

Generative Art & Design

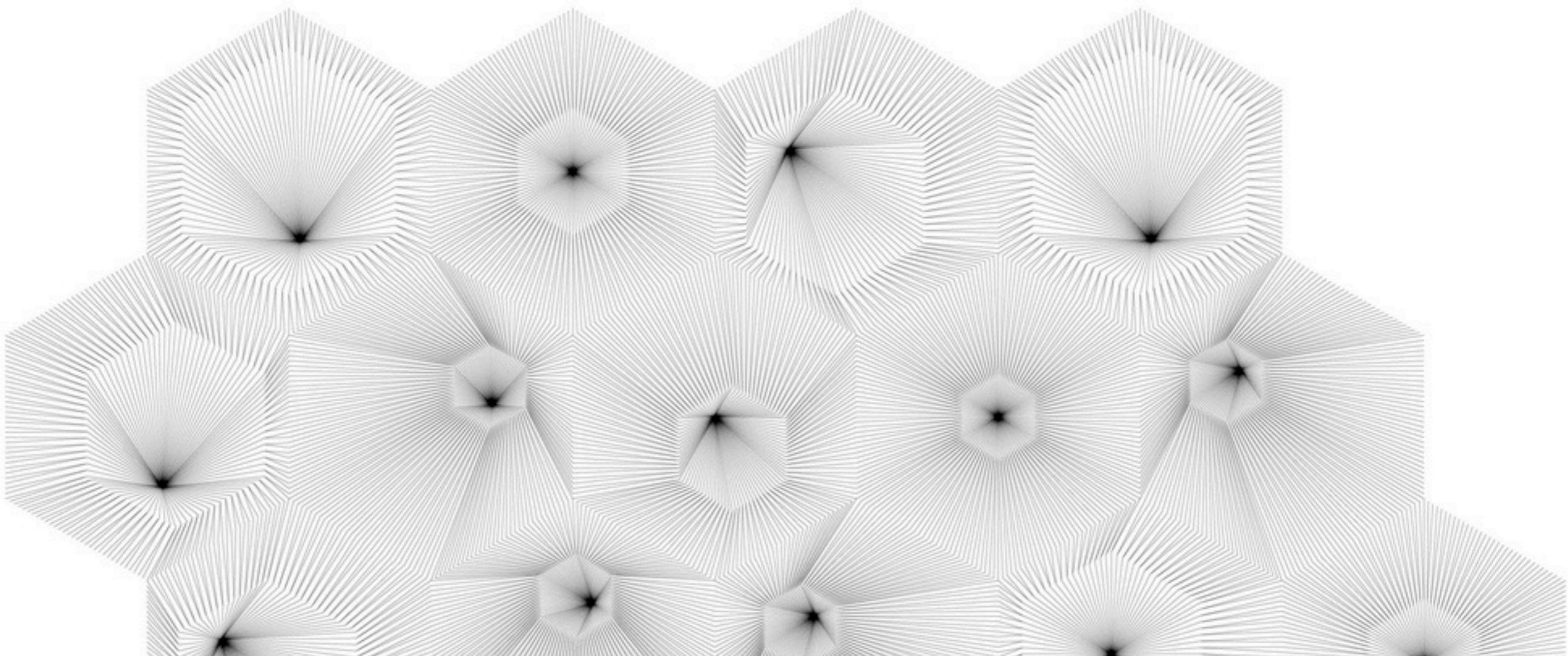


“Generative art refers to any art practice where the artist uses a system, such as a set of natural language rules, a computer program, a machine, or other procedural invention, which is set into motion with some degree of autonomy contributing to or resulting in a completed work of art.”

Usually involves:

- an autonomous system
- element of unpredictability

The artist herself is often surprised by the results.

