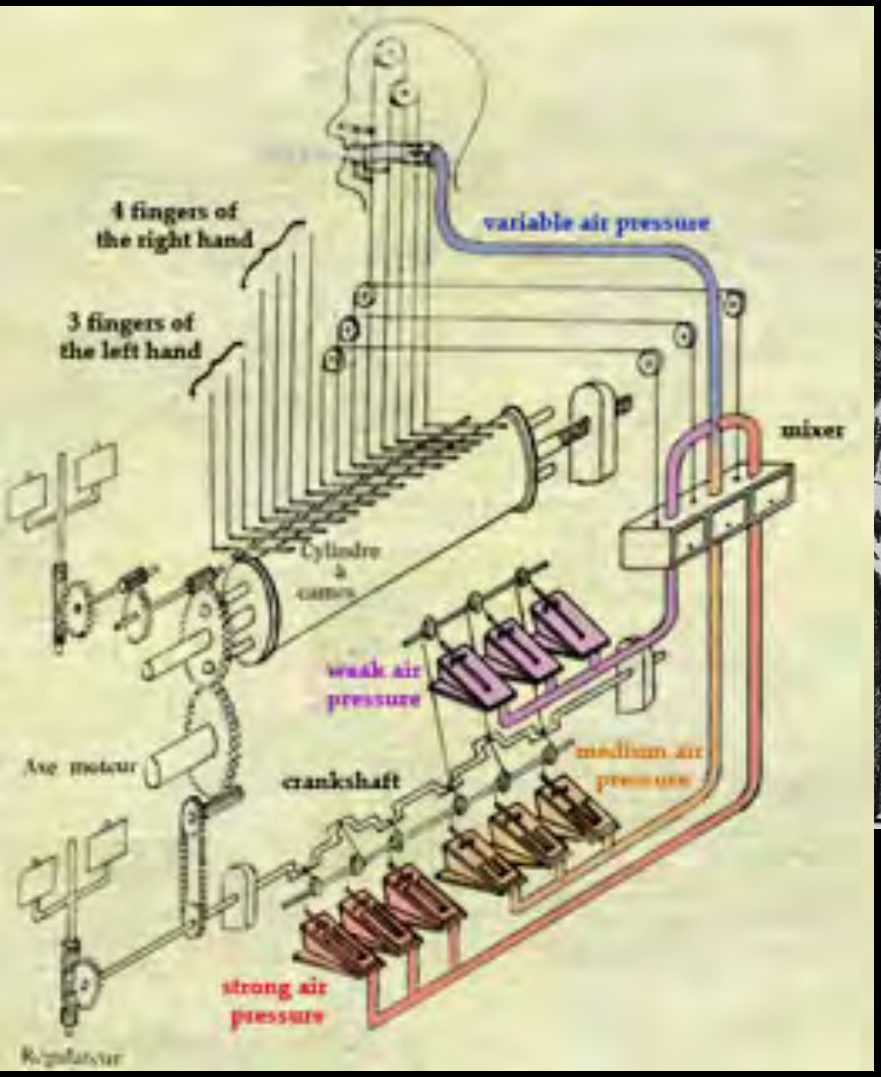
Pantheon, Rome,
126 AD

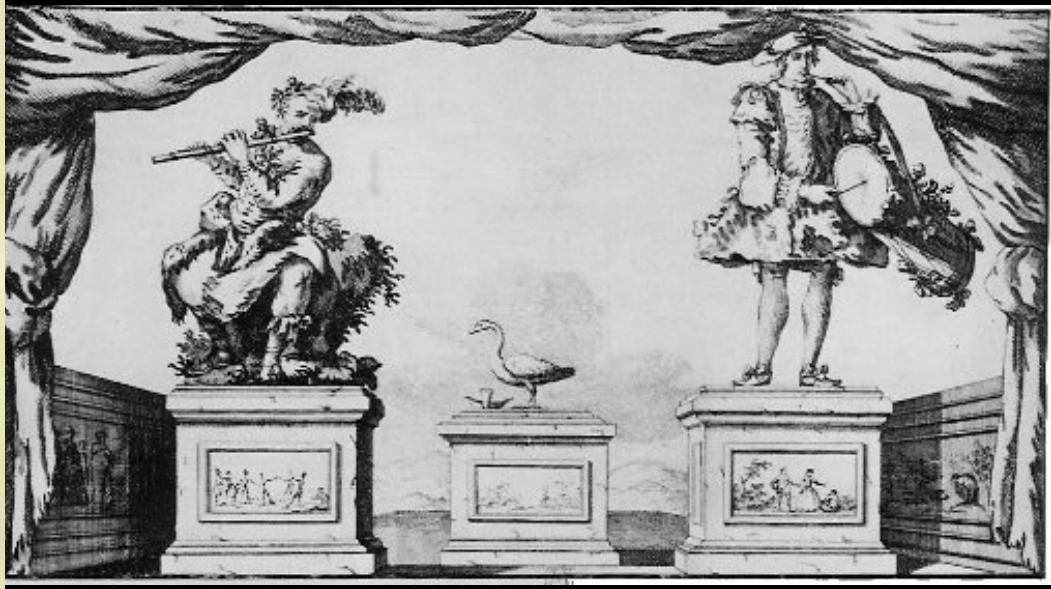
Leonardo da Vinci, Robot, 1495

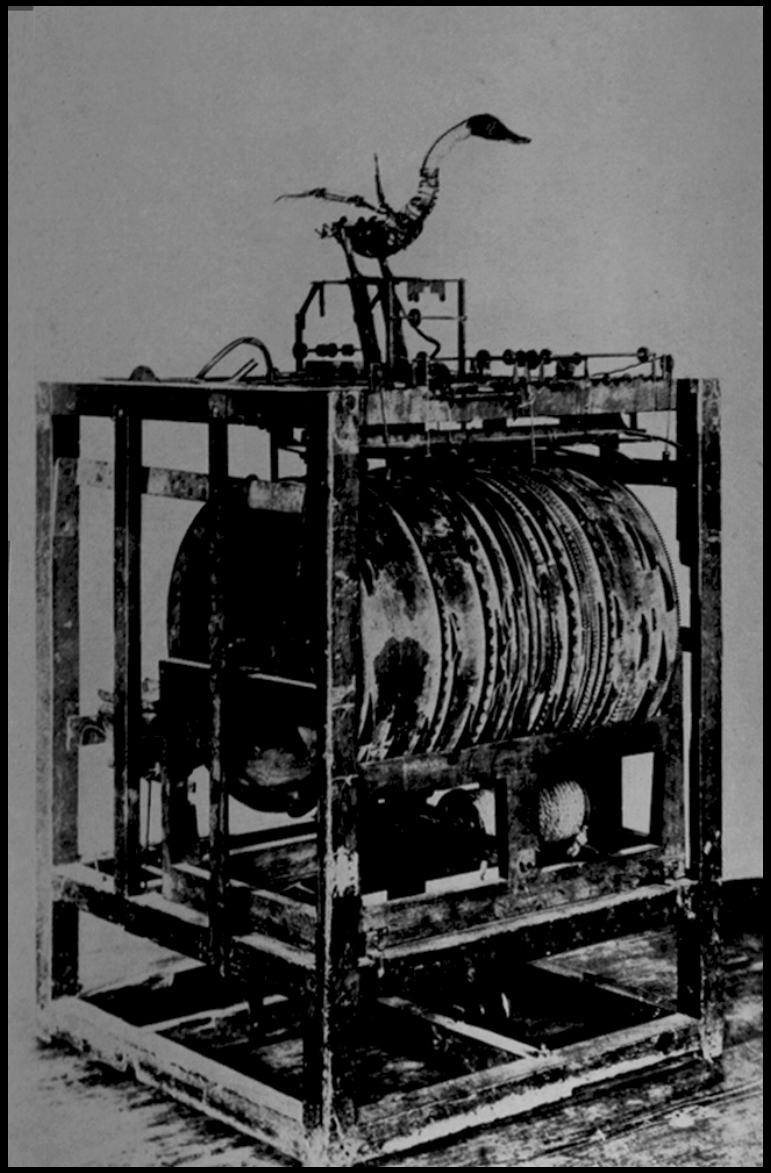
Wunderkammer/Kunstkammer, 15-16th centuries, "Musei Wormiani Historia", the frontispiece from the *Museum Wormianum* depicting Ole Worm's cabinet of curiosities



