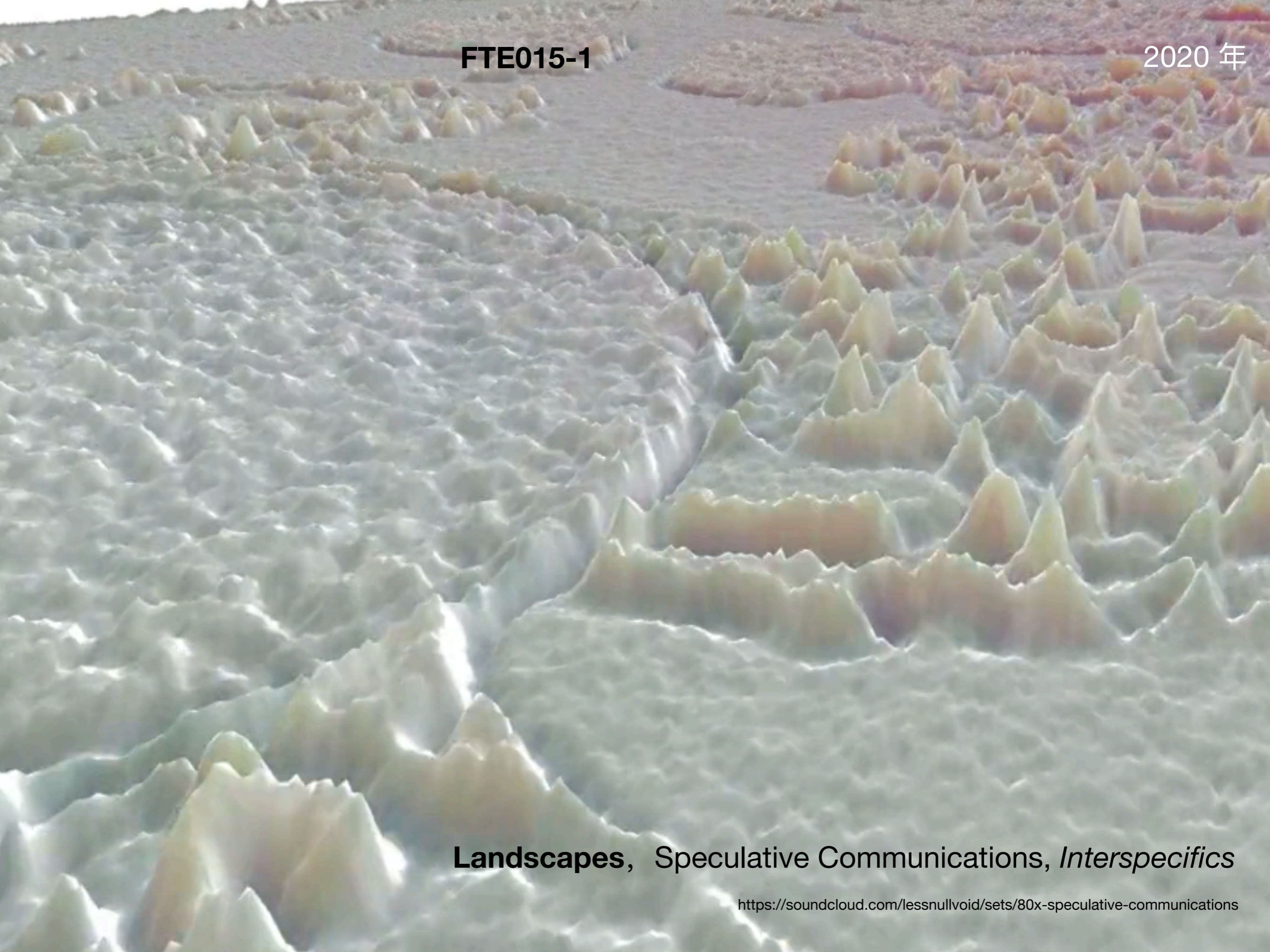


FTE015-1

2020 年



Landscapes, Speculative Communications, *Interspecifics*

<https://soundcloud.com/lessnullvoid/sets/80x-speculative-communications>

Ecología Espacial & Juegos Bióticos



<http://diy.keymerlab.nl>

hibridizando organismos y máquinas

¿Que?, ¿Como?