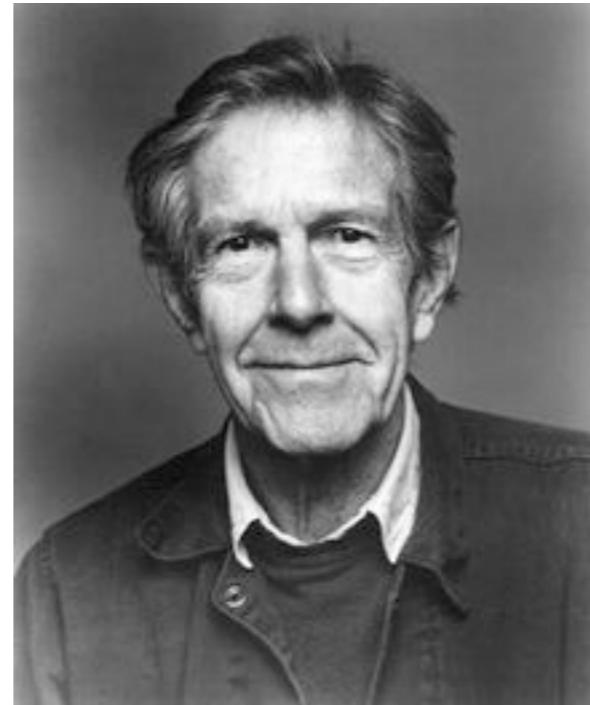


The art of chance



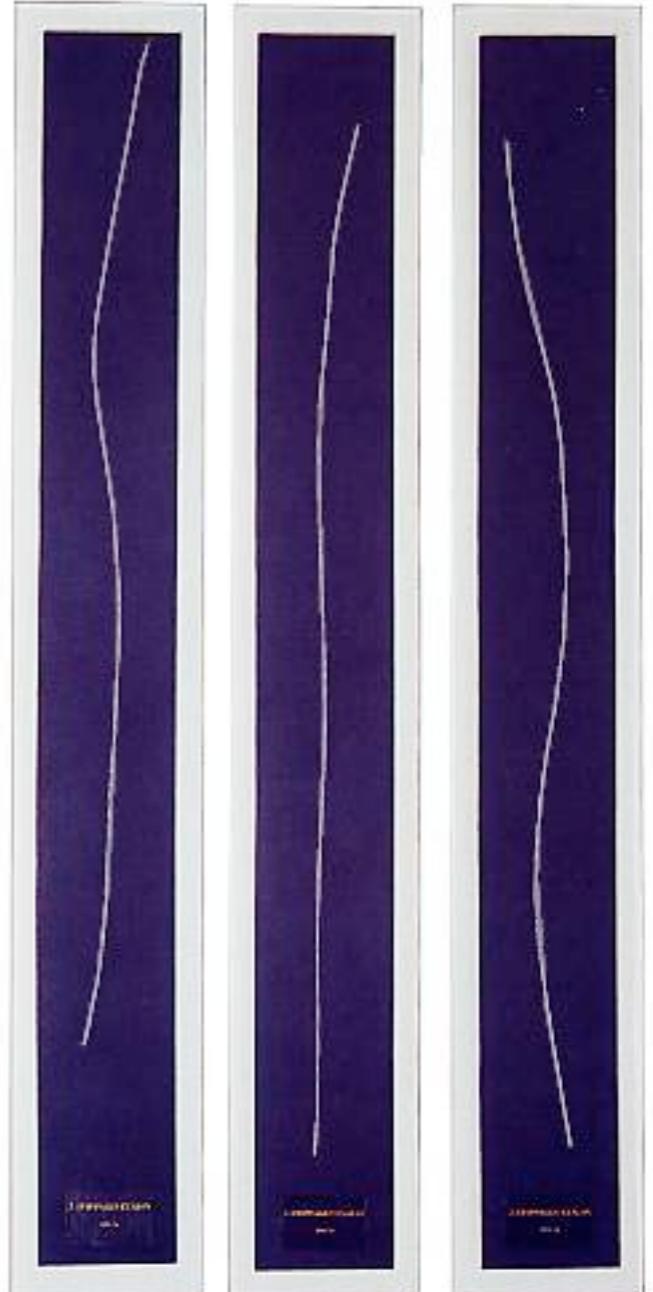
**Untitled (Collage with Squares
Arranged according to the
Laws of Chance)**

