

# **Self-organization as a concept in art**

Arina Mozzherikova, 2018

Organization?

Self-organization?

## **Organization**

Example → a group of workers.

Each worker acts in a well defined way on given external orders, by the boss. It is understood that the thus regulated behavior results in a joint action to produce some product.

## Self-organization

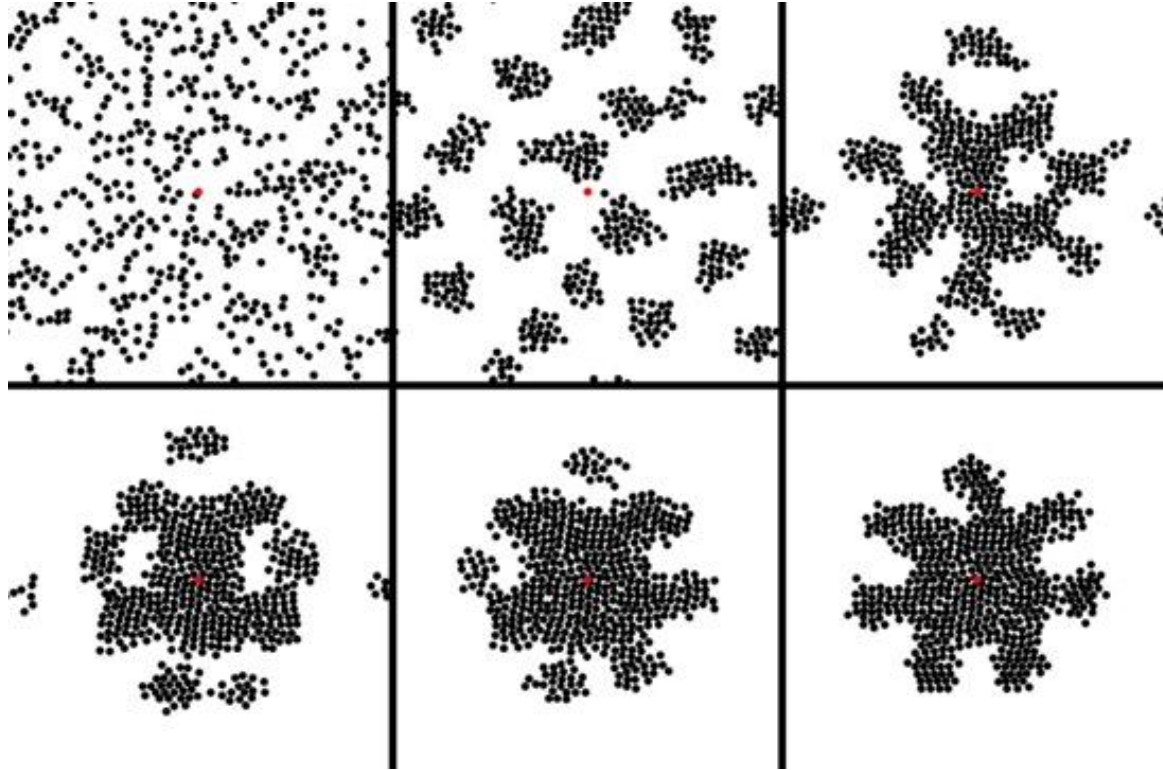
The process as being self-organized if there are no external orders given, but the workers work together by some kind of mutual understanding, each one doing his job so as to produce a product.



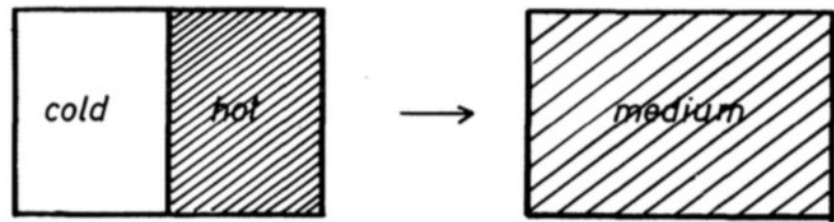




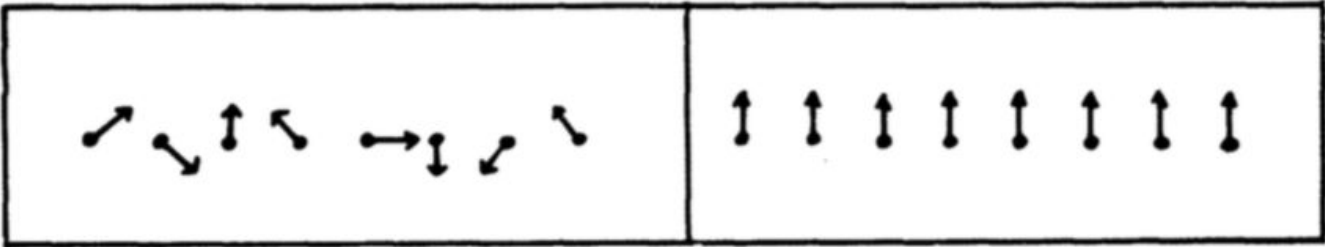
## How self-organization works?