Juegos bióticos y la biología de microorganismos

Ecología espacial y del paisaje

OSH y HomeScope:

*microscopio hazlo-tu-mismo robótico,
digital, e inteligente*

Plataforma de programación Godot:

*desarrollando juntos
un juego biótico*

25%

25%

25%

25%



60%



10月



60%



11月



60%



12月

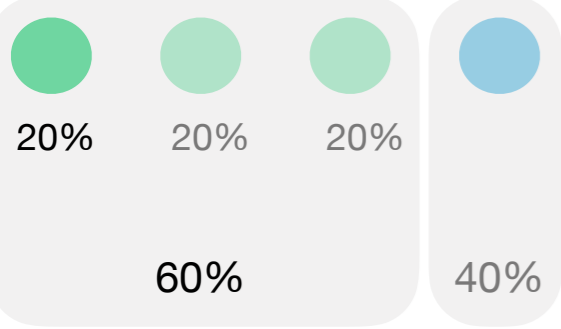


01月

03月

Juegos bióticos y la biología de microorganismos

10月



1周

1周



20%

De maquinas y seres vivos:
auto-poiesis & allo-poiesis

Hibridizando organismos y maquinas
a través de video juegos

Formular 5 preguntas y/o observaciones

basado en: 3 lecturas = (1 + 2)

profundizar en los temas a través de una **discusión**

23 enero 2019

¿Qué es la vida?

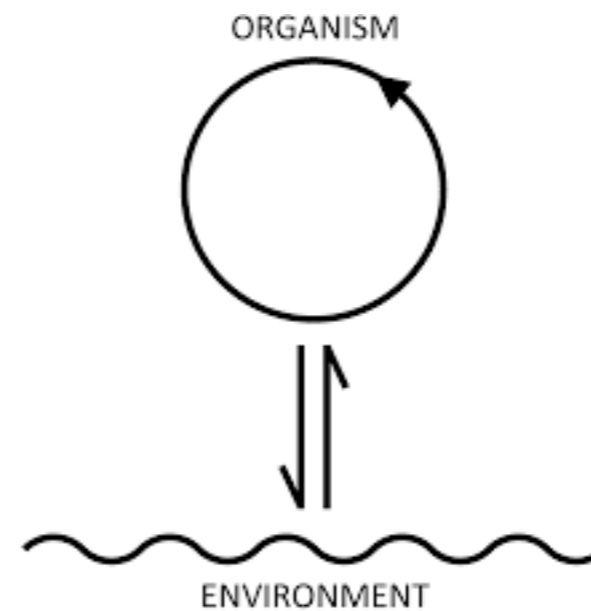


NOBEL MEDIA / ALEXANDER MAHMOUD

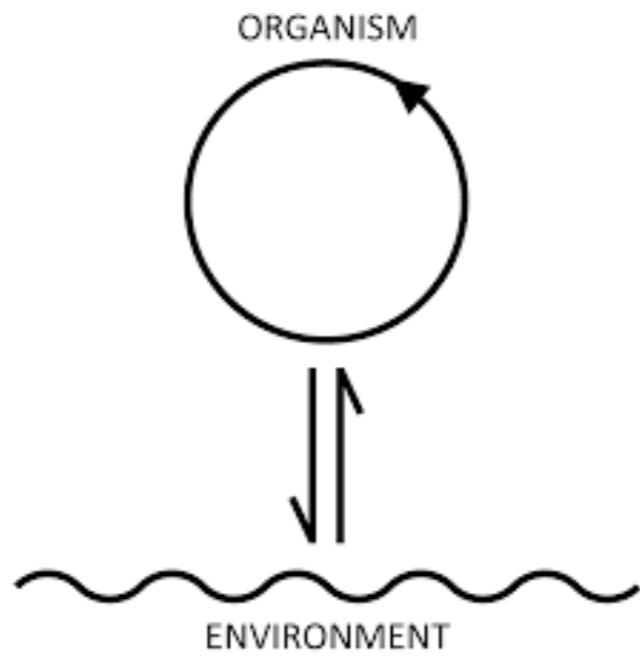
El biólogo chileno Humberto Maturana junto al neurocientífico británico Anil Seth (al fondo) en la conferencia "Nobel Prize Dialogue" en Chile.