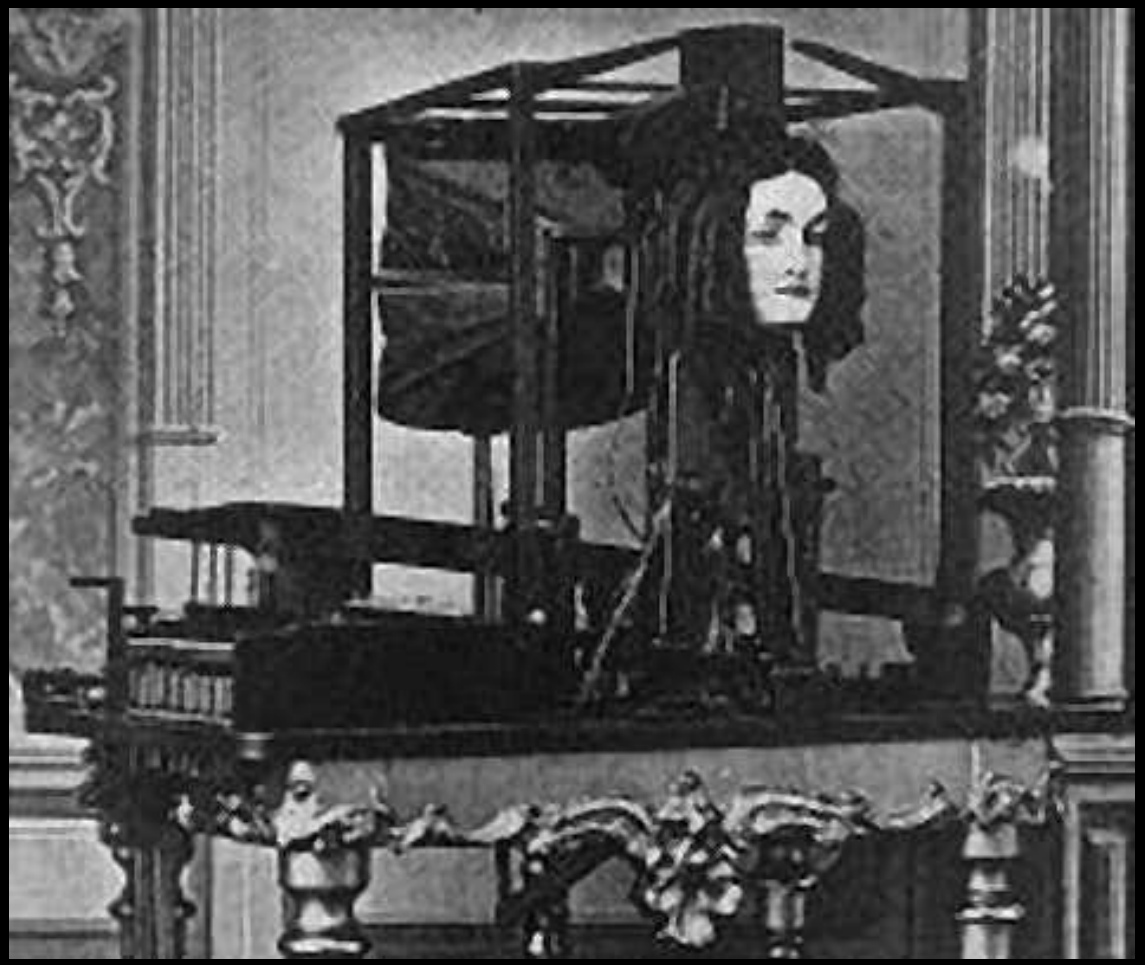
Jacques de Vaucanson, Flute Player, 1737; Digesting Duck, 1739

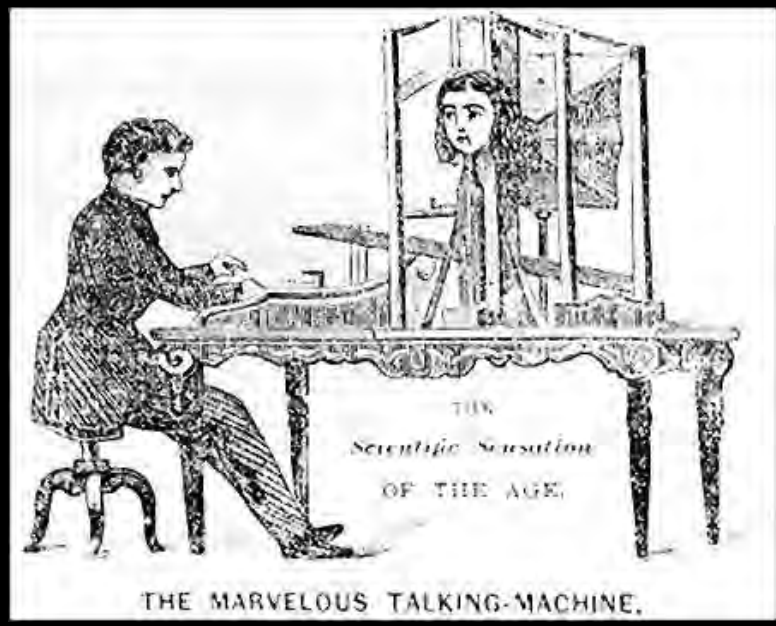

4 fingers of
the right hand
3 fingers of
the left hand
variable air pressure
mixer
Cylindre
à
cames
weak air
pressure
Axe moteur
crankshaft
medium air
pressure
strong air
pressure