Jean (Hans) Arp



4: 33

John Cage



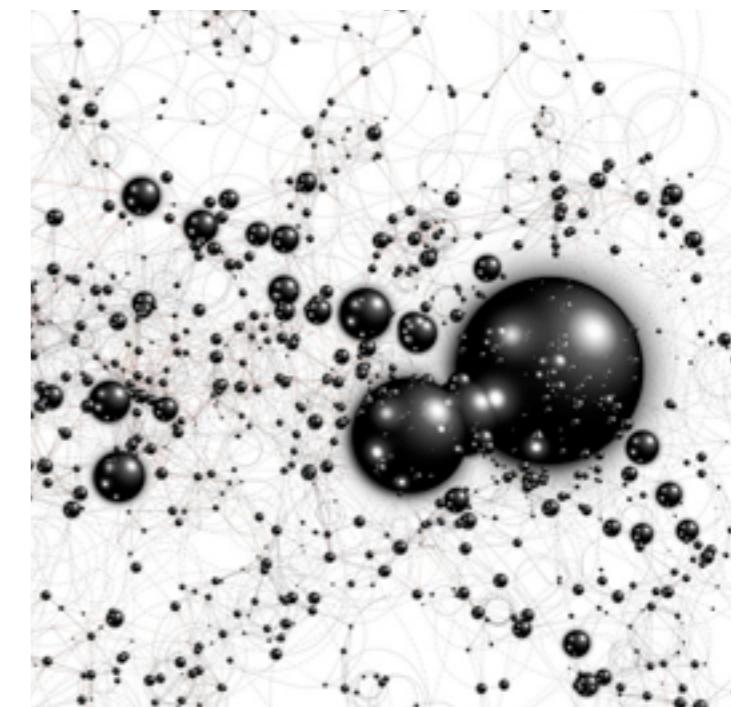
3 Stopages à l'Étalon
Marcel Duchamp



Casey Reas



Lia



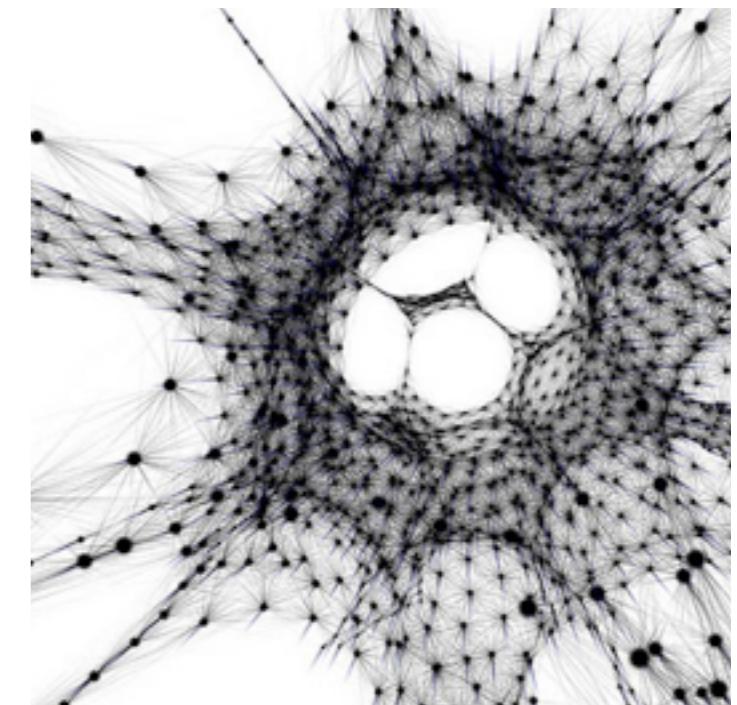
Jared Tarbell



Nervous System



Joshua Davis



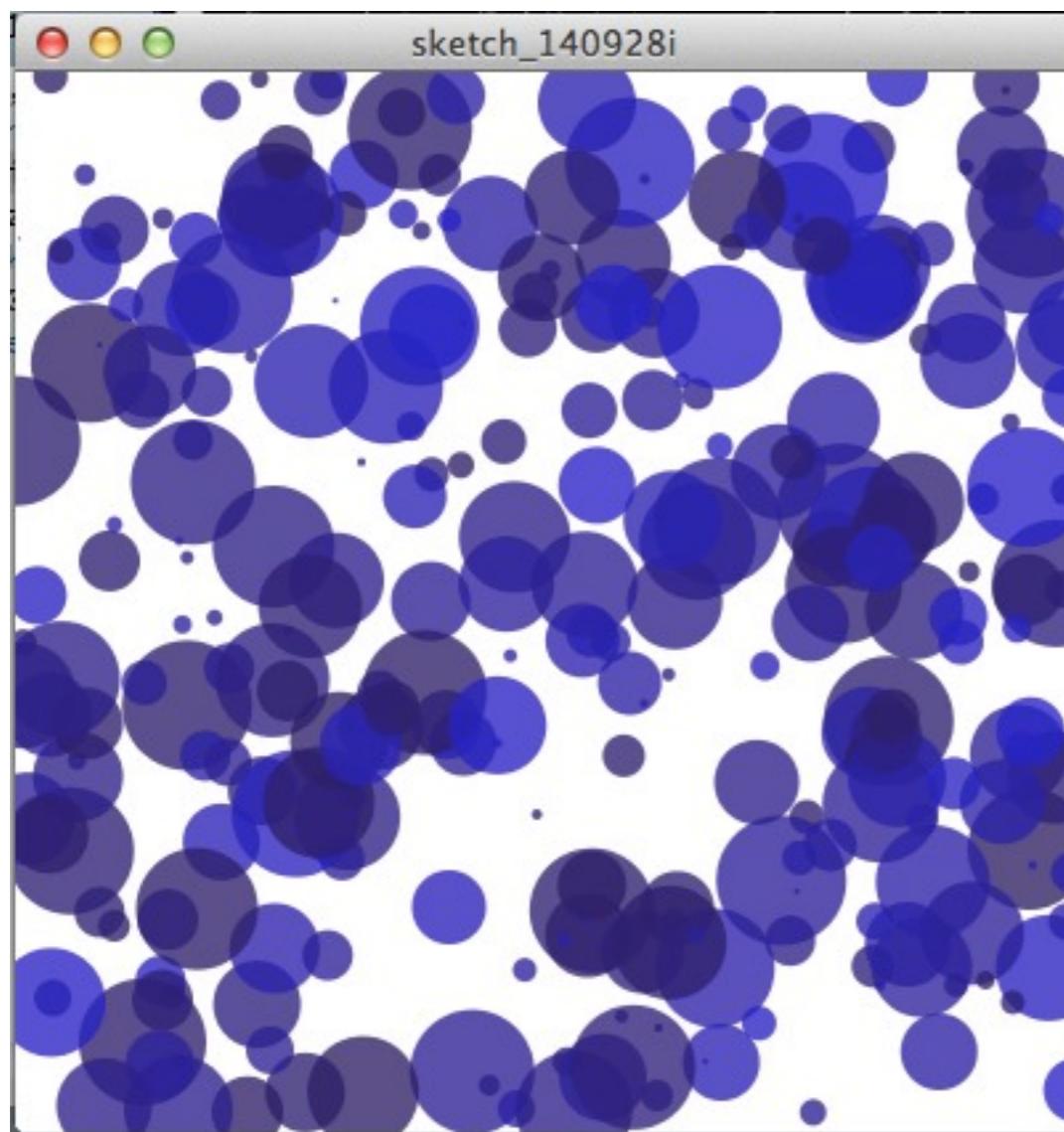
Robert Hodgin