Auto-poiesis

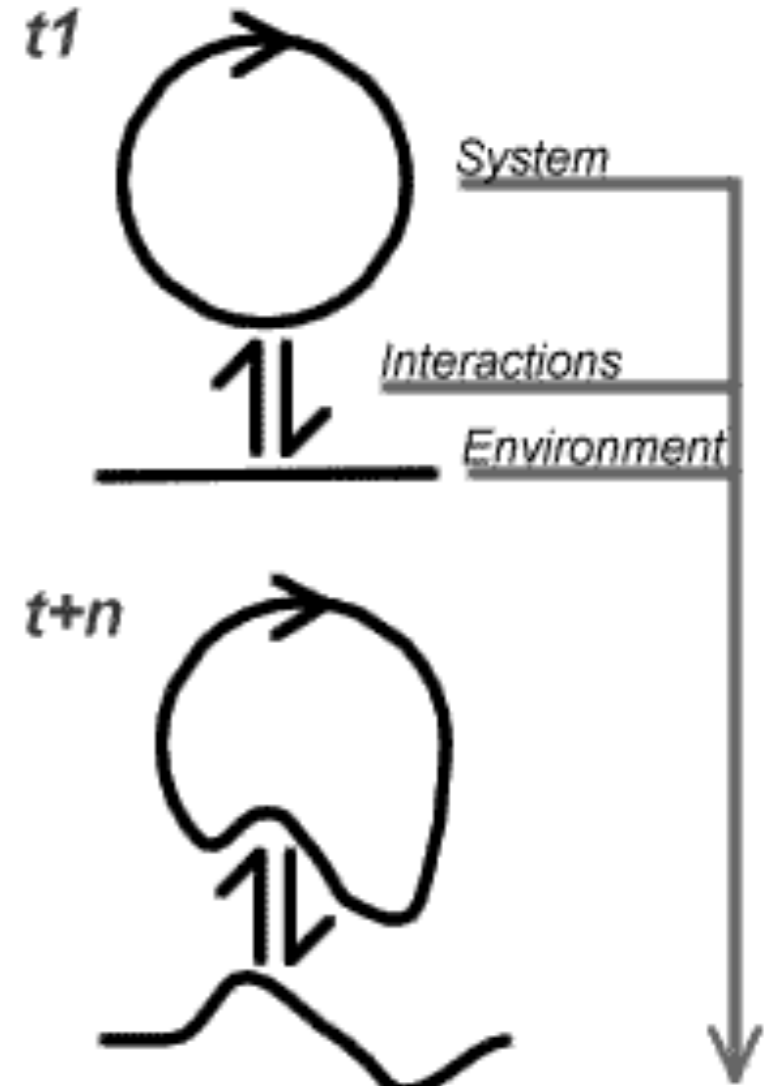
Auto-poietic machine



Autopoiesis



enaction

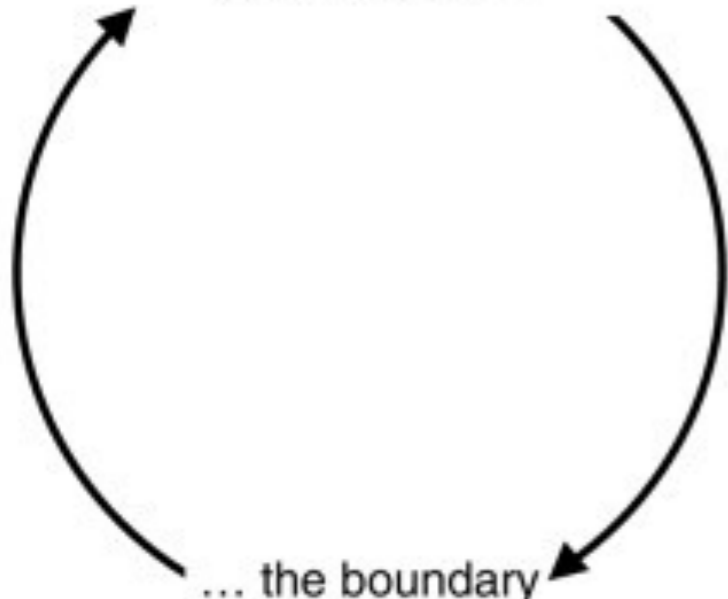


System-Environment
(structural coupling)