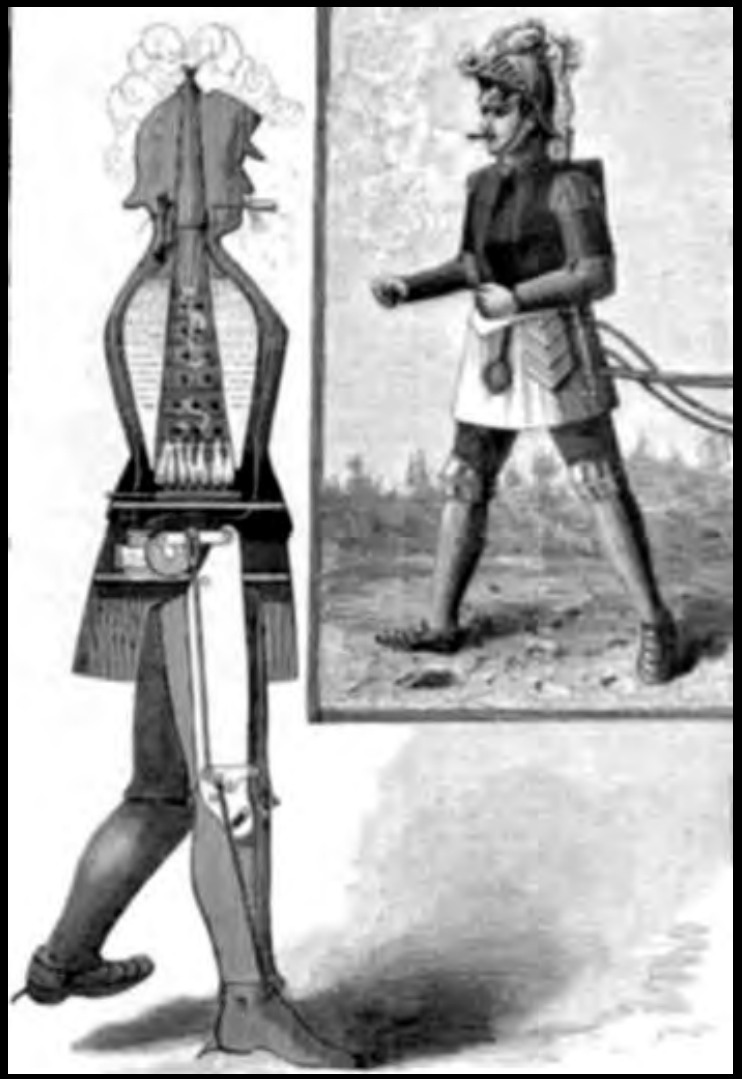
http://www.youtube.com/watch?v=UoJ0OHWl3b8





THE MARVELOUS TALKING-MACHINE.