Unpredictability



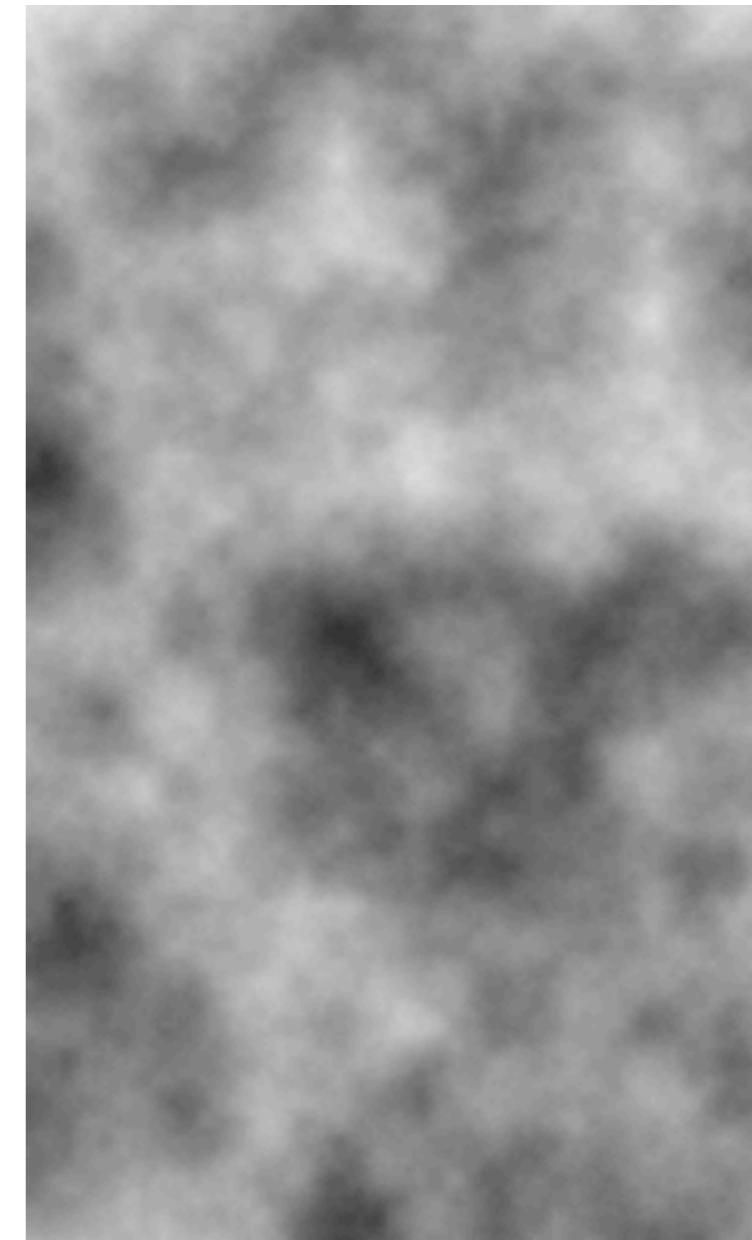
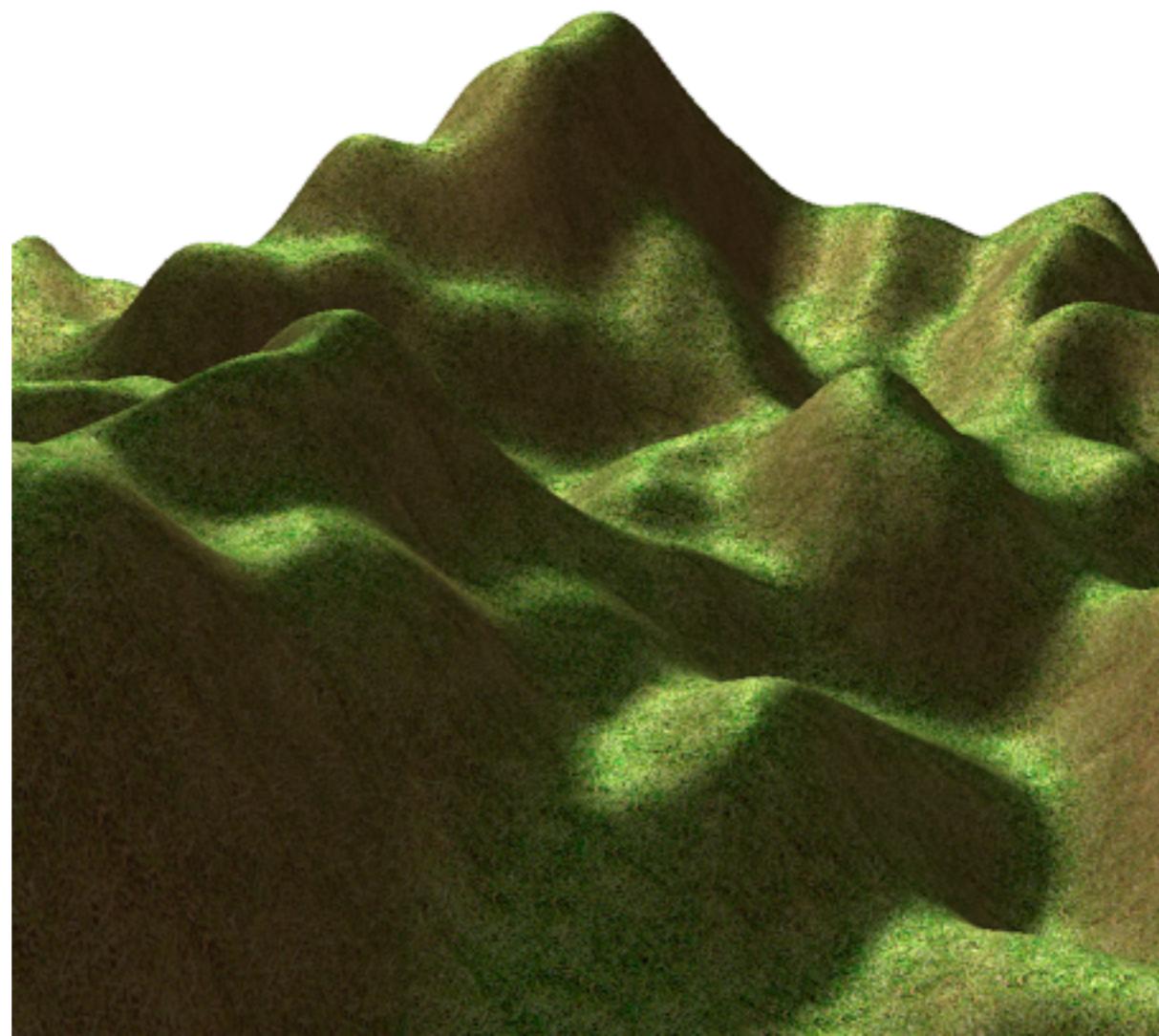
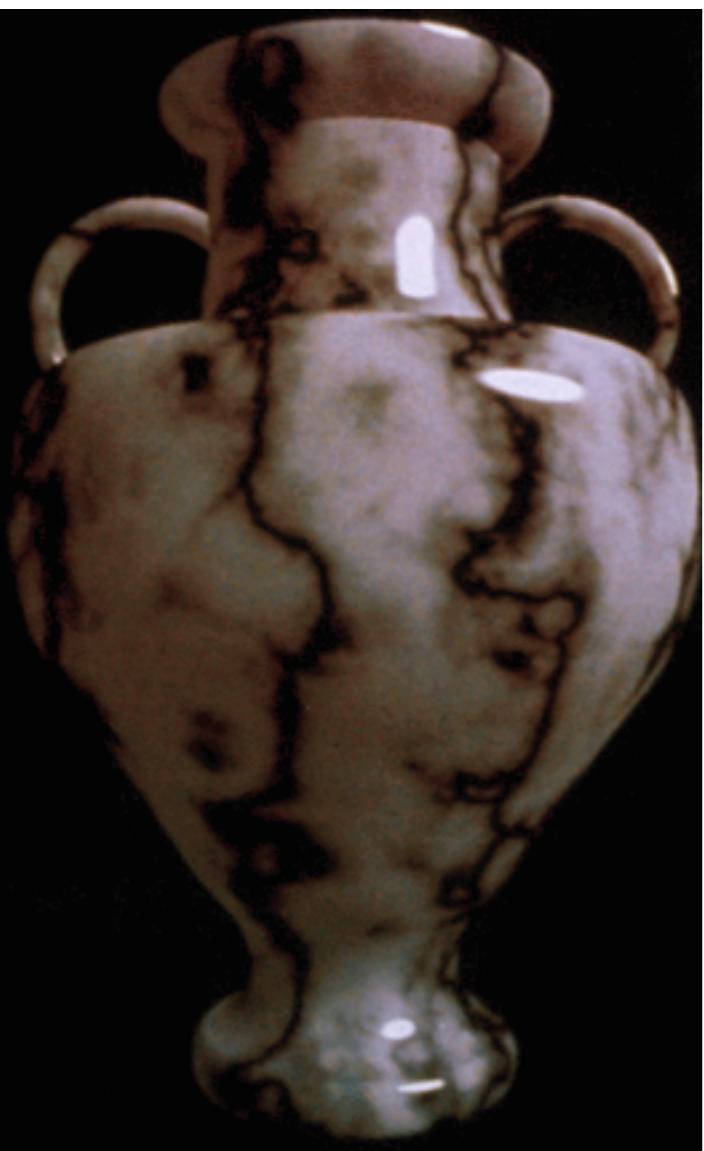
Random

- allows variability
- random() is actually psuedo-random
- useful in many cases when relationship between sequential values is unimportant



