Some Notes on the "Generative Art" *

*Also called "Algorithmic Art"

“On first appraisal, the question ‘What is generative art?’ may seem simple.
But, as is the nature of all things generative, even this definition has an emergent complexity. “

-Matt Pearson

From his 2011 book:
Generative Art -A practical guide using Processing

One often cited definition:

"Generative art refers to any art practice where the artist uses a system, such as a set of natural language rules, a computer program, a machine, or other procedural invention, which is set into motion with some degree of autonomy contributing to or resulting in a completed work of art."

-Prof. Philip Galanter, Texas A&M Univ.

From: "What Is Generative Art? Complexity Theory as a Context for Art Theory"

(www.philipgalanter.com/downloads/ga2003_paper.pdf)

A rule-based system that generates it's state at each new time-step is different from either stochastic or deterministic ones.

Stochastic is synonymous with "random." The word is of Greek origin and means "pertaining to chance". It is used to indicate that a particular subject is seen from a point of view of randomness. Stochastic is often used as counterpart of the word "deterministic," which means that random phenomena are not involved. Therefore, stochastic models are based on random trials, while deterministic models always produce the same output for a given starting condition.

From: http://mathworld.wolfram.com/Stochastic.html

ELIZA is an early natural language processing computer program developed in 1966 at the MIT Artificial Intelligence Laboratory by *Joseph Weizenbaum.* It was created to demonstrated the superficiality of communication between man and machine, simulating conversation by using a **random** 'pattern matching' and substitution methodology that gave users an illusion of understanding on the part of the program. The most famous version, *DOCTOR,* simulated a Rogerian psychotherapist and used rules, dictated in the script, to respond with non-directional questions to user inputs. As such, ELIZA was one of the first chatterbots, but was also regarded as one of the first programs capable of passing the Turing Test.

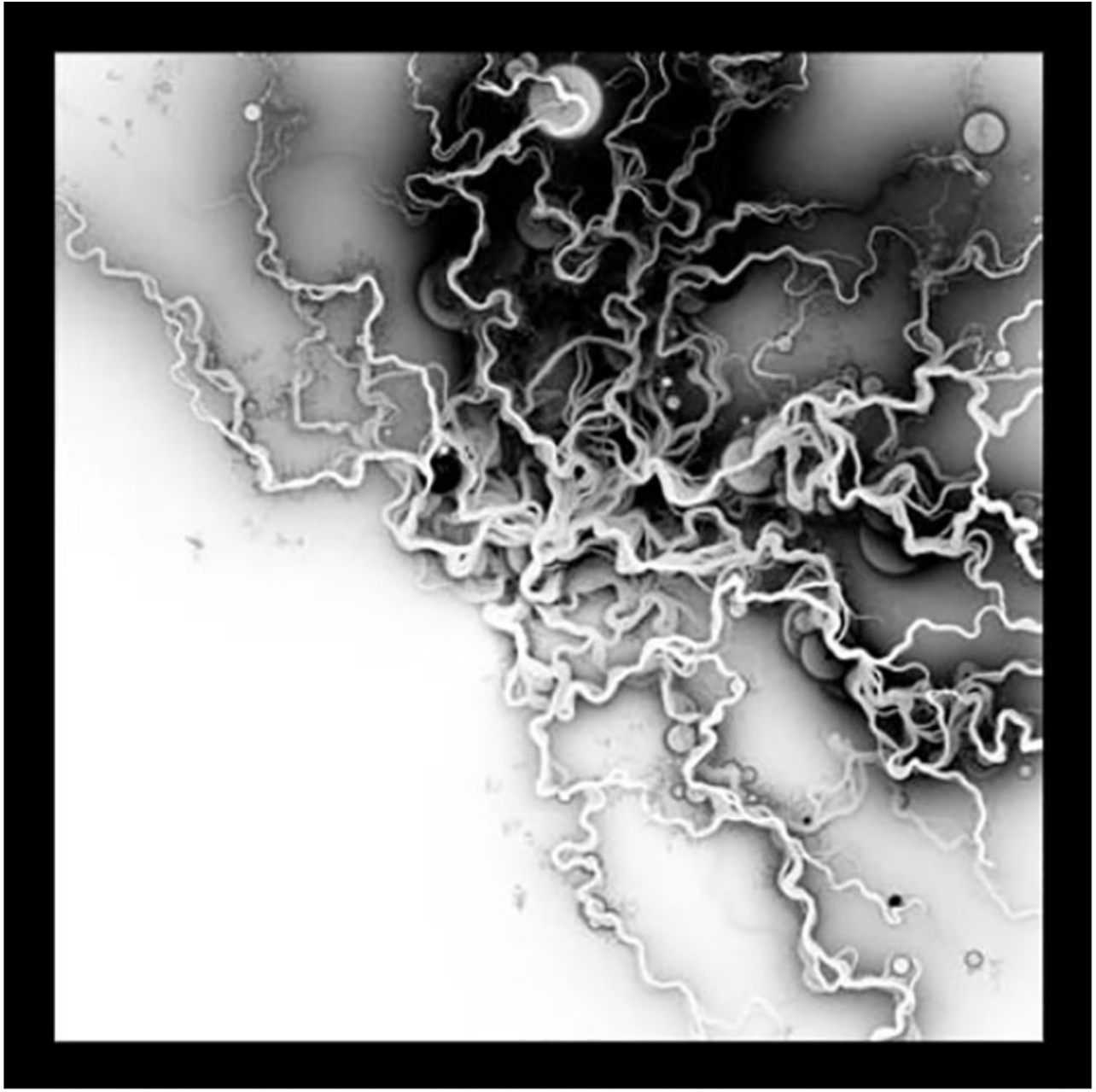
Emergence and self-organization mean that no external agent is sculpting the organism: it sculpts itself.