A

The cyclic logic of autopoiesis

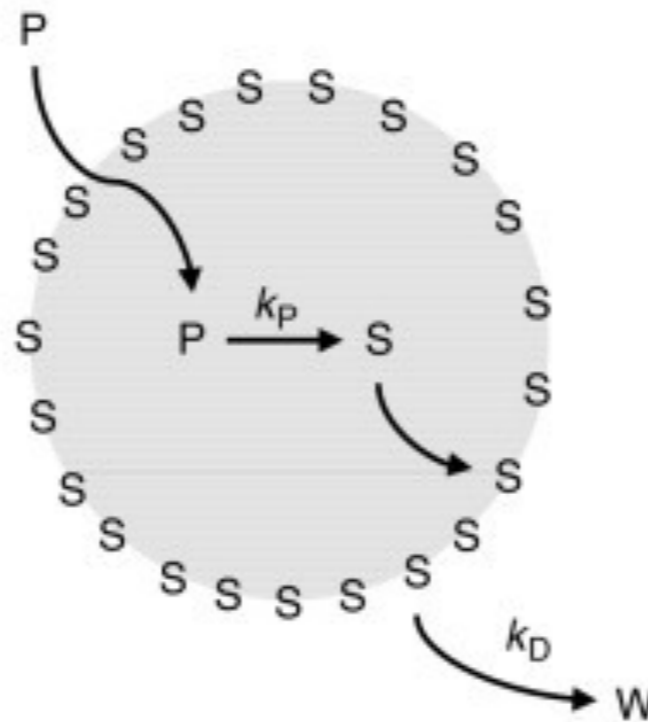
... the processes bringing to the production of molecules that constitute...



... the boundary that allows...