# Phase transition / Order and disorder

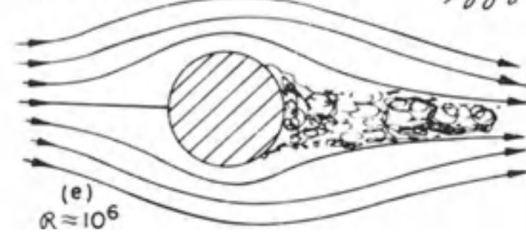
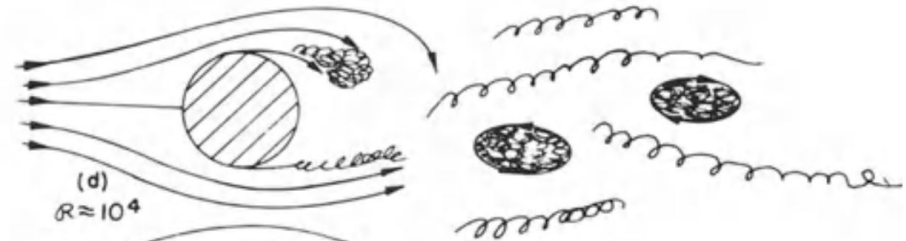
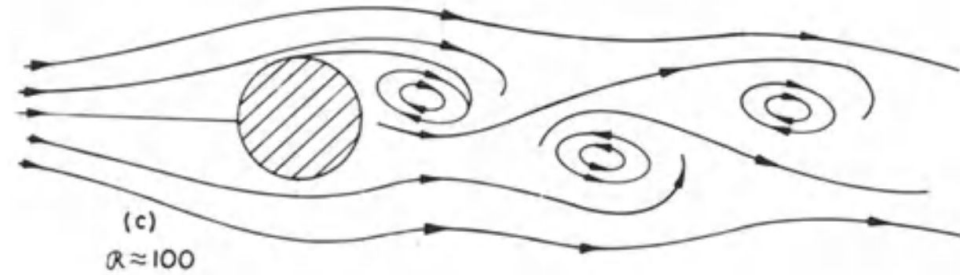
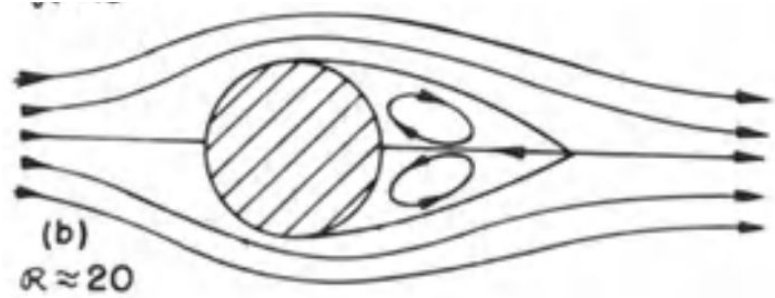
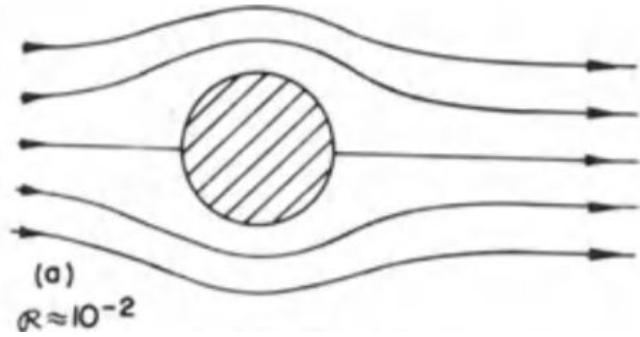


Phase transition / Ferromagnets





## Phase transition \ Fluid dynamics



## Phase transition \ Clouds





## Phase transition \ Slime mold



# Cybernetics

Cybernetics, is a “theory of machines”.

It treats, not things but ways of behaving.

