

**GASATHJ**

*Artwork*

**The Regeneration of the Earth After Its Destruction by the Capitalist Powers**

**Angela Ferraiolo**

Sarah Lawrence College, New Genres & Interactive Art

[http:// littleumbrellas.net](http://littleumbrellas.net)

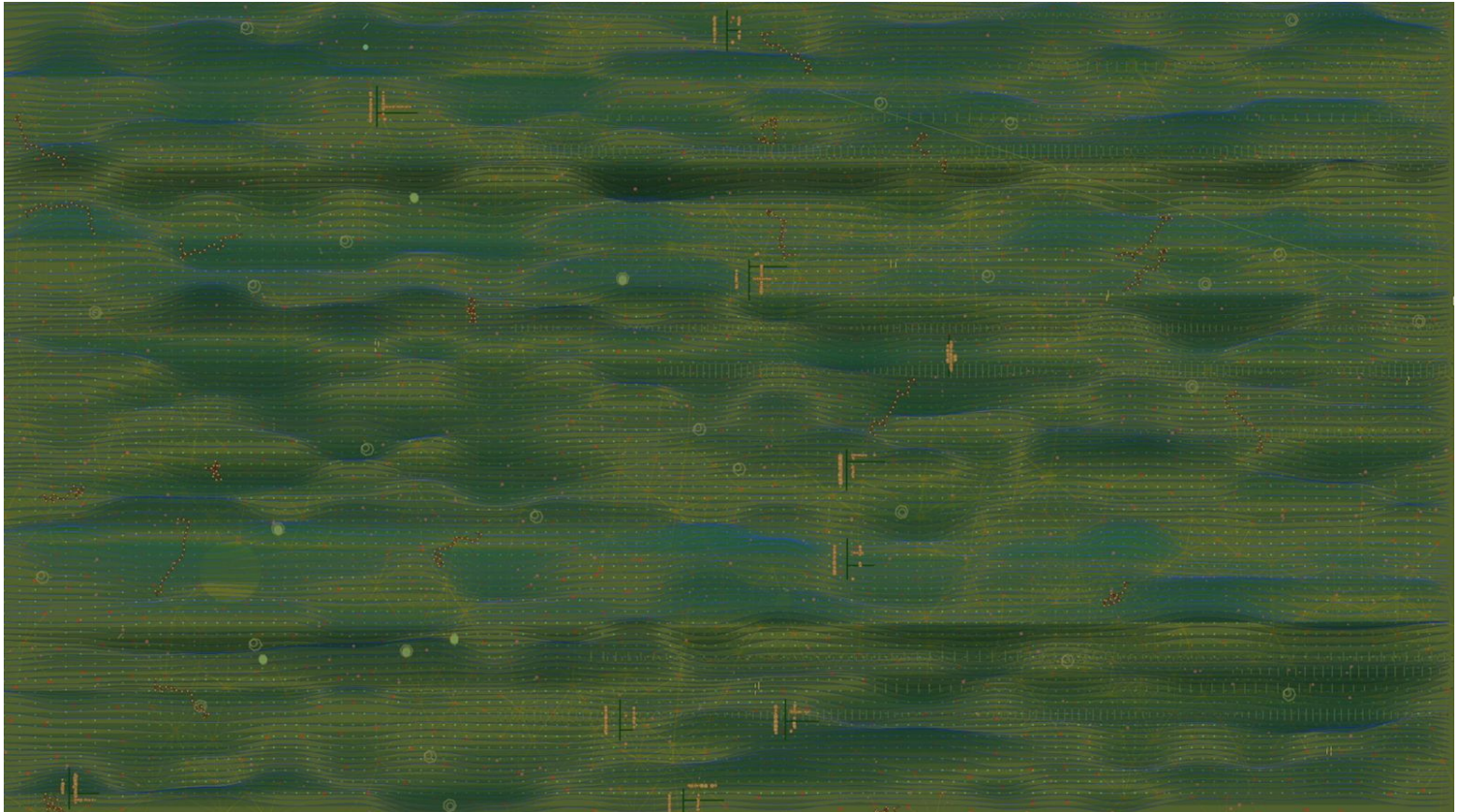
[aferraiolo@gmail.com](mailto:aferraiolo@gmail.com)

[aferraiolo@sarahlawrence.edu](mailto:aferraiolo@sarahlawrence.edu)

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## Project Overview



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### **Project Overview: Main Features**