B

A minimal autopoietic system



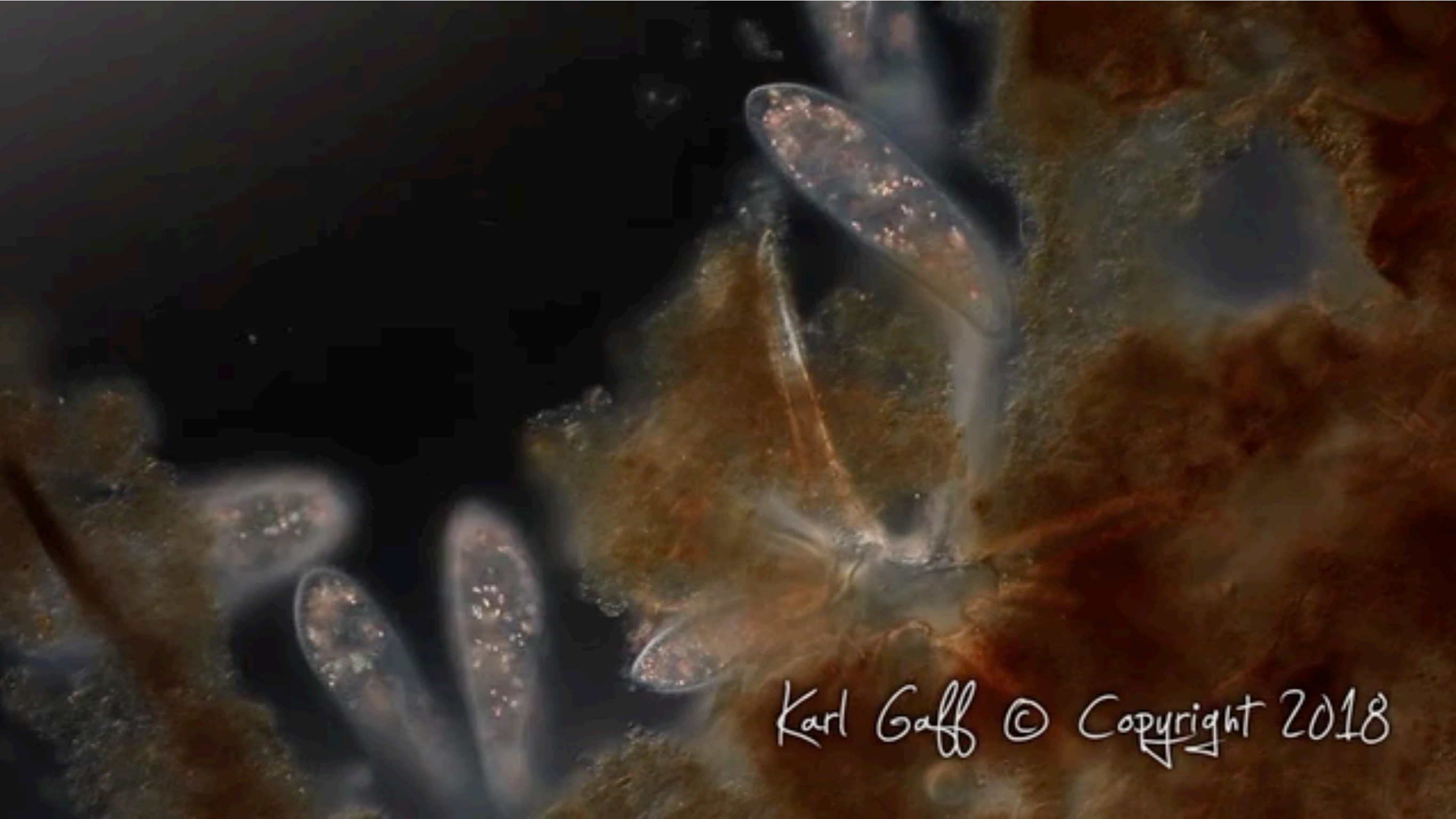
$$\frac{d[S]}{dt} = \nu_P - \nu_D = k_P[P] - k_D[S]$$