Joseph Faber, Euphonia/Talking Machine, 1830-40



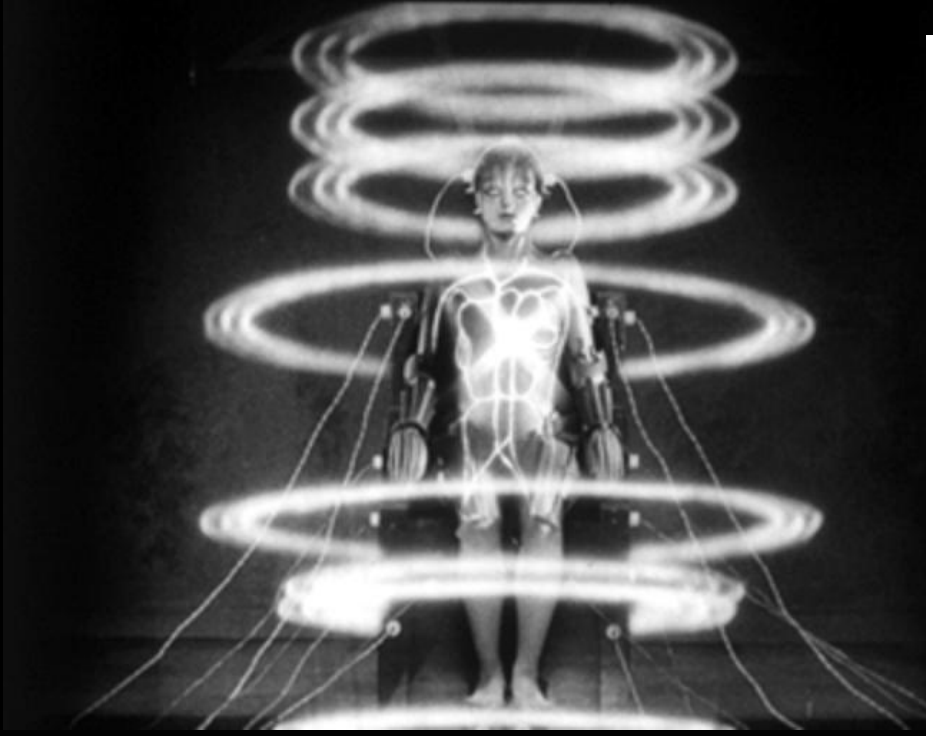
The New York TImes - 15th April 1893

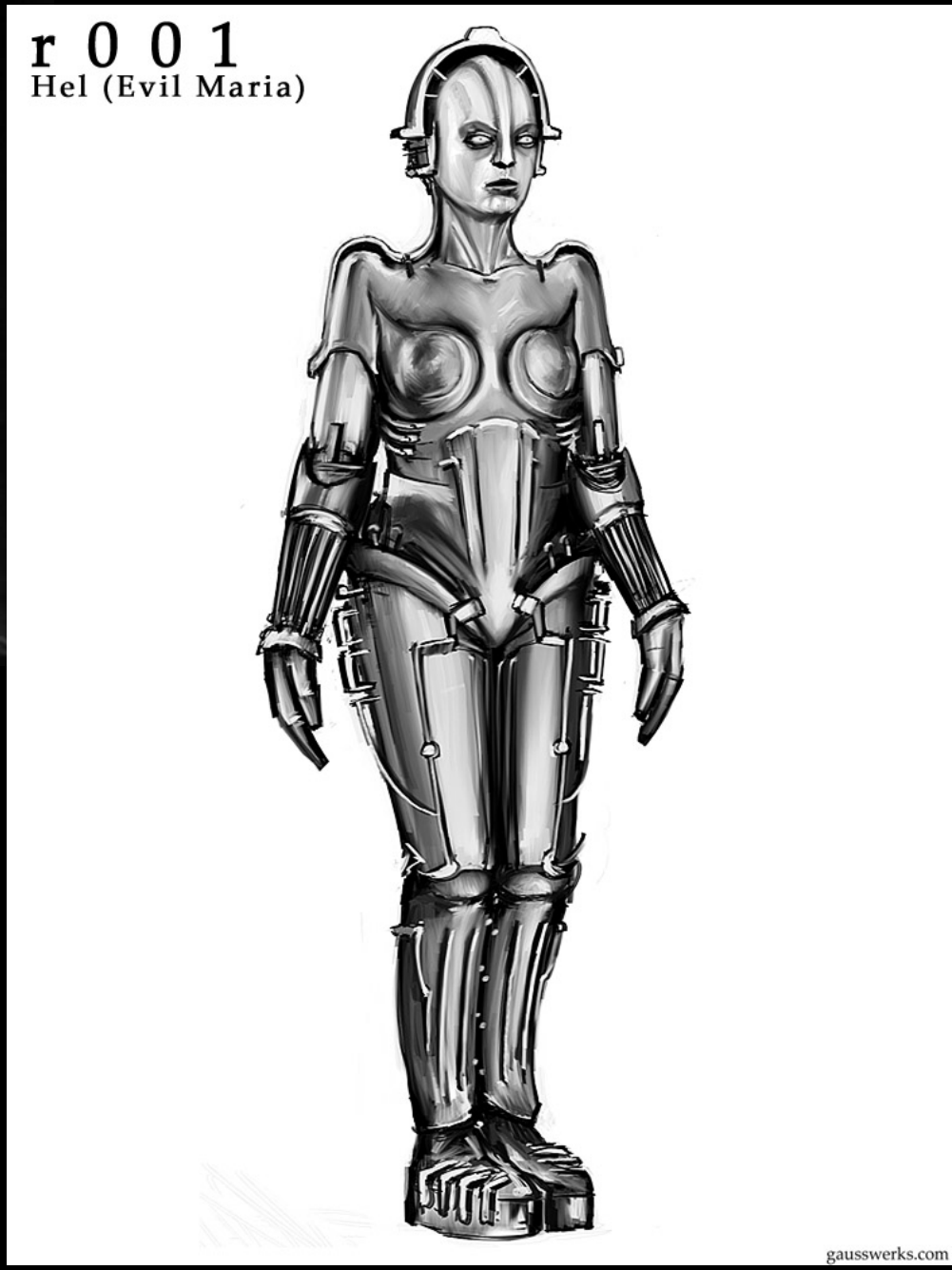
A MECHANICAL MAN

Some New Features of an Invention Many Will Remember.

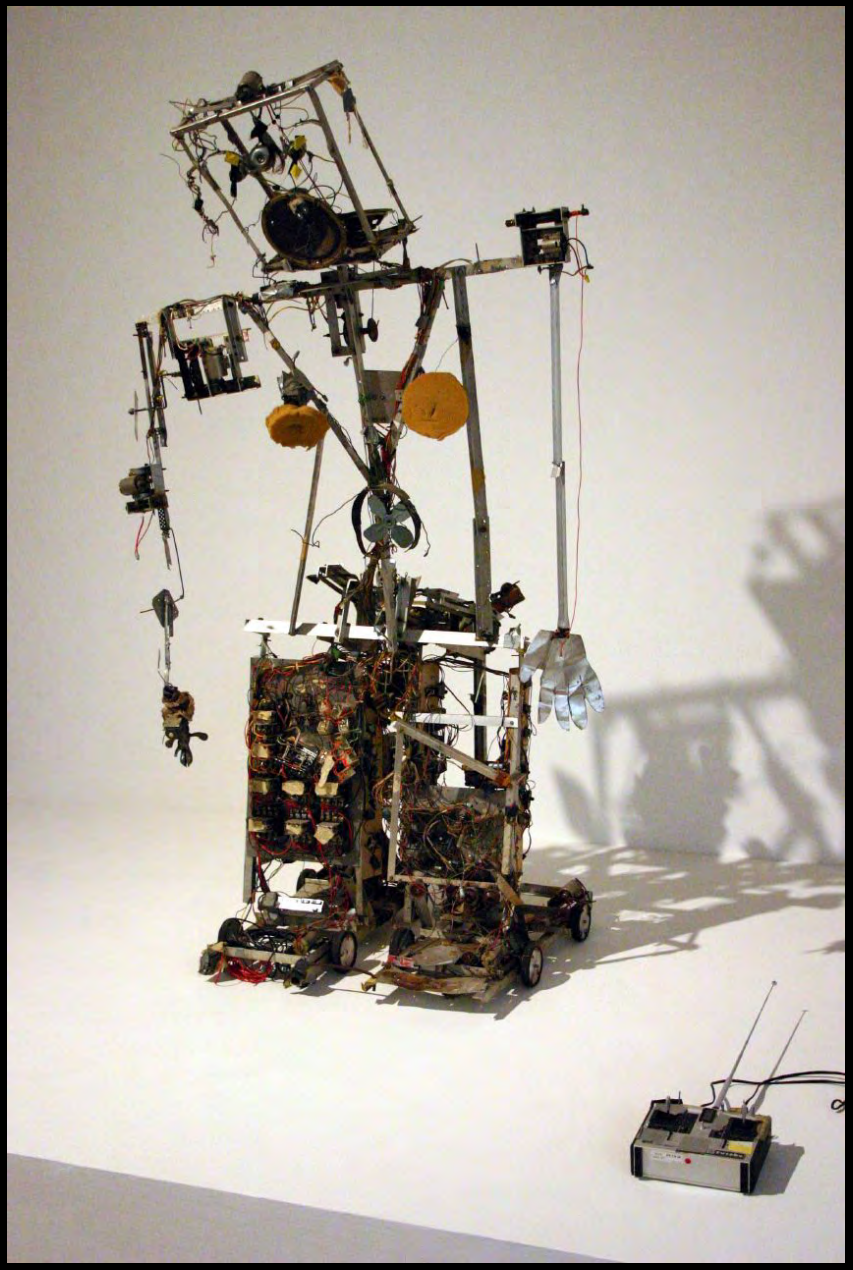
Many years ago, before the application of steam as a motive power had reached the stage of development of the present time, many devices were constructed to make the force subservient to man. One of the most ingenious of these many devices could have been seen within recent times in a down-town junkshop. It was the figure of a man, constructed of iron, and fitted with internal mechanism, which, when put in motion by steam, was intended to cause the figure to move much as a human being walks.