- hostile environment
- primitive entities
- must act within energy constraints
- horizontal transfer of genetic information including:
  - copy
  - take
  - insert
  - transduction
  - mutation
- fitness function based on sensitivity to environment
- sensitivity based on environmental awareness, community membership

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### **Project Overview: System Loop**

- system starts in balance
- entities use world materials to create energy
- when possible entities transfer genetic information
- sensitivities are updates
- reaper function removes least sensitive
- generation function repopulates randomly

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## Project Description: World Elements

Composites	Entities	Facilitators	Communities	World Clocks
Acid	Acidophiles (remove acid)	Donors (give genes)	Colonies (acid)	Reaper
Heat	Halos (remove light)	Cooperators (share genes)	Films (metal)	Generation
Light	Gammons (remove radiation)		Vents (heat)	
Metal Curtain	Metallics (remove metal)		Vortices (radiation)	
Plastic	Thermophiles (remove heat)			
Radiation				

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## Project Description: Structure of Entities (Agents)

Energy Profile  
*(amount of energy \* rate)* + Phase Features  
*(direction  
strength  
location  
speed)* + Genome  
*(state of operations)* + Clock  
*update energy  
run operator  
call transfer  
update genome* + Operator  
*(order of execution)* => Entity



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## Project Description: HGT

Copy	Take	Insert	Transduction	Mutation
choose random donor choose random gene copy its state	choose random target choose random location take gene	choose random target choose random location insert gene	choose random donor A choose random receiver B choose random segment A transfer to random location B	choose random target choose random location alter gene







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### **Project Description: Increases in Sensitivity**

- add abilities
- join communities

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### **Project Analysis: What is Success?**

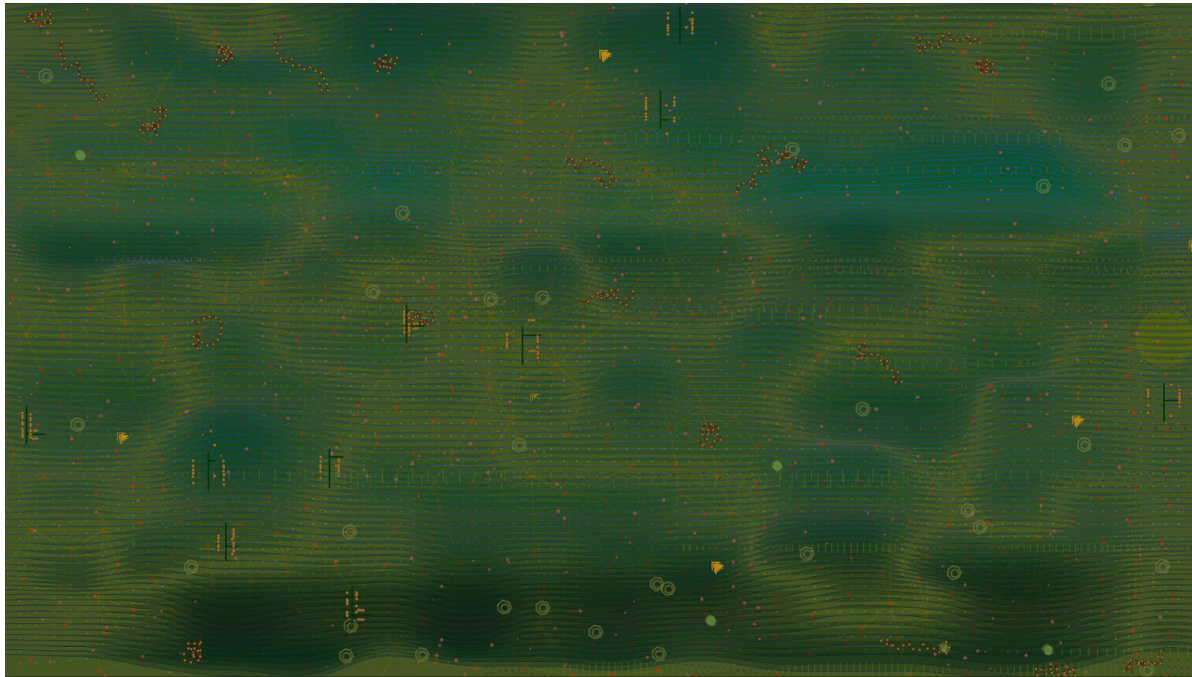
- increased sensitivity
- evolution of behaviors
- individualization
- emergent behaviors
- joins groups
- influence from group
- influence to group

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## Project Analysis: What is Success?