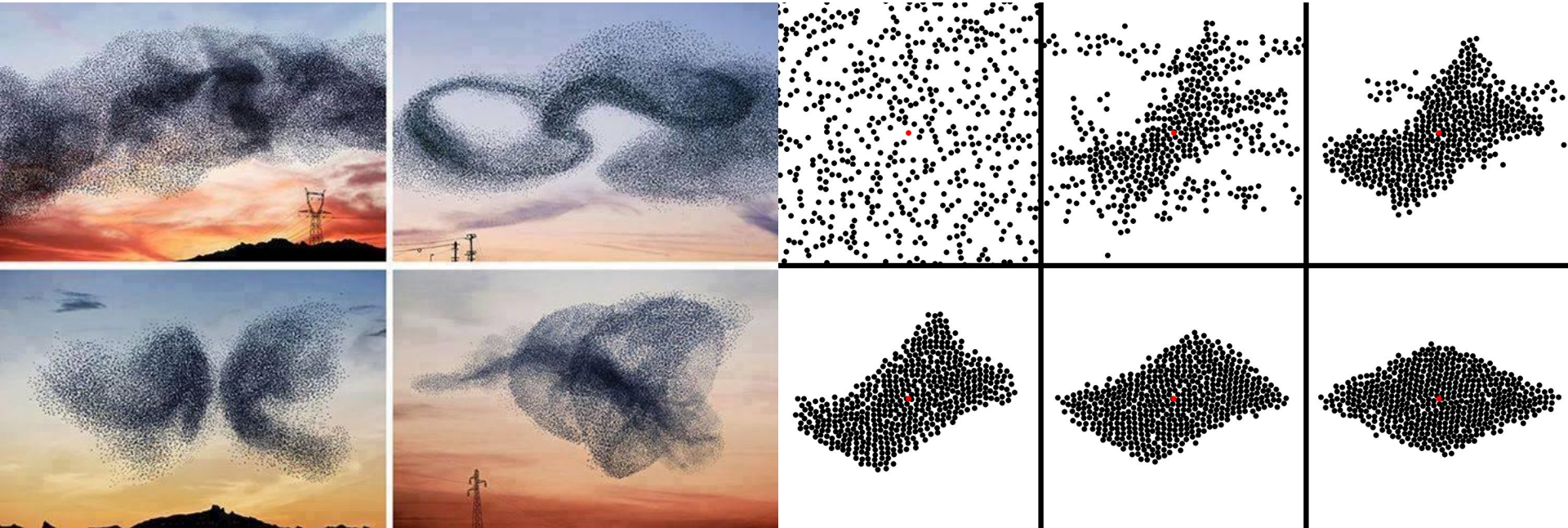
It does not ask “*what is this thing?*” but “*what does it do?*”

**Cybernetics is likely to open a great number of interesting and suggestive parallels between machine and brain and society.**

# The complex systems

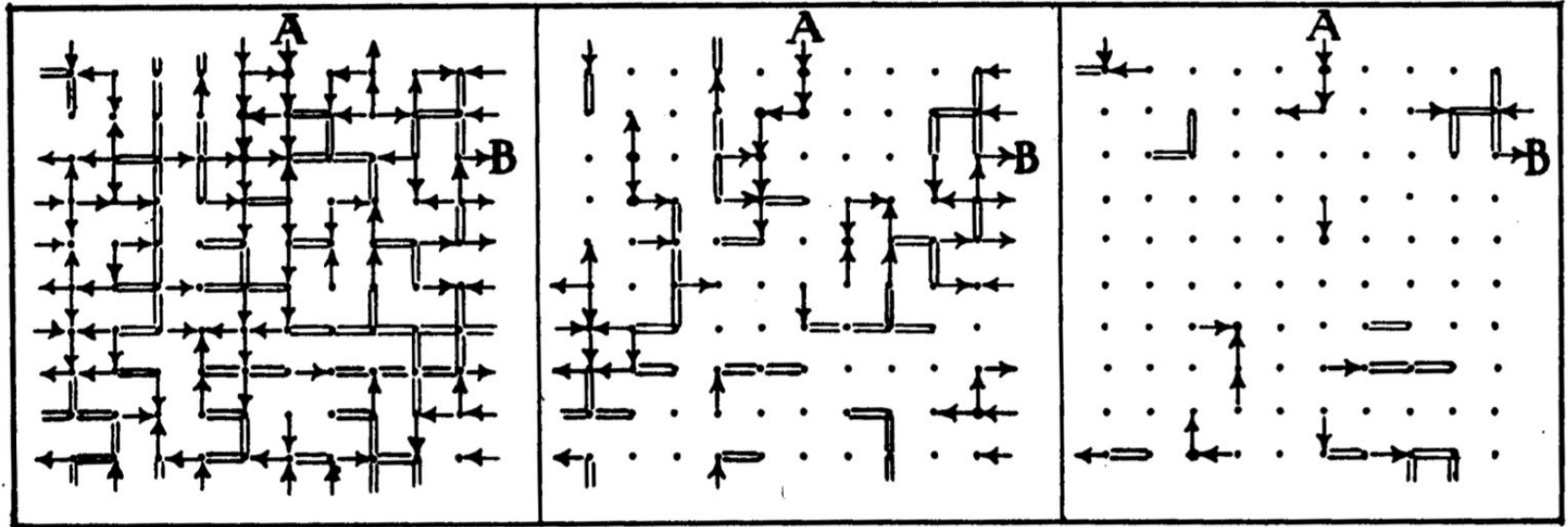
Cybernetics offers a method for the scientific treatment of the system in which complexity is outstanding and too important to be ignored.