During the past two years Prof. George Moore, a native of Canada, has been at work upon a motive engine, built upon the same plans as the old discarded "iron man," and at last he has succeeded in constructing a model which will not only walk about with a firm steady gait, but also exerts considerable tractive power. The iron man, as shown in the accompanying illustration, seems in appearance like a mediaeval knight. In operation the action is quite natural, the hip, knee, and ankle movements being successfully imitated. It moves along at a brisk walk, and can cover about four or five miles an hour. The iron man is about 6 feet in height, and when in full operation, it is said, cannot be held back by two men.





Fritz Lang, *Metropolis*, 1927



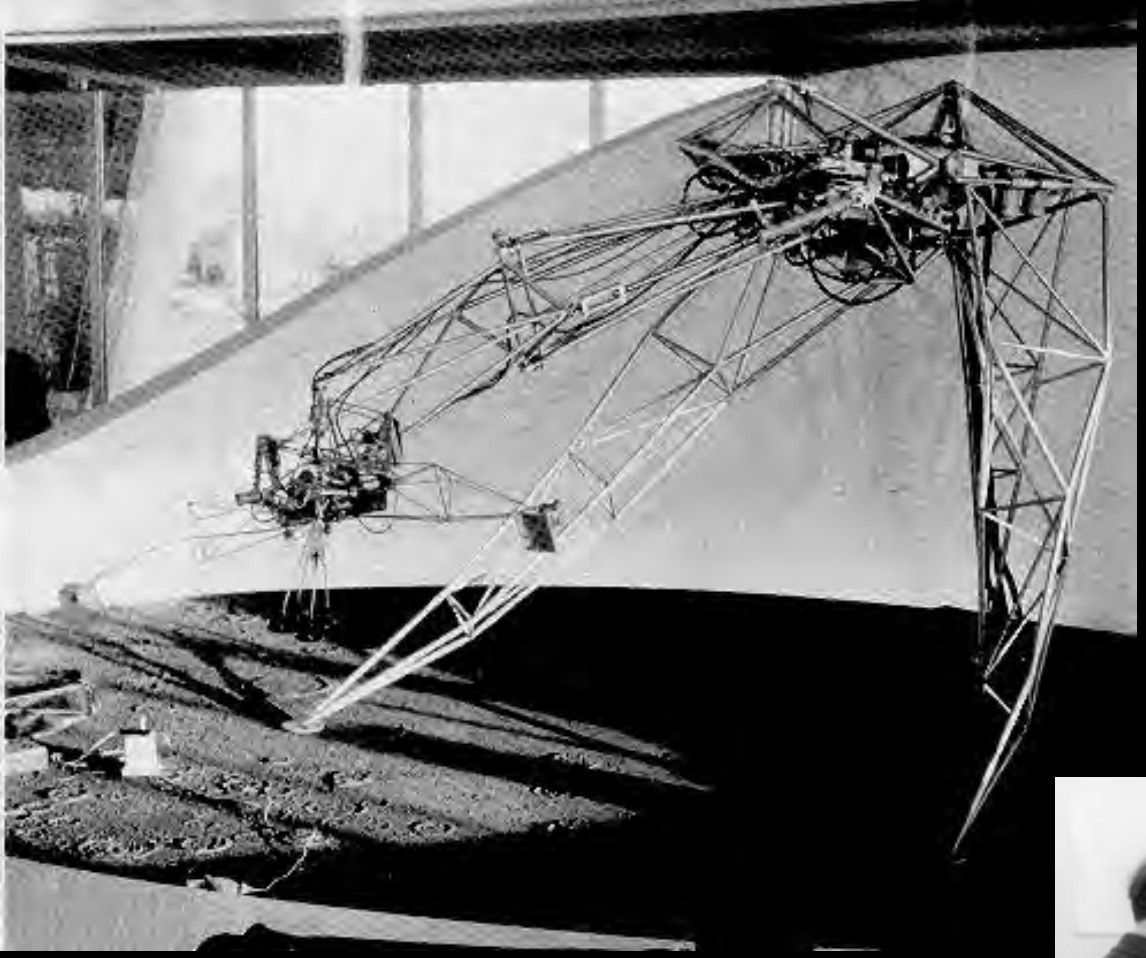
Nam June Paik and Shuya Abe, Robot K-456, 1964

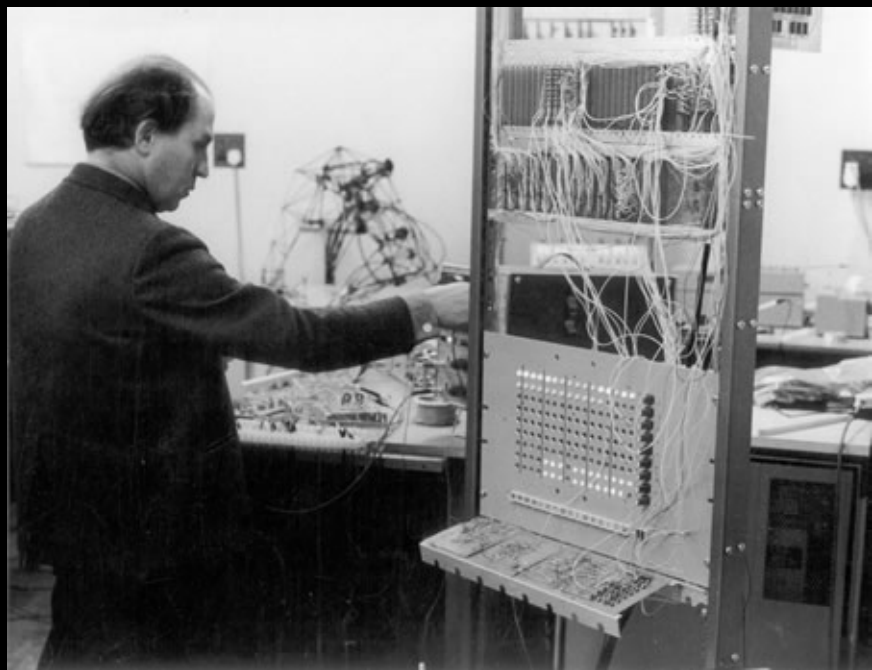
https://www.youtube.com/watch?v=5-QIm7EgNlM