Acid Sensitive Entities - Phase

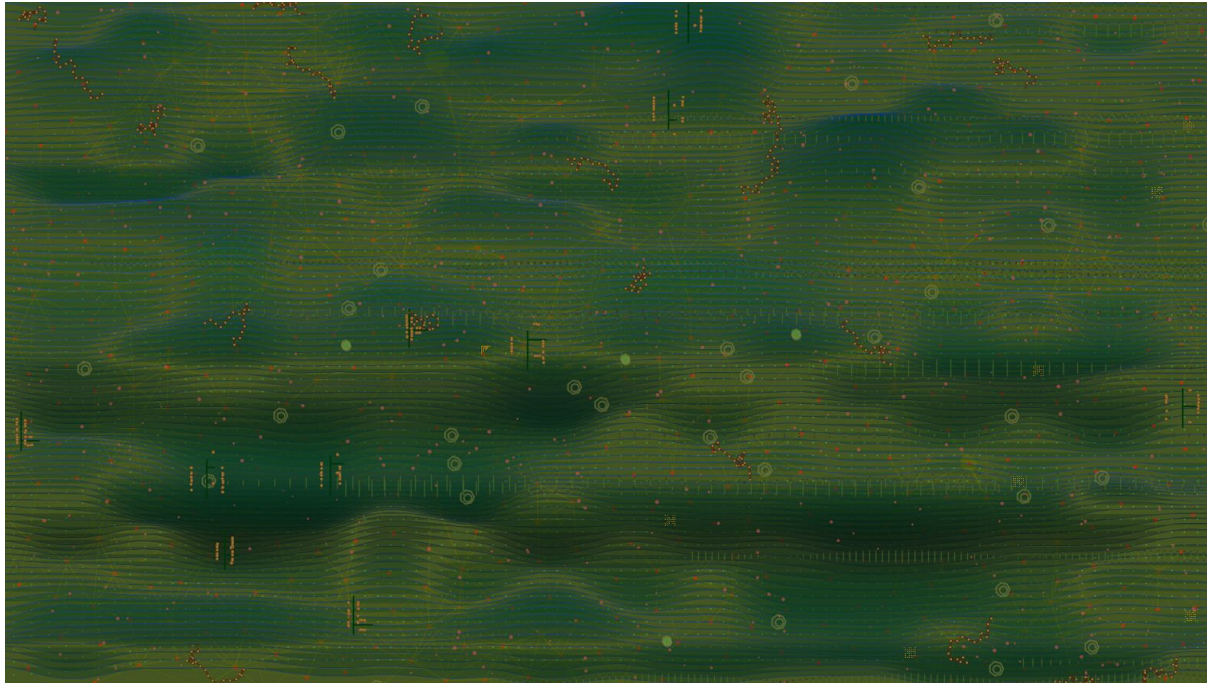


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### **Project Analysis: What is Success?**