$\nu_P - \nu_D > 0$ Growth, self-reproduction

$\nu_P - \nu_D = 0$ Homeostasis

$\nu_P - \nu_D < 0$ Death

Paramecium caudatum



Karl Gaff © Copyright 2018

≈ 100μm

Lab on a Chip

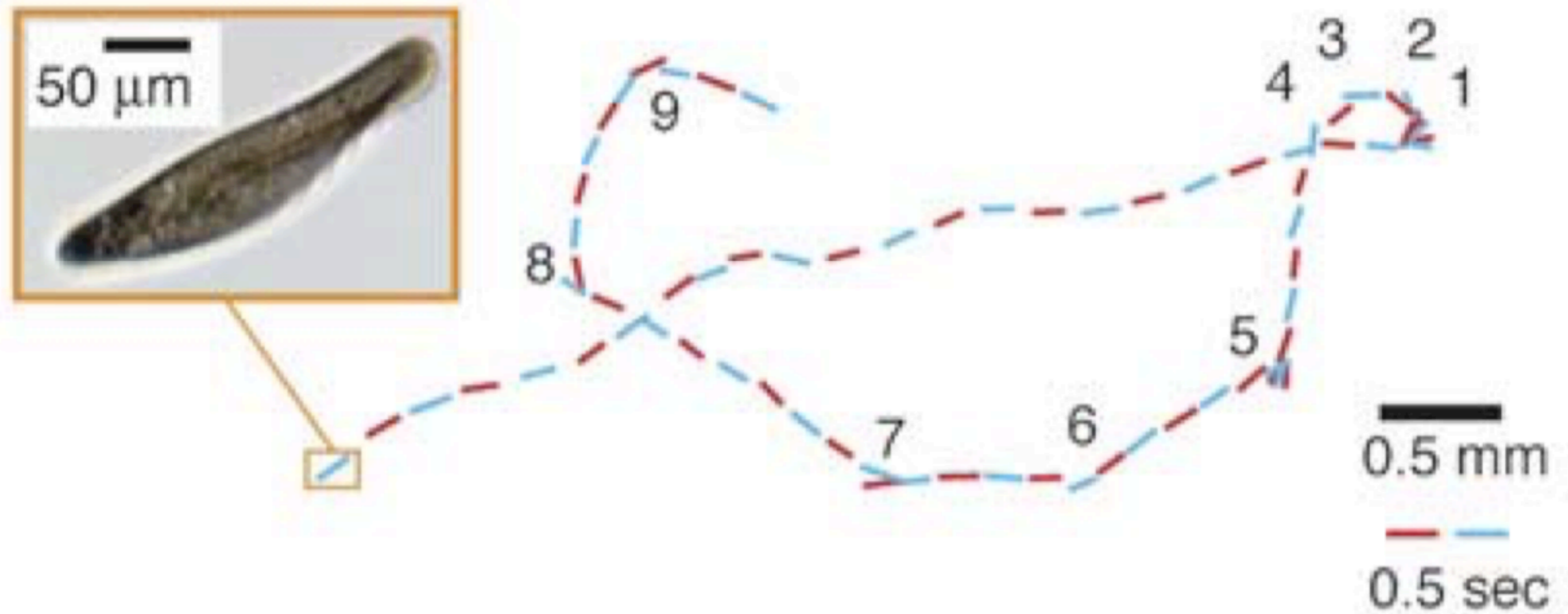
Design, engineering and utility of biotic games†‡§