Such systems are, as we well know, only too common in the biological world.





## The Law of Requisite Variety / Ross Ashby



**So what?**

**Art reveals the discrete nature of science, exposing fundamental representations, in the search for unconventional aesthetic processes**



## **Gints Gabrāns**

["Out of nowhere" 2014](#)

["De nulle part" 2015](#)

["6 Heads" 2015](#)

**Andreas Muxel / Martin Hesselmeier**

[Connect / Feedback-driven sculpture / 2008](#)

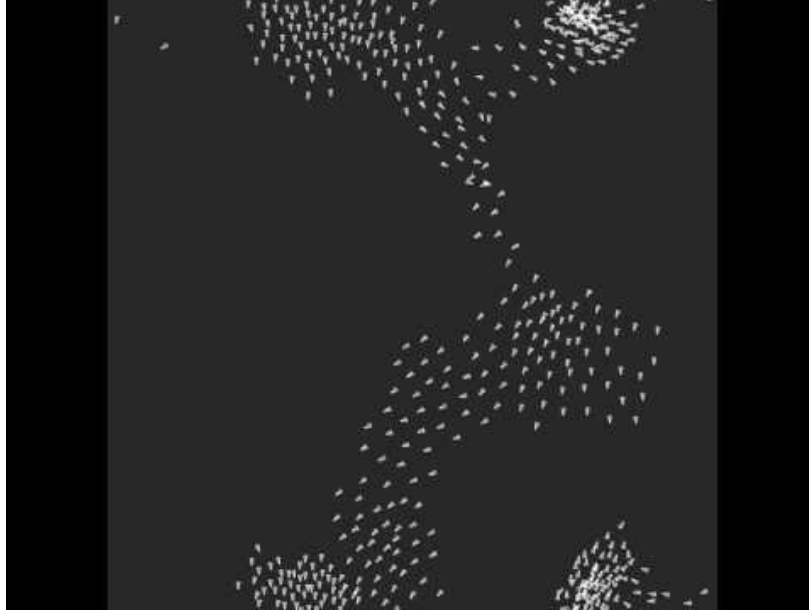
[Capacitive body / reactive light installation / 2008](#)

[Particle Flow / Kinetic motion study / 2016](#)

## Craig Reyong “Boids”

An artificial life program which simulates flocking behavior of birds;

### Boids



<https://www.youtube.com/watch?v=9gTjJxgBH5U>

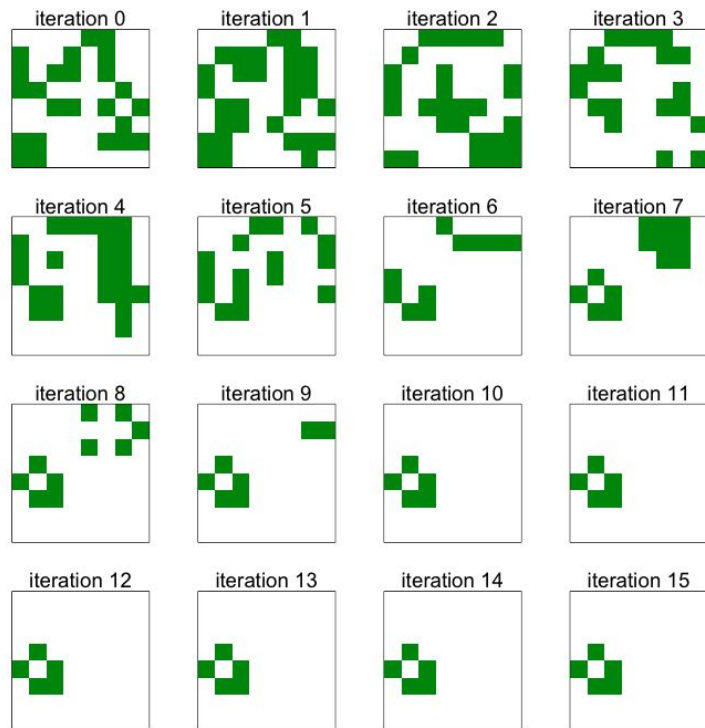
# John Horton Conway “Game of life”

Cellular automaton;

Zero-player game, meaning that its evolution is determined by its initial state, requiring no further input;

<http://www.conwaylife.com/>

<http://web.stanford.edu/~cdebs/GameOfLife/>



**Ken Rinaldo**

[The Flock](#)

[Autopoiesis](#)

## **Conclusions**

Learning is requisite of survival...