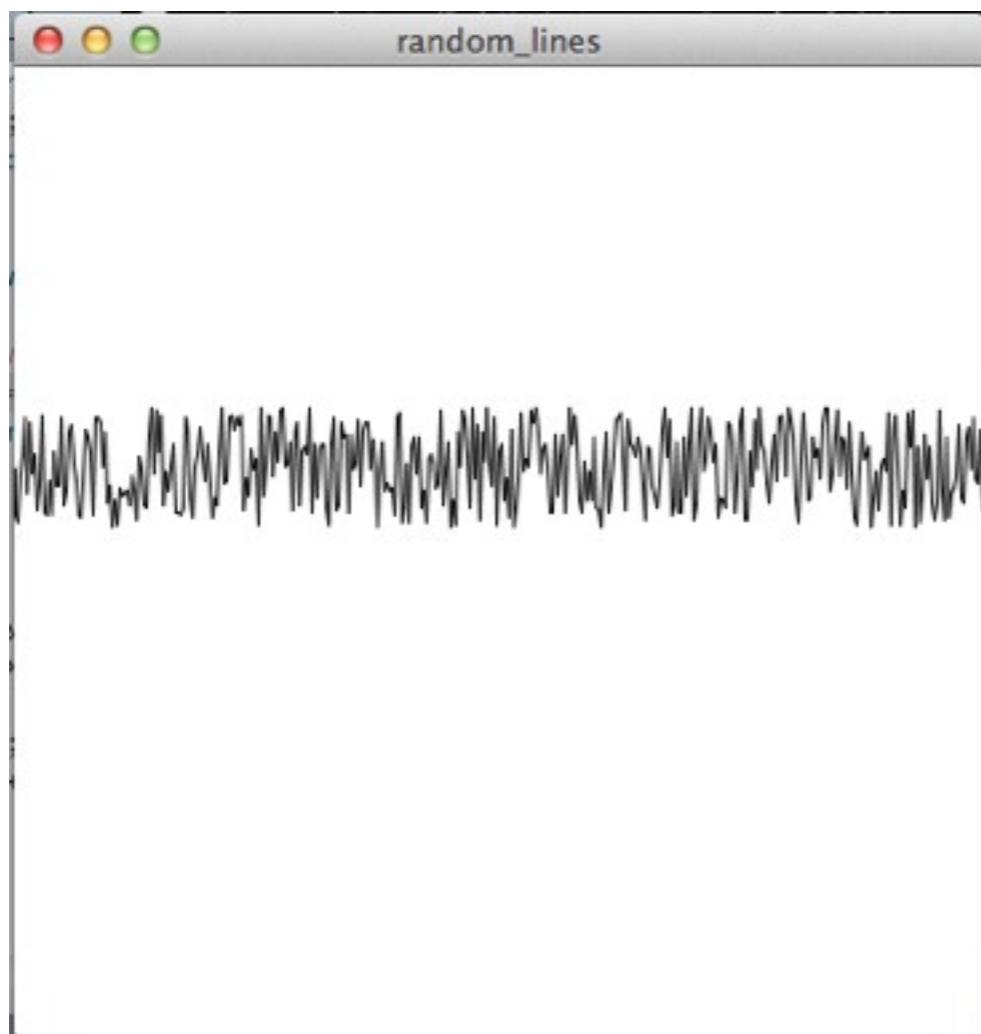
Perlin Noise

- a more “natural” randomness
- values have relationships
- invented by Ken Perlin for use in cinema special effects

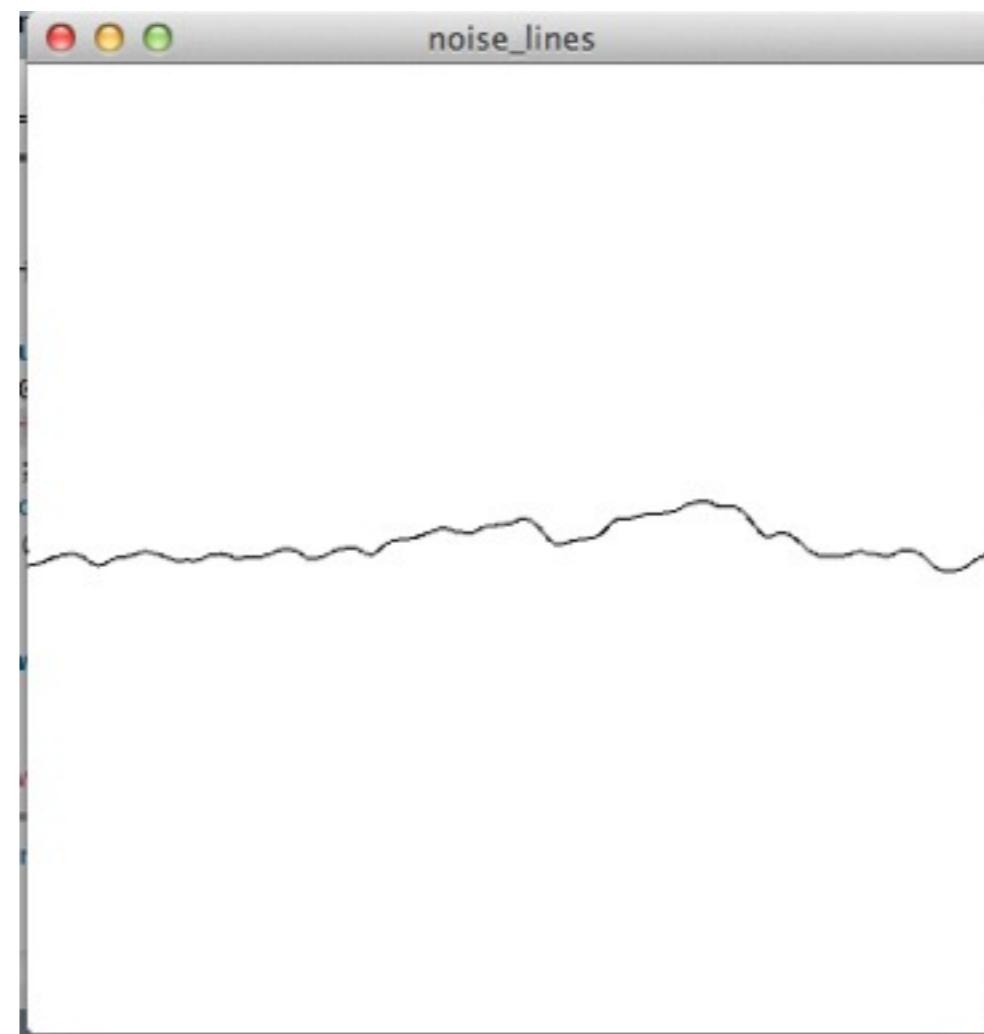


noise()