Acid Sensitive Entities - Compound

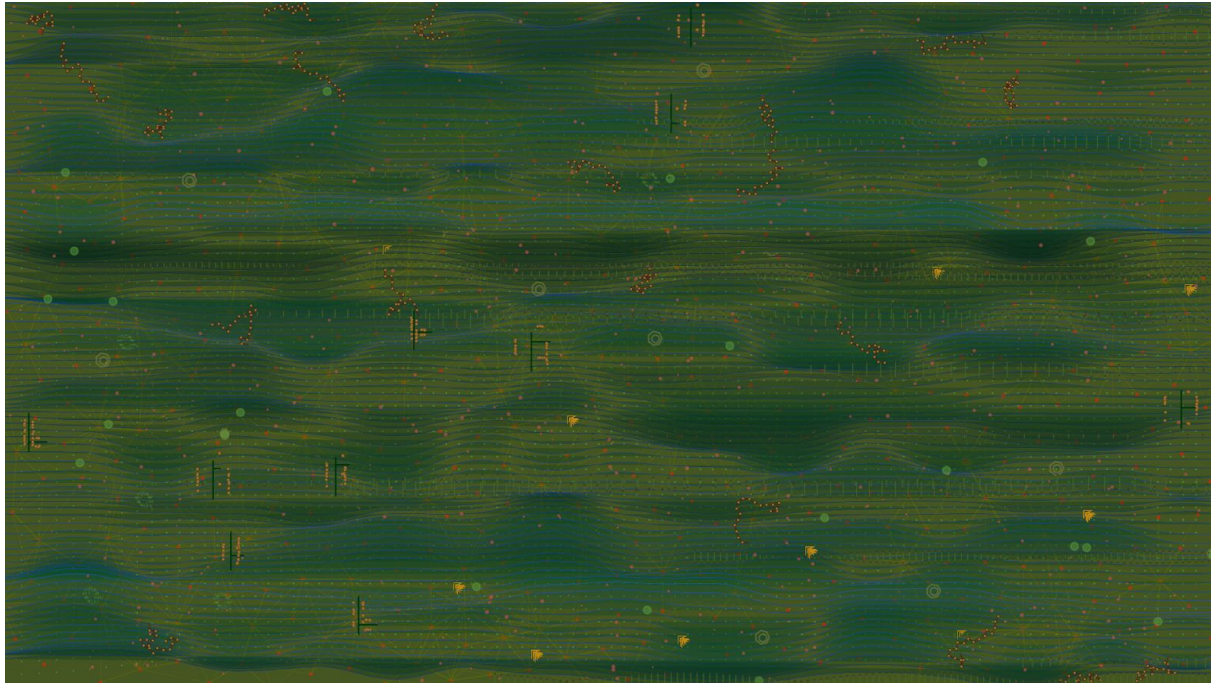


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## Project Analysis: What is Success?

Light Sensitive Entities - Phase

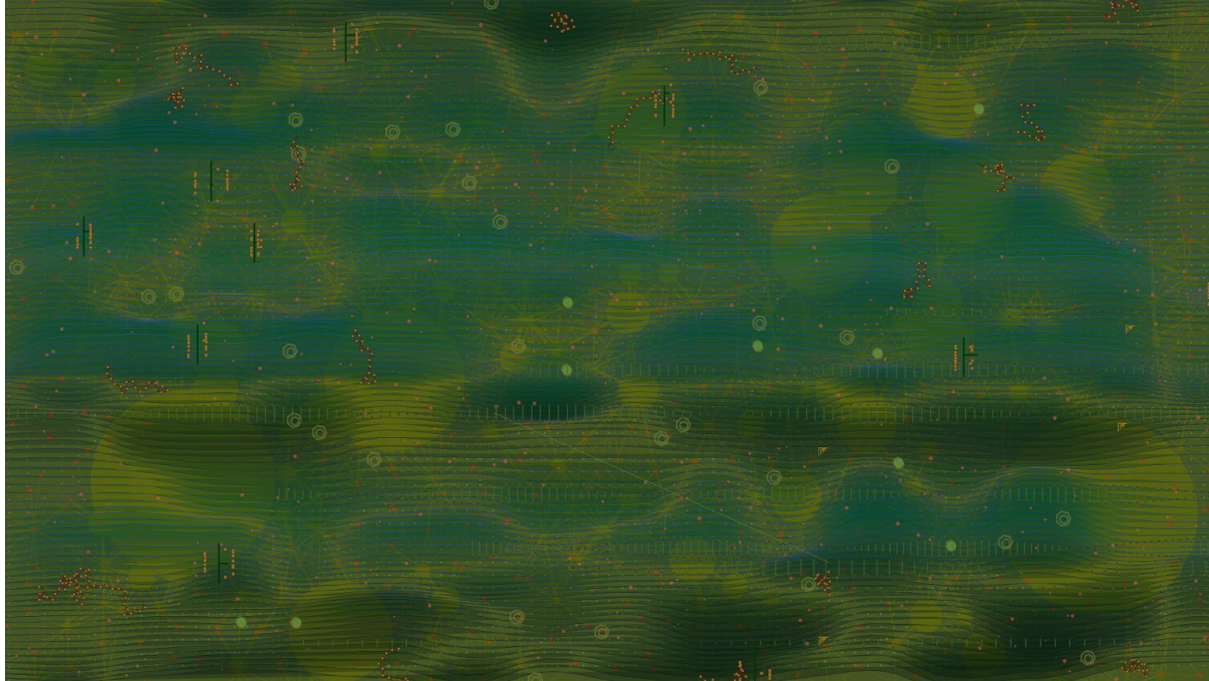


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## Project Analysis: What is Success?