e.g. things like flocks of birds, ant bridges and Internet trends.

For highly read-able explanations of non-linear dynamic systems and the scientific field of “complexity” see the book: *Complexity* by Dr. Melanie Mitchell, a professor at Portland State University in Oregon.

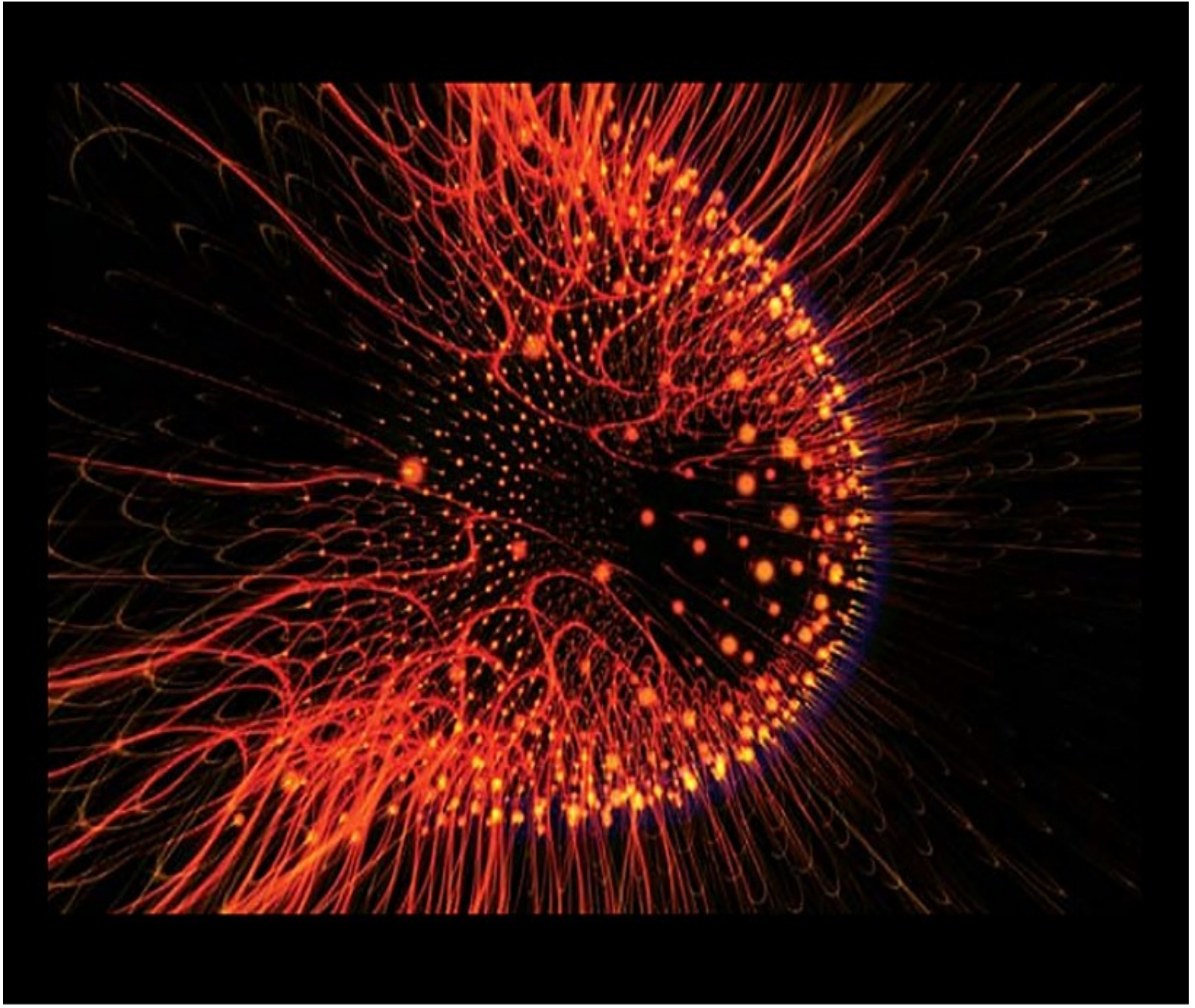
She also teaches online coursework in this area.