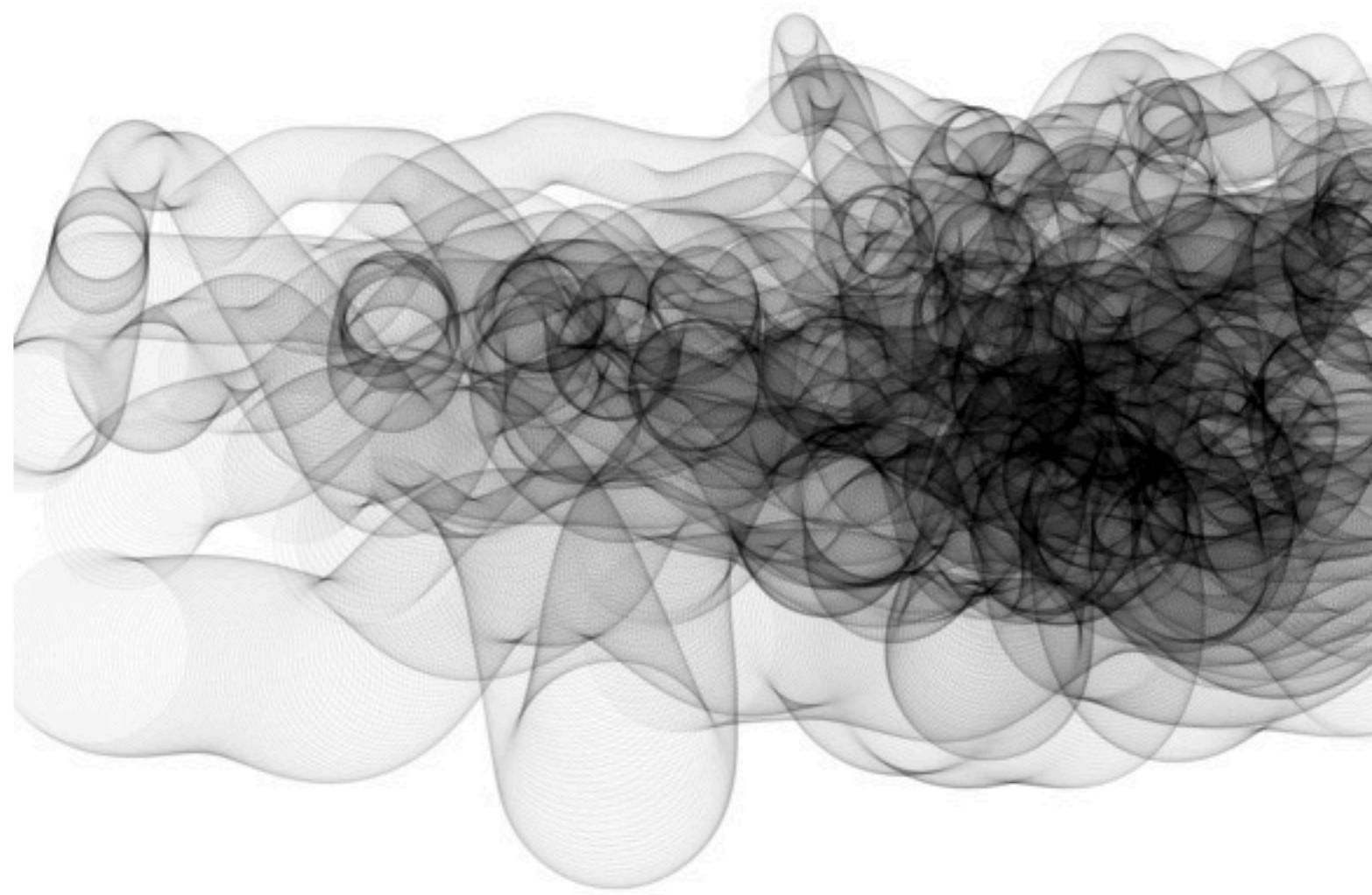
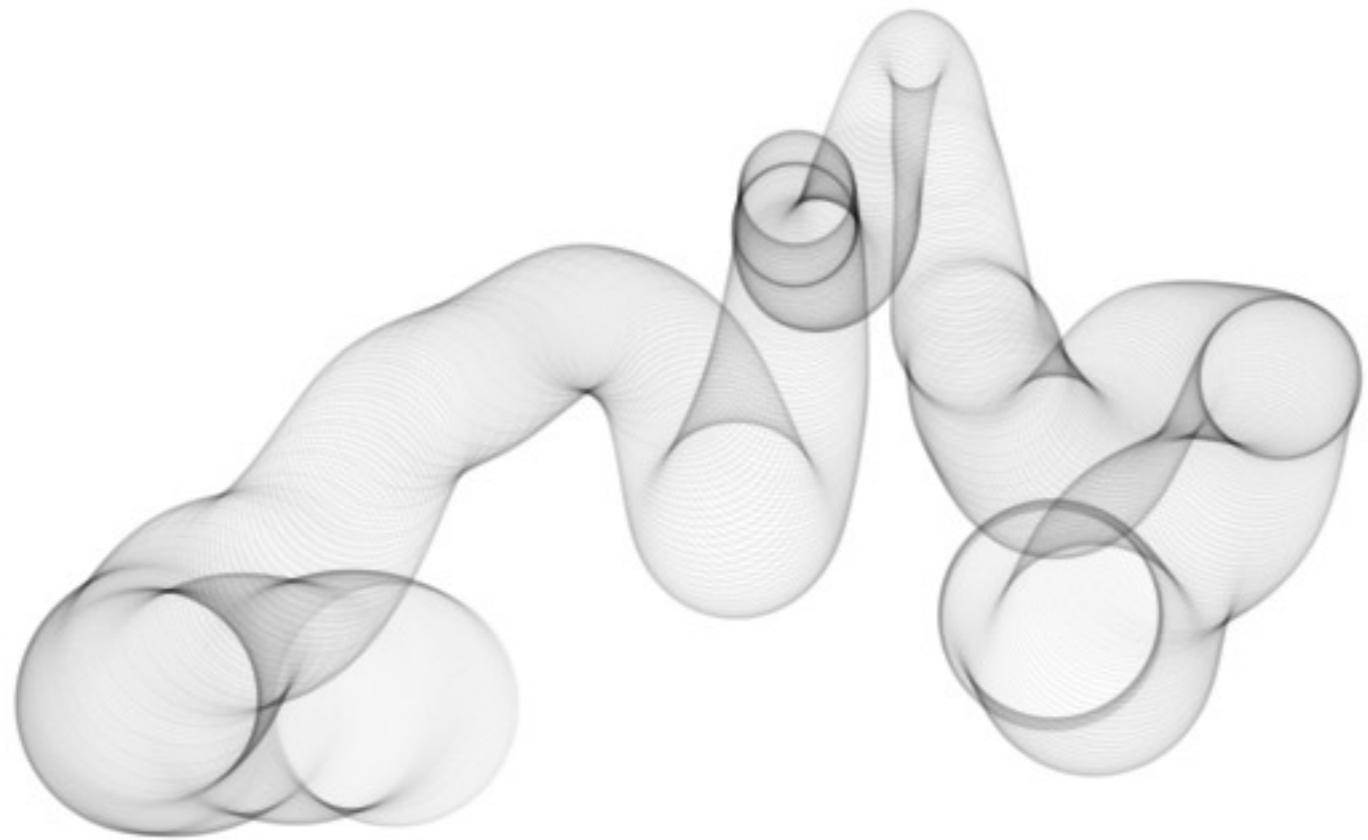
- returns value 0 to 1
- can be 1, 2, or 3 dimensional
- pass in values that increment by small amounts
(smaller - more smooth the transition from one value to next)