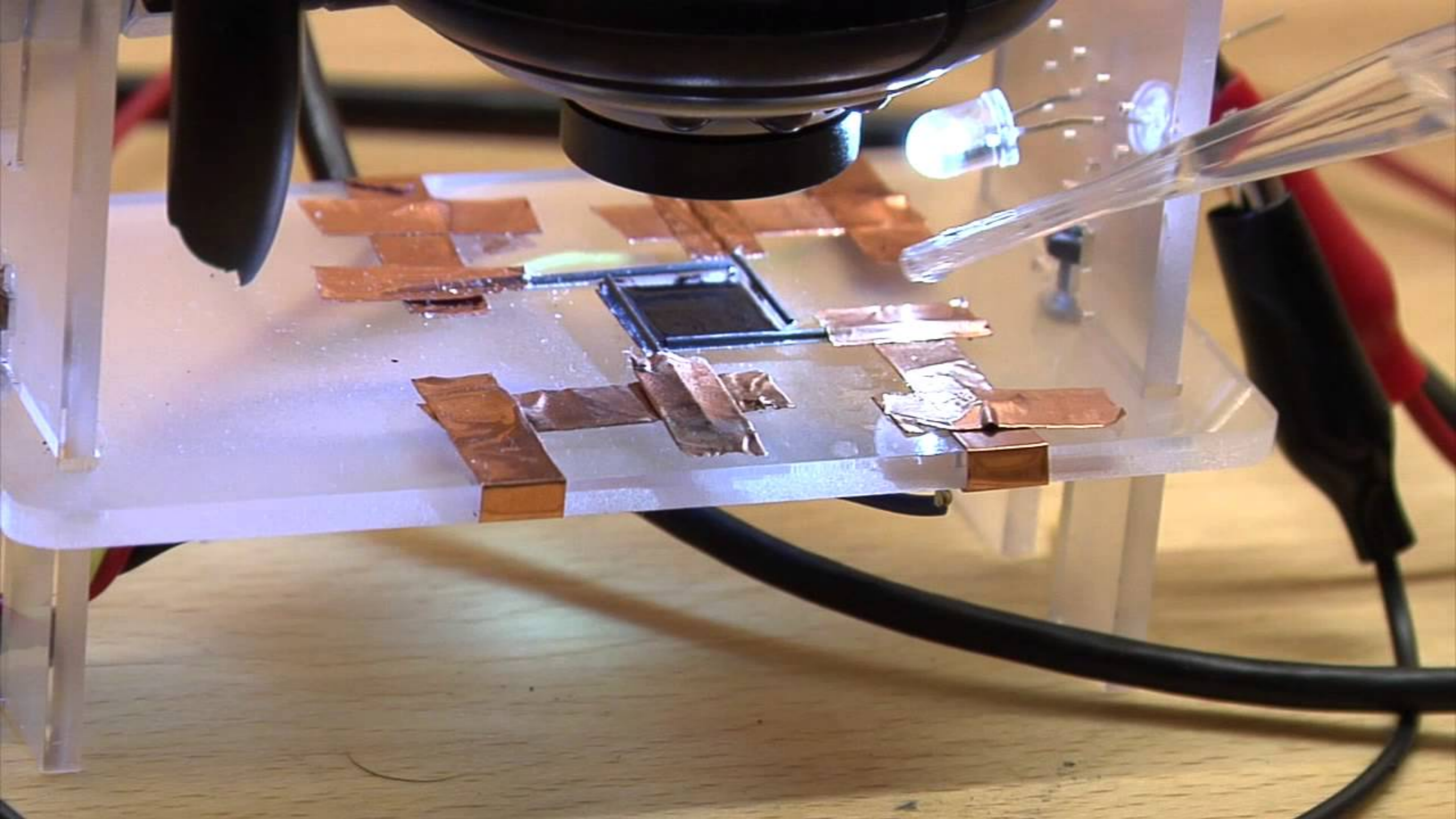
Ingmar H. Riedel-Kruse,^{¶*} Alice M. Chung, Burak Dura, Andrea L. Hamilton and Byung C. Lee