Melanie Mitchell

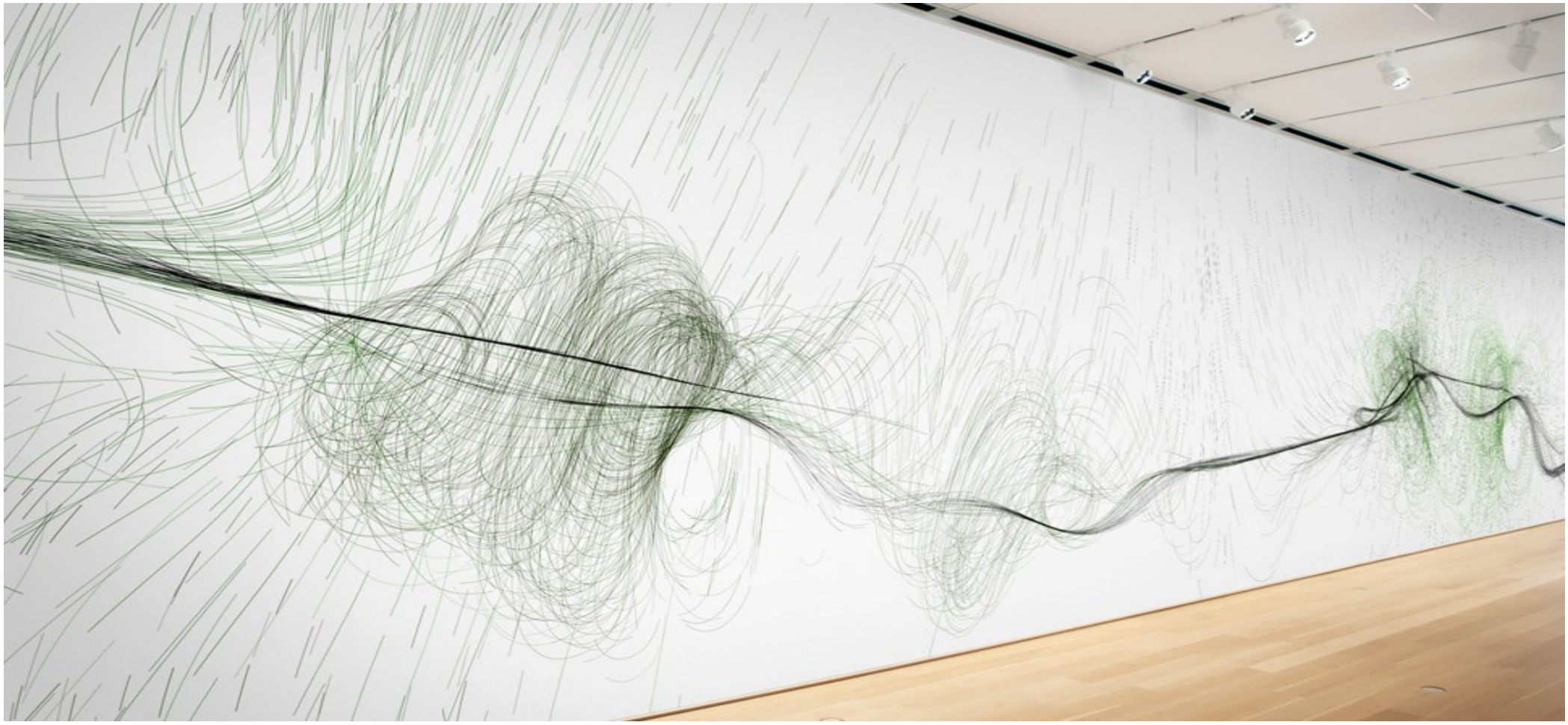


Magnetic Ink by Robert Hodgin (2007). This work was created using a flocking algorithm, each agent leaving a mist of ink.

See www.flight404.com/blog/?p=86 for further explanation.

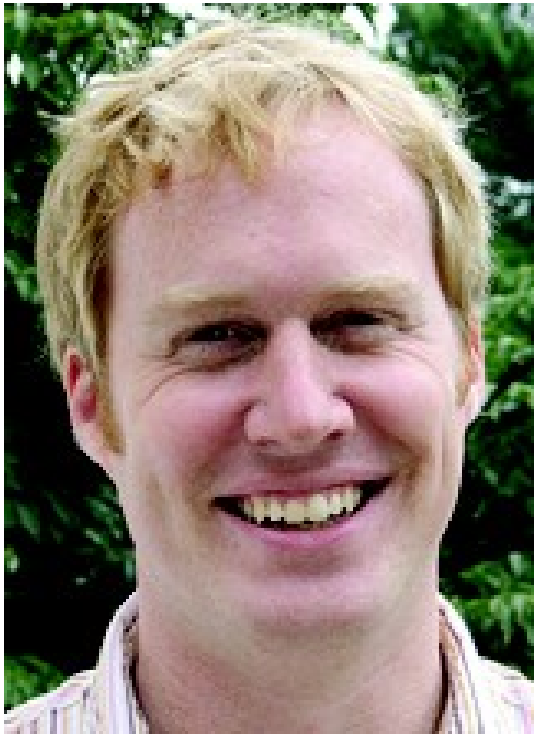


Jelly (Magnetosphere) by Robert Hodgin (2007). Most of Robert's early work, including this image, was created using Processing.