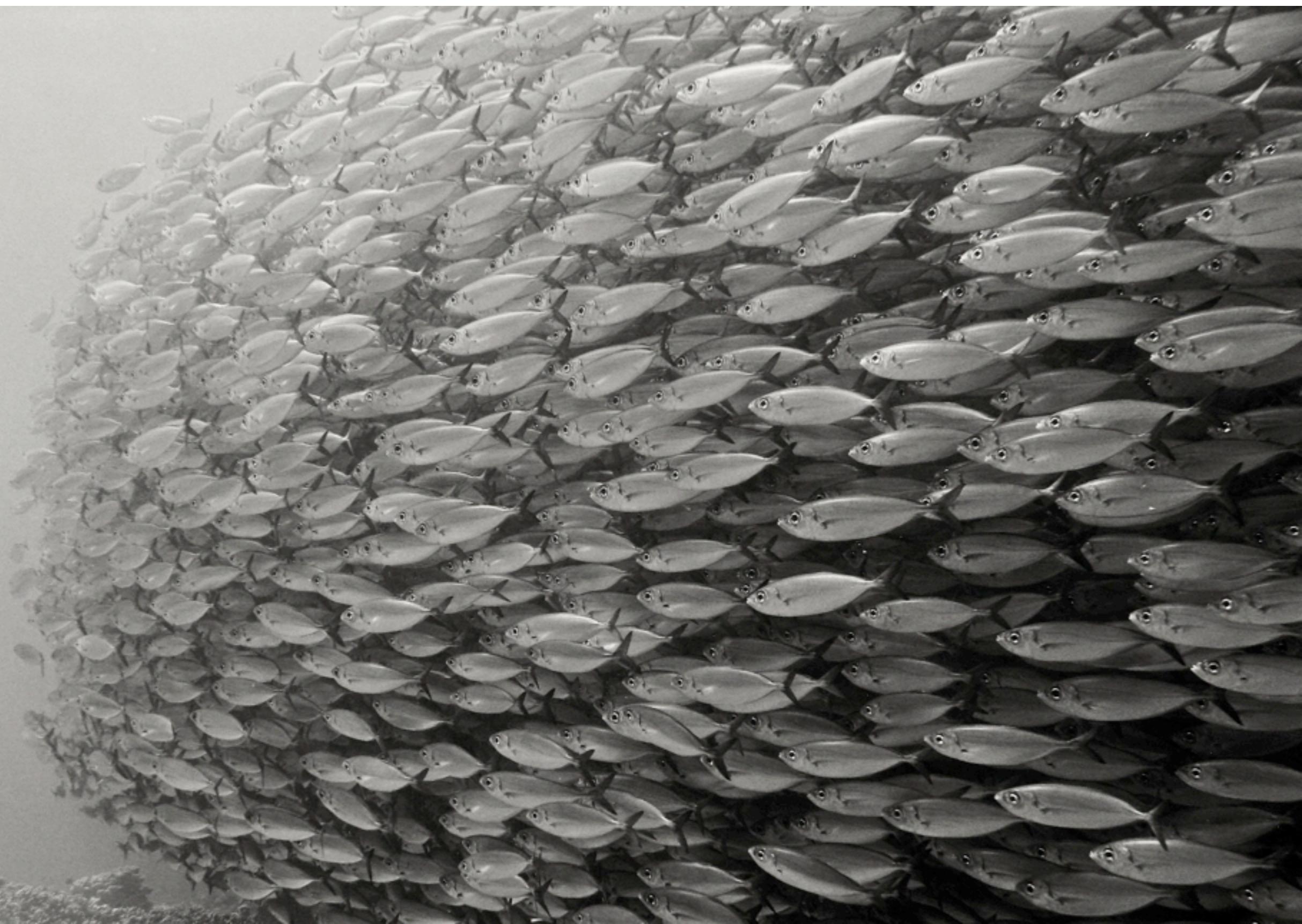
random



noise

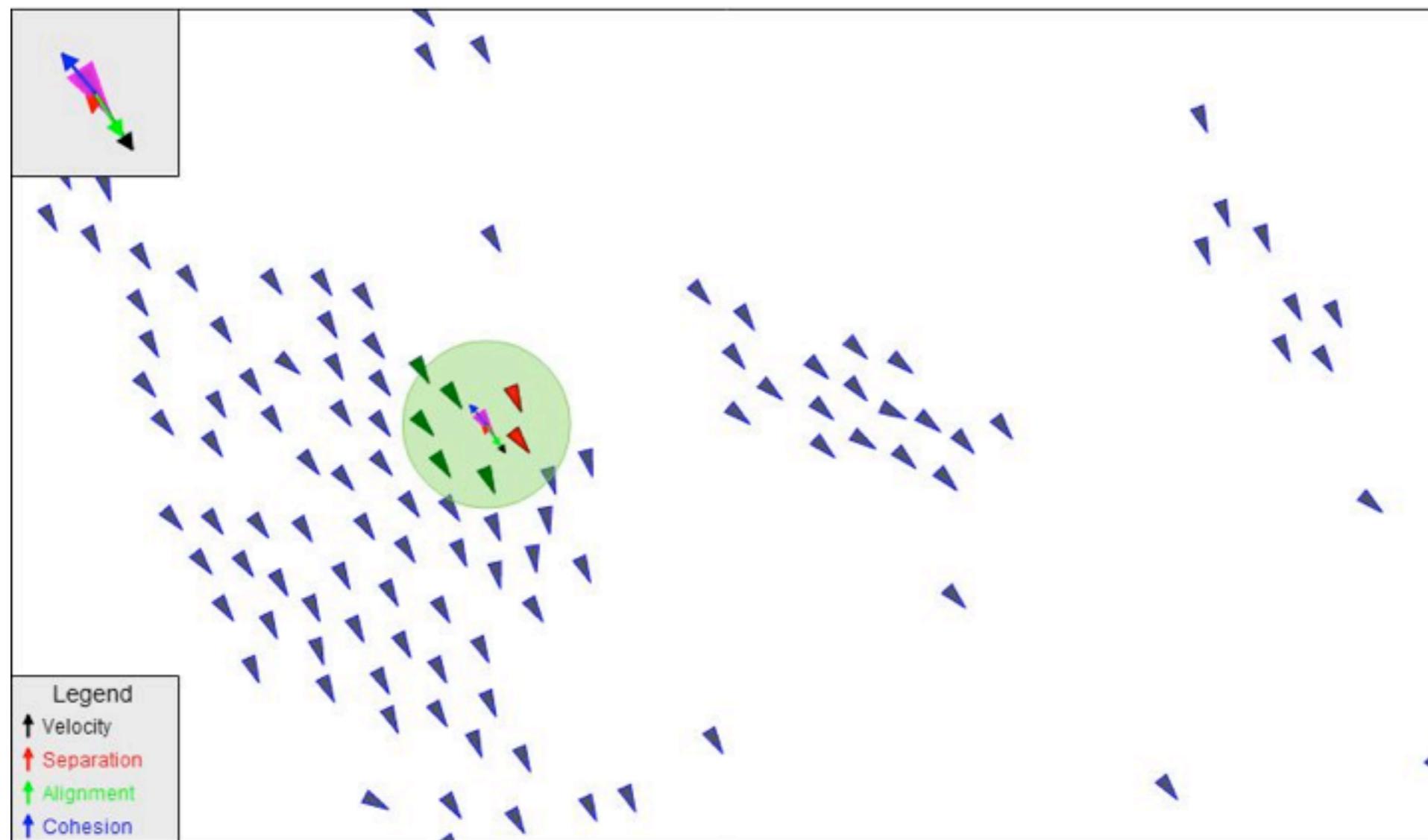


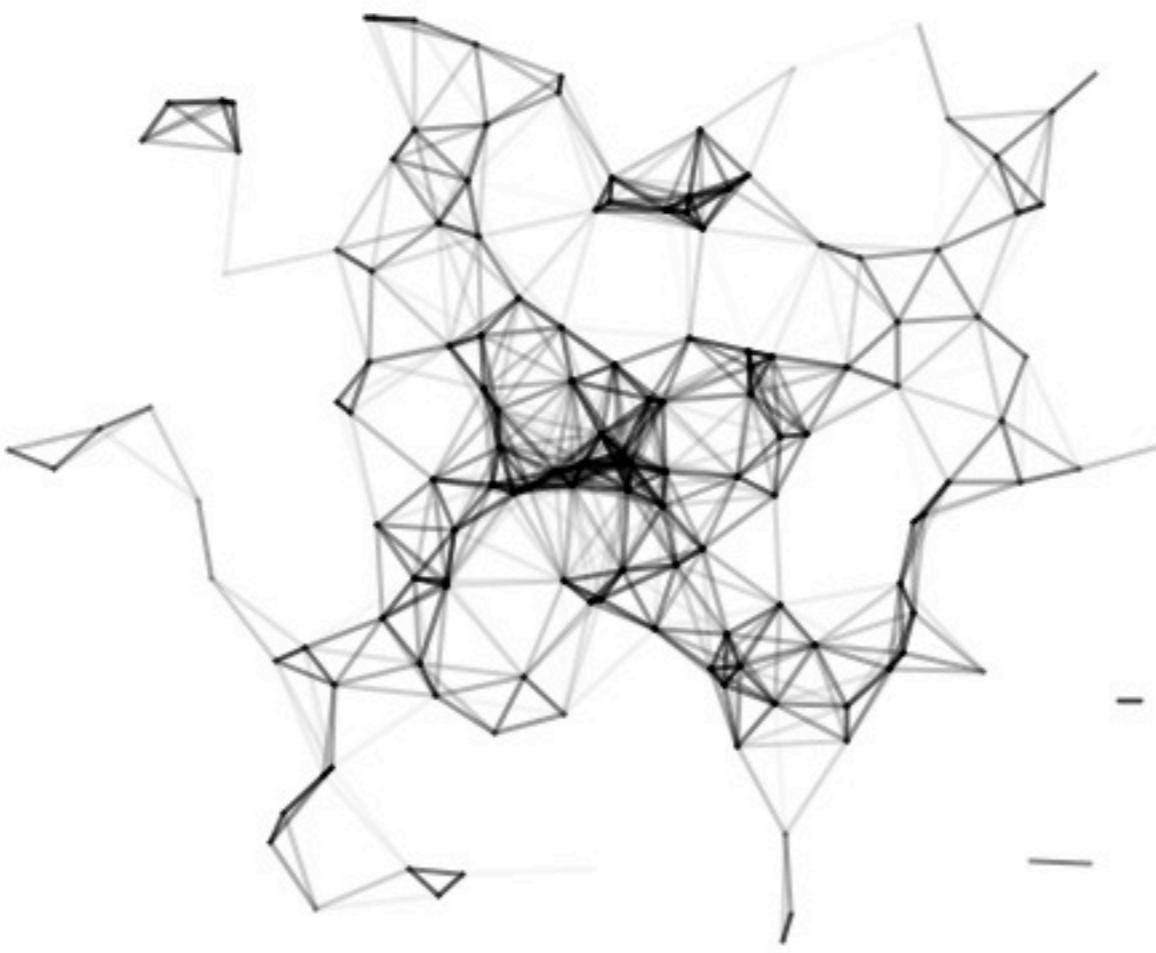
Emergence



Emergence

- related to ideas of complexity
- local or simple rules create greater complexity
- natural examples: flocking, ant colonies, schools of fish, crystals, hurricanes





- simple rule system where each element connects based on its proximity to others