Light Sensitive Entities - Signaling



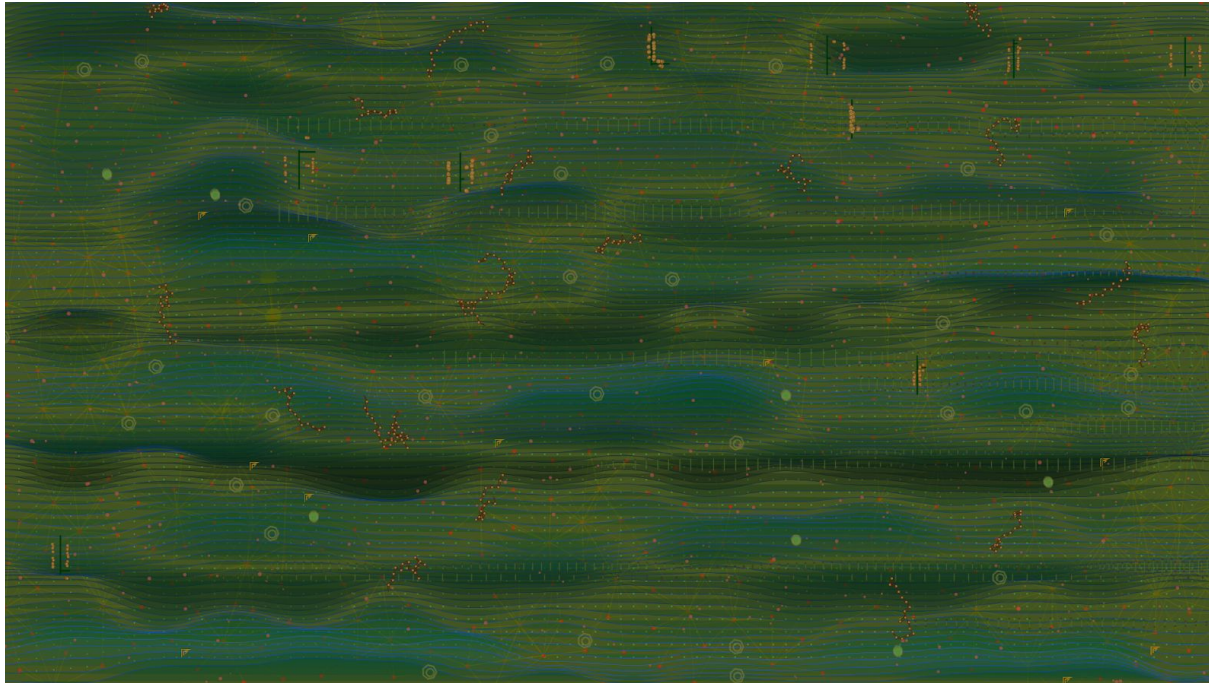


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## Project Analysis: What is Success?