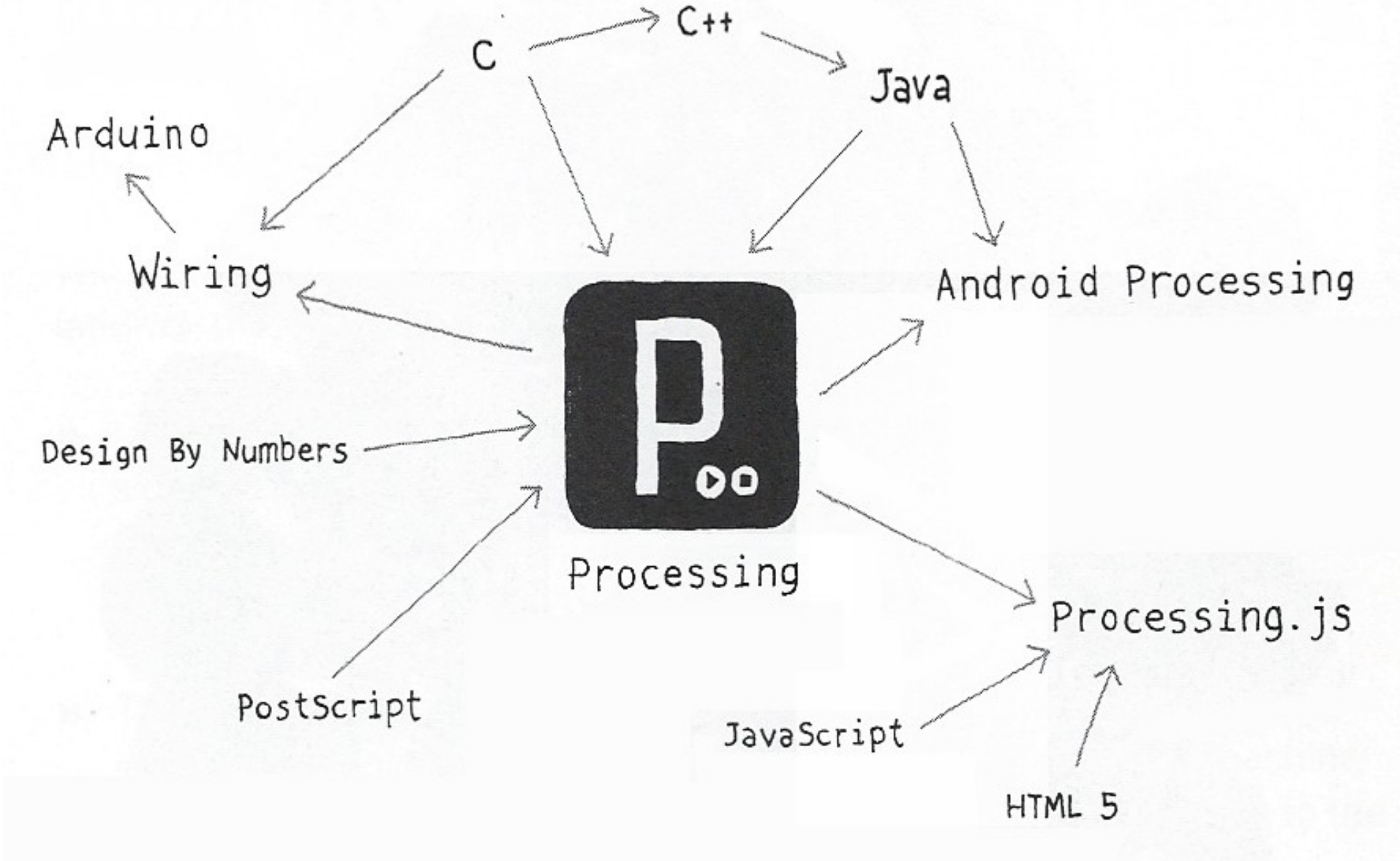


Casey Reas: *Installation at the Art Institute of Chicago*

Processing.org



Project of Casey Reas and Ben Fry



Processing comes from a large family of related languages.

(Graphic from *Getting Started with Processing* by Casey Reas and Ben Fry.)

Java: Creation of a simple window

```
import javax.swing.*;

import java.awt.*;

import java.awt.event.*;

public class helloWorld extends JFrame {
   helloWorld(String title) {
       this.setSize(500,500);
       setTitle(title);
   }

   public static void main(String[] args) {
      helloWorld window = new helloWorld("");
      window.setVisible(true);

window.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
   }
}
```

Processing:

```
void setup() {
     Size(500,500);
  }
```