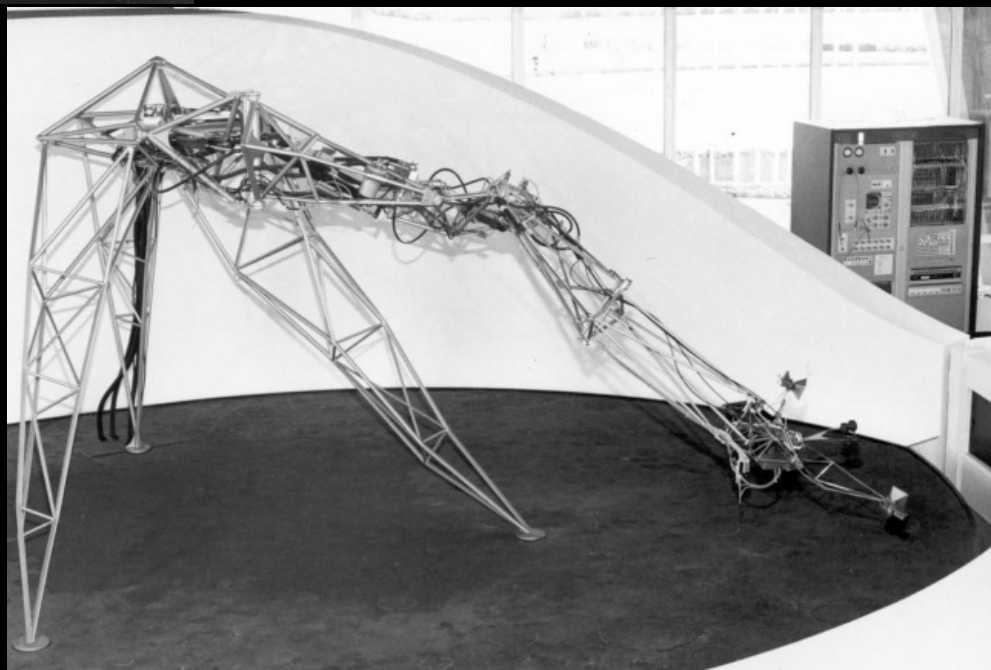
Robot and Cyborg Art
Jack Burnham (1968)

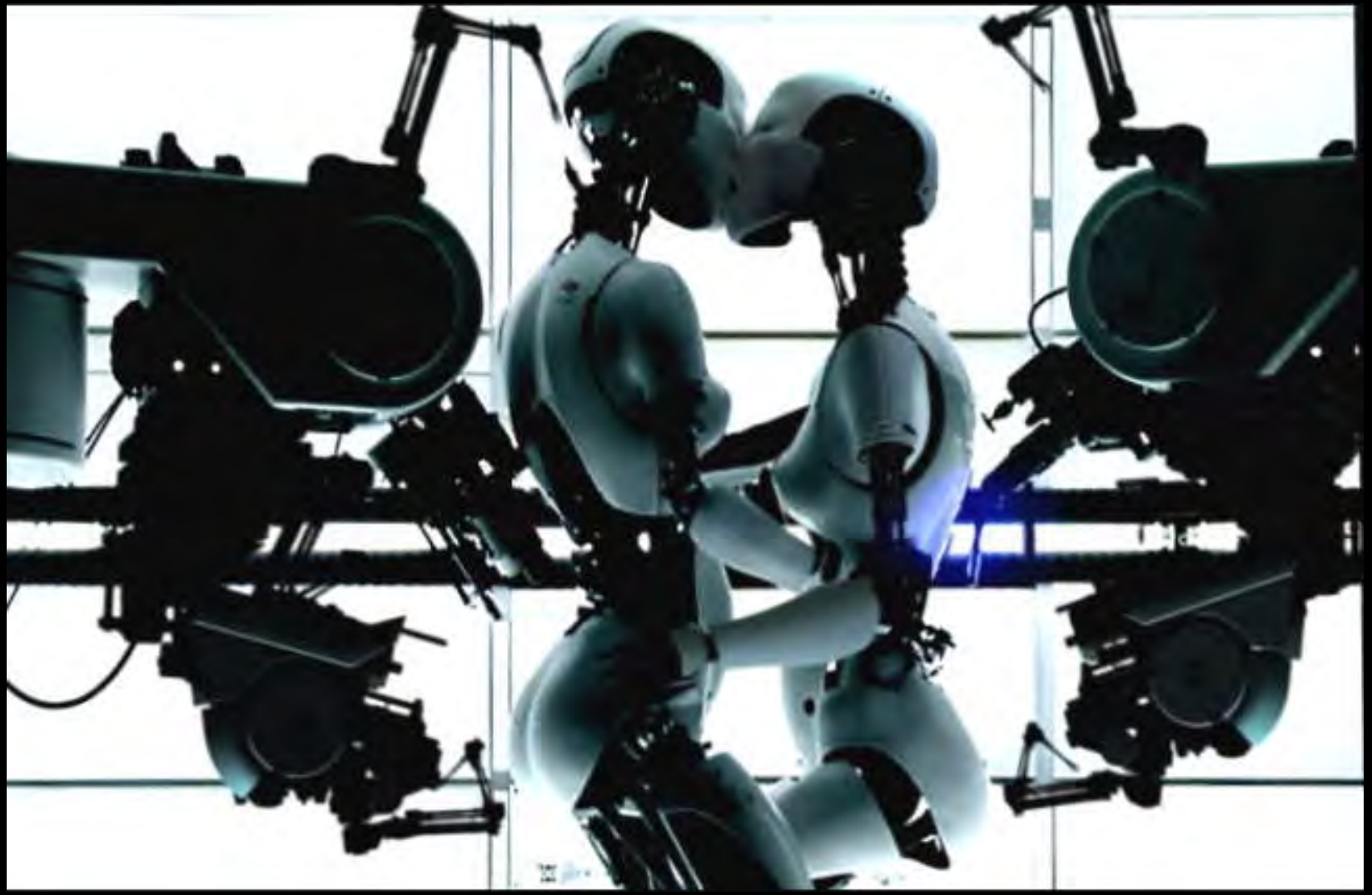
…the cultural obsession with the art object is slowly disappearing and being replaced by what might be called 'systems consciousness'. Actually, this shifts from the direct shaping of matter to a concern for organizing quantities of energy and information. Seen another way, it is a refocusing of aesthetics awareness – based on future scientific-technological evolution – on matter-energy information exchanges and away from the invention of solid artefacts. These new systems prompt us *not* to look at the 'skin' of objects, but at those meaningful relationships within and beyond their visible boundaries.

Edward Ihnatowicz, The Senster, 1969-70









Bjork/Chris Cunningham, *All Is Full of Love*, 1999
https://www.youtube.com/watch?v=EjAoBKagWQA

Robotic Art
Eduardo Kac and Marcel.li Antunezroca (1997)

…Robotic art can occur in physical places, in telematic space, in virtual environments, or any combination of these that includes an actual location.

Robots belong to a new category of objects and situations disruptive to the traditional taxonomy of art. Where one once spoke of boundaries, borders, limits we find today new territories. These new artistic terrains are open to new possibilities and relate to one another in productive ways. In these new heterodox terrains, hybrid creatures within no preceding models are born. Coupled with telecommunications media…robotics gives origin to telepresence art, in which the robot is the host of a remotte subject.