Metal Sensitive Entities - Signaling

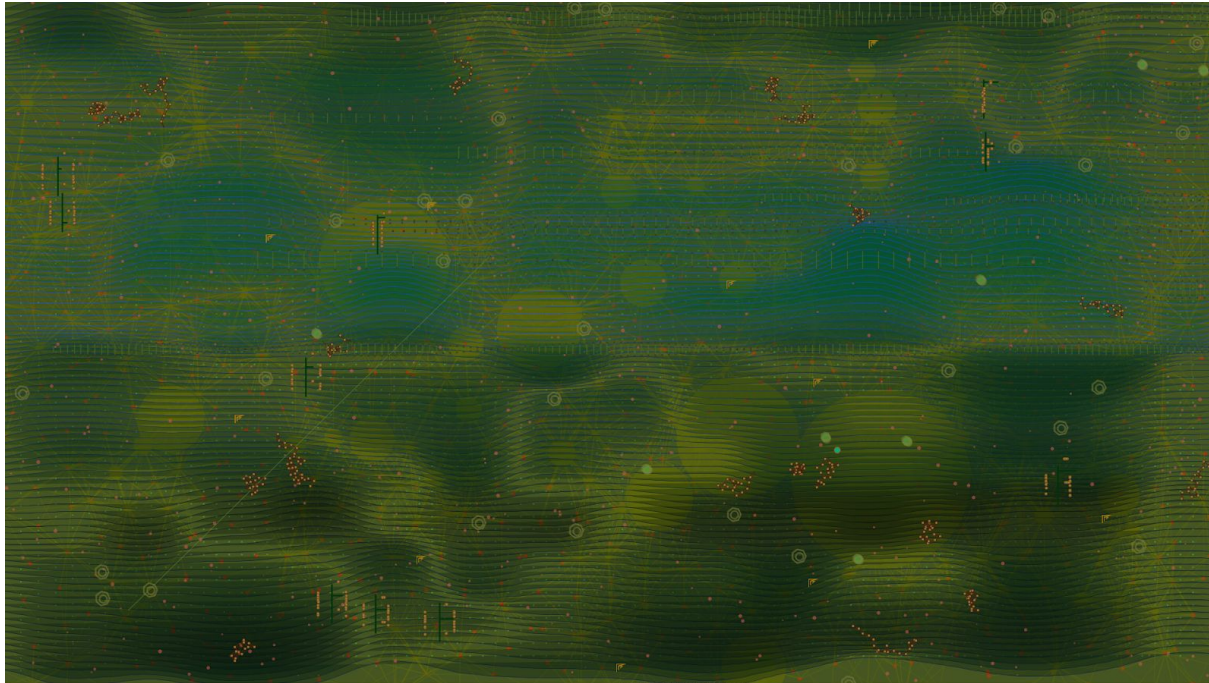


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### **Project Analysis: What is Success?**

Radiation Sensitive Entities - Signaling

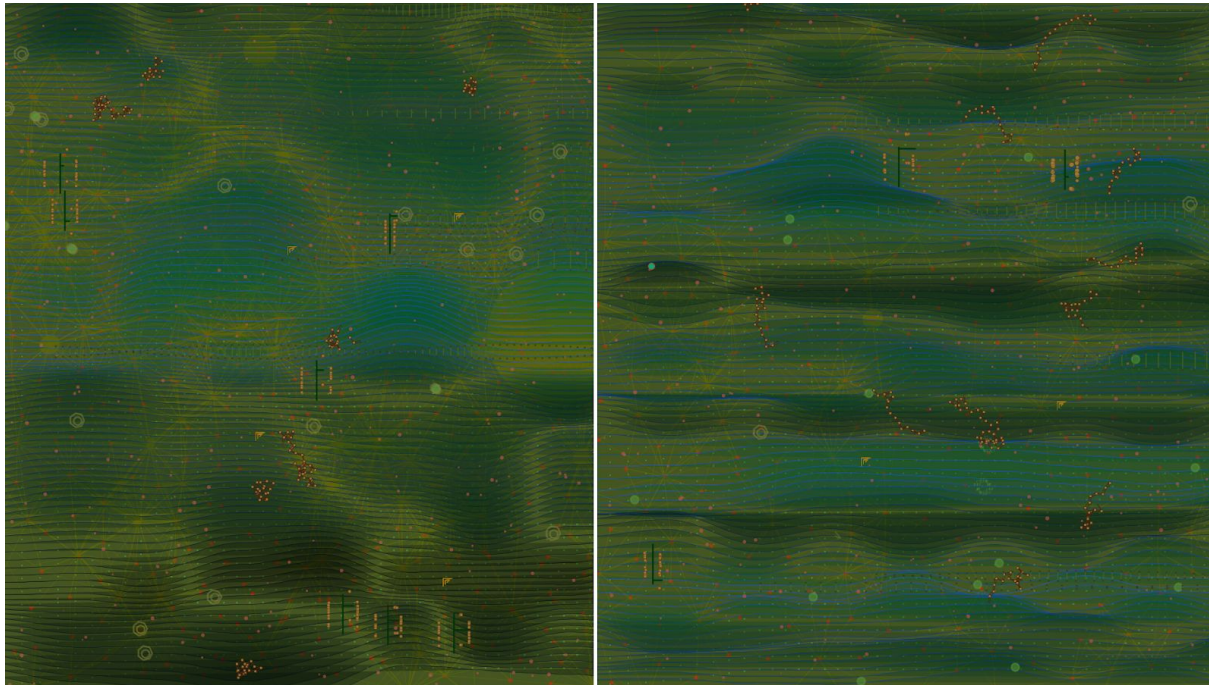


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## Project Analysis: What is Success?

Entities Influence Environment



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### **Project Analysis: Future Goals**

- greater self-organization
- morphogenesis
- more adaptivity
- emergent behaviors

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**Grazie Mille!**

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**Thank you!**

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