Hanson Robotics – Albert Einstein, 2011

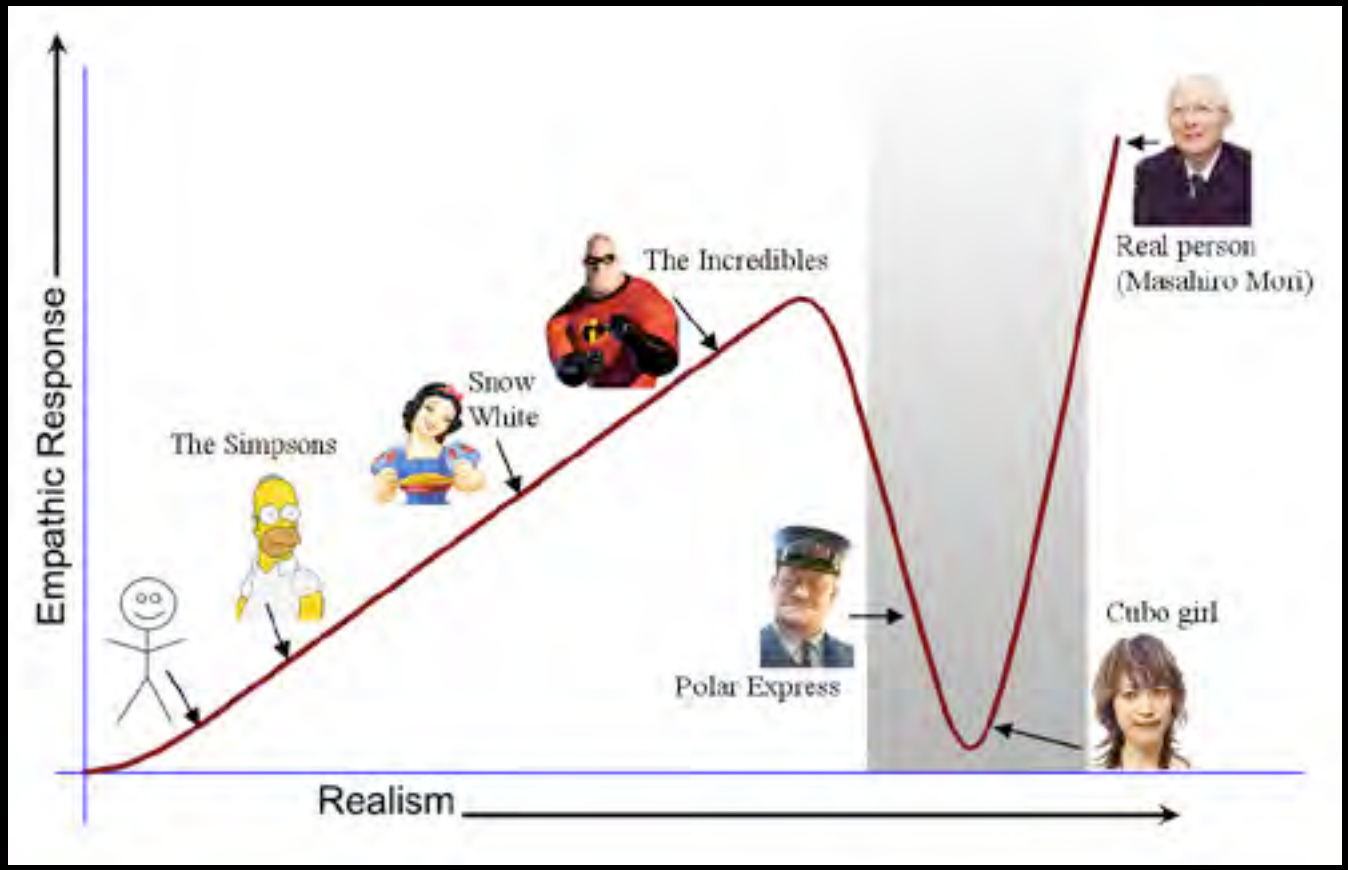
http://hansonrobotics.wordpress.com

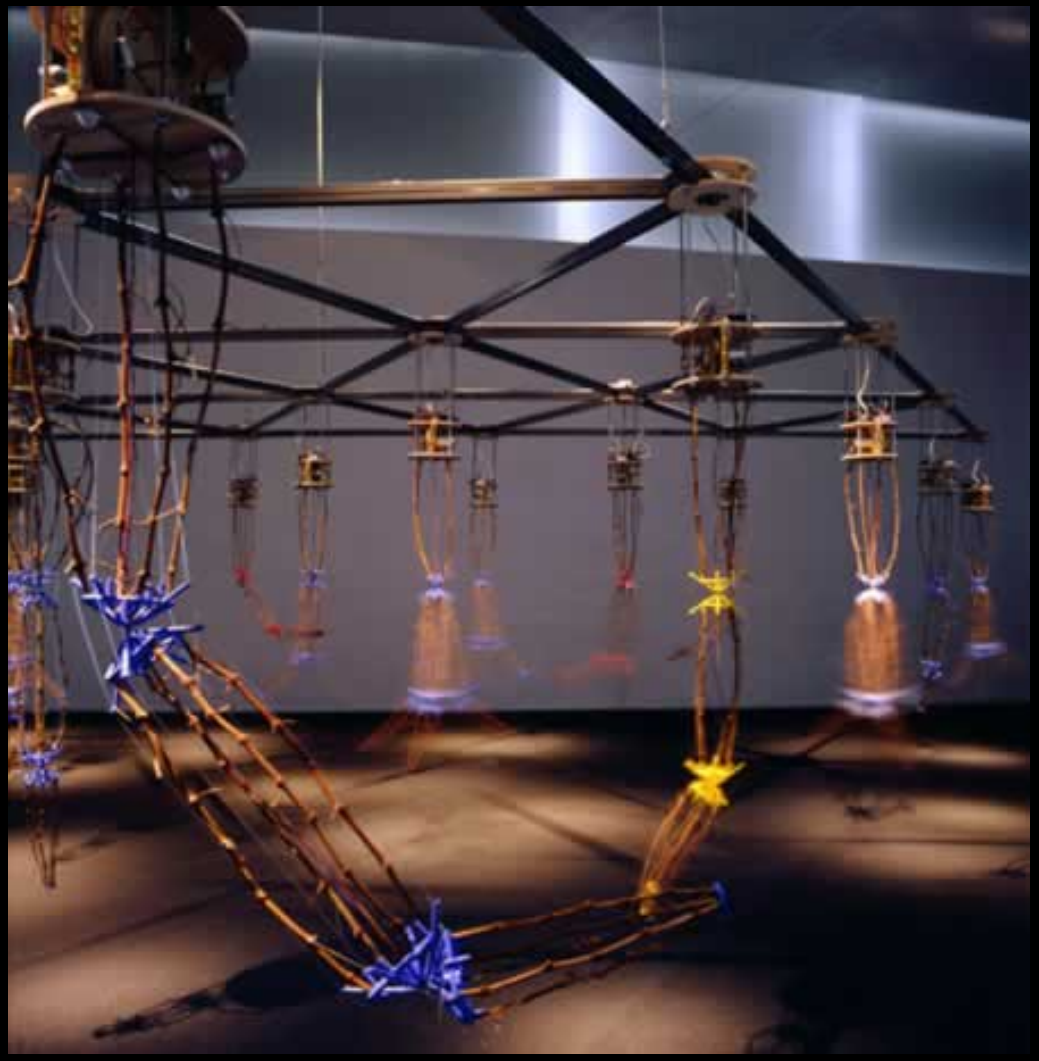
THE UNCANNY VALLEY

THE UNCANNY VALLEY

The ‘uncanny valley’ is a term used in robotics. It refers to the fact that when humans are shown perfectly humanoid features, they feel calm and happy. This indicates that the viewer can relate to the humanoid specimen. The specimen can be understood. Whether the humanoid features are actually human or robotic, doesn’t matter. The same feelings are also elicited, when the viewer sees a robot that is obviously a robot. However, when shown a robot that is ‘almost’ human, the viewer enters the ‘uncanny valley’. In the uncanny valley, viewers experience revulsion, dislike, fear and other iterations of distaste.

bloowillbooks.wordpress.com/2011/08/20/will-botox-flatten-the-uncanny-valley/





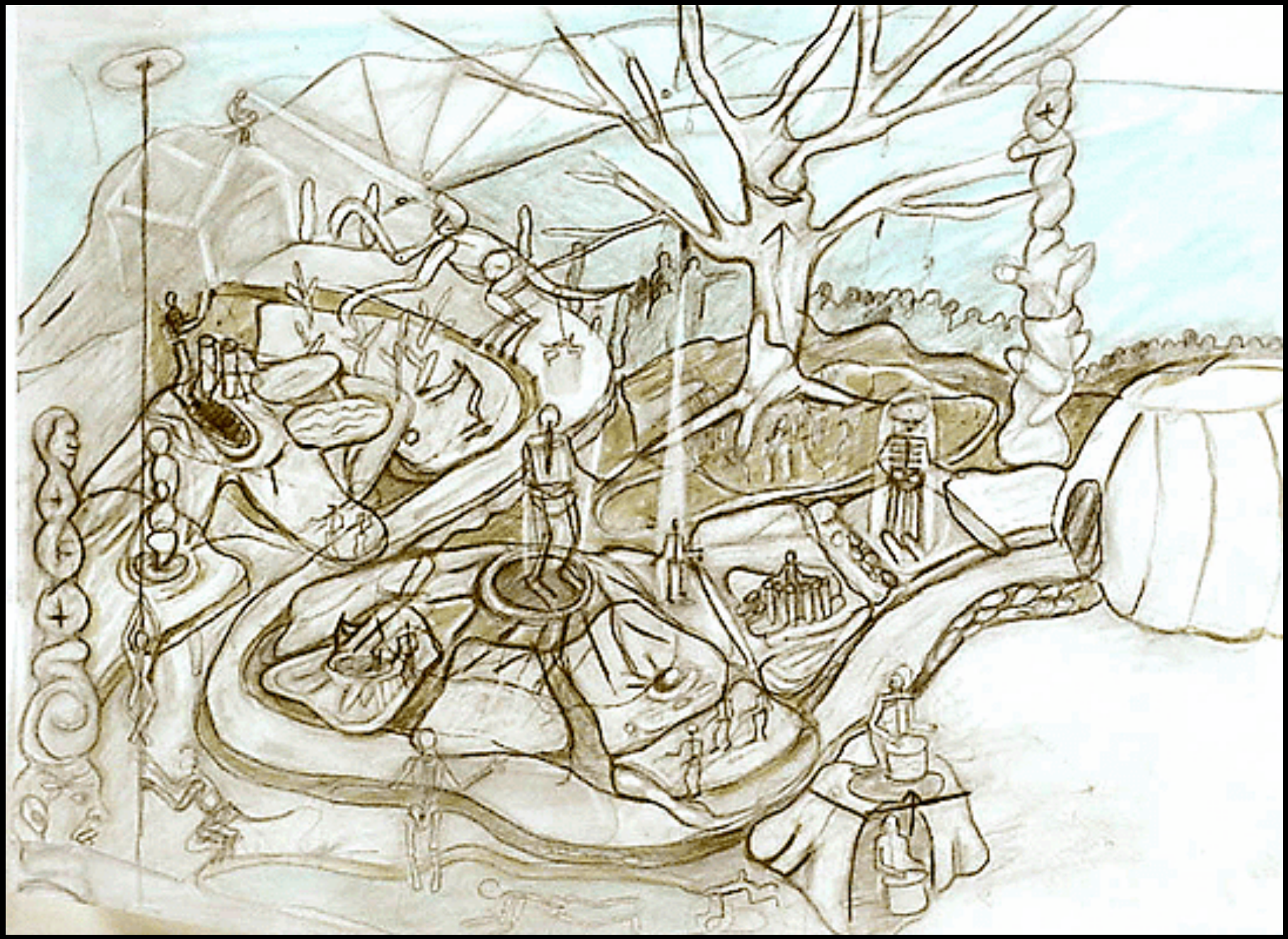
Kenneth Rinaldo, Autopoiesis, 2004
http://www.youtube.com/watch?v=qLYvF83Qrrc&playnext=1&list=PLB91A51EC459449E4&feature=results_main

Autopoiesis (from Greek- *(auto-)*, meaning "self", and *(poiesis)*, meaning "creation, production") literally means "self-creation." The term was introduced in 1972 by Chilean biologists Humberto Maturana and Francisco Varela:

An autopoietic machine is a machine organized (defined as a unity) as a network of processes of production (transformation and destruction) of components which: (i) through their interactions and transformations continuously regenerate and realize the network of processes (relations) that produced them; and (ii) constitute it (the machine) as a concrete unity in space in which they (the components) exist by specifying the topological domain of its realization as such a network.
[...] the space defined by an autopoietic system is self-contained and cannot be described by using dimensions that define another space. When we refer to our interactions with a concrete autopoietic system, however, we project this system on the space of our manipulations and make a description of this projection.

Chico MacMurtrie, The Amorphic Landscape, 2004

A portion of *The Amorphic Landscape*. Visible (from left to right) are the *Tree* with the drumming *Mulabundas*, *Geck* (hanging from the *Tree* branch), the xylophonic *House* and *Rude Boy* (in the background), *Electro Drummer*, *Landscape Mountains*, the *Rope Climber*, *Feisty Children* (in the aperture), and *Transparent Body*.



http://amorphicrobotworks.org/works/floatingtree/index.htm

Phillip Beesley, Hylozoic Soil, 2007-8

http://www.youtube.com/watch?v=dzWWdFxG7gQ