Received 11th September 2010, Accepted 23rd September 2010

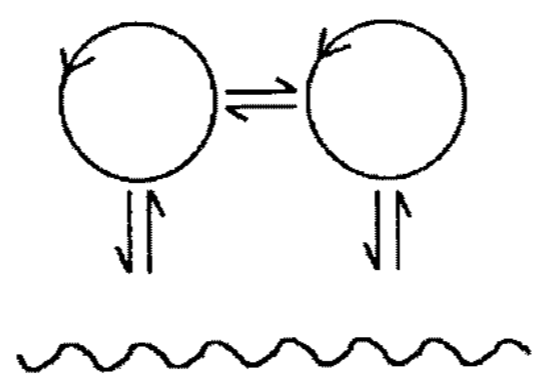
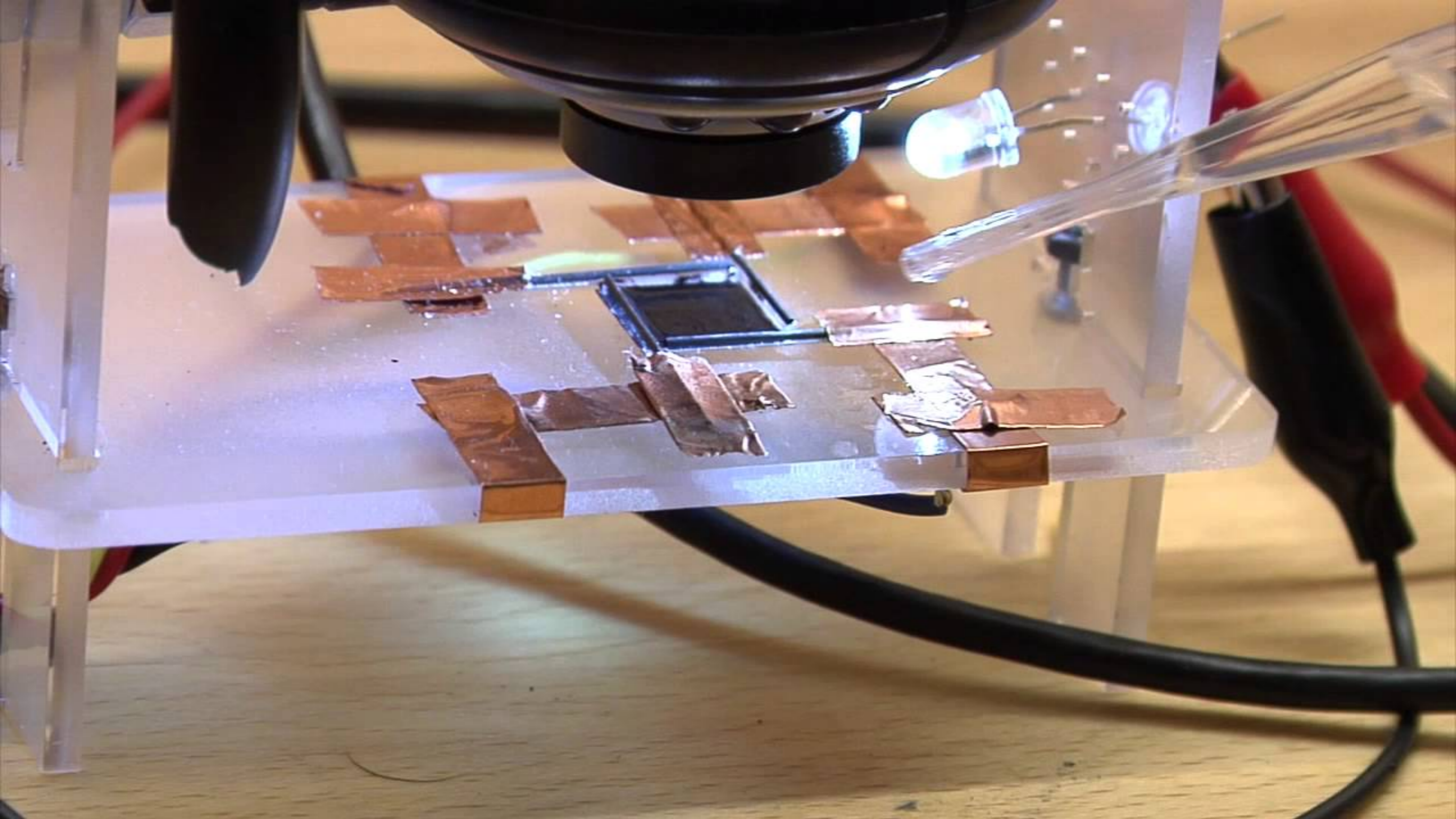
DOI: 10.1039/c0lc00399a

Lab Chip, 2011, **11**, 14



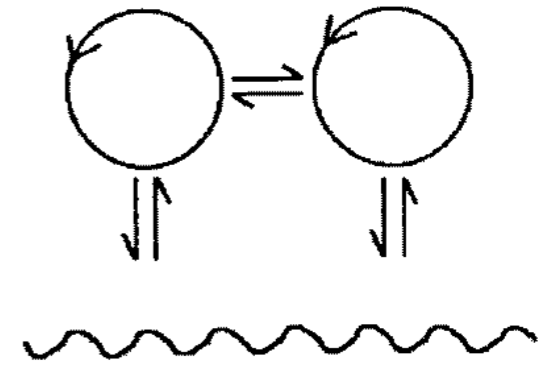


Ecology on-a-chip



Games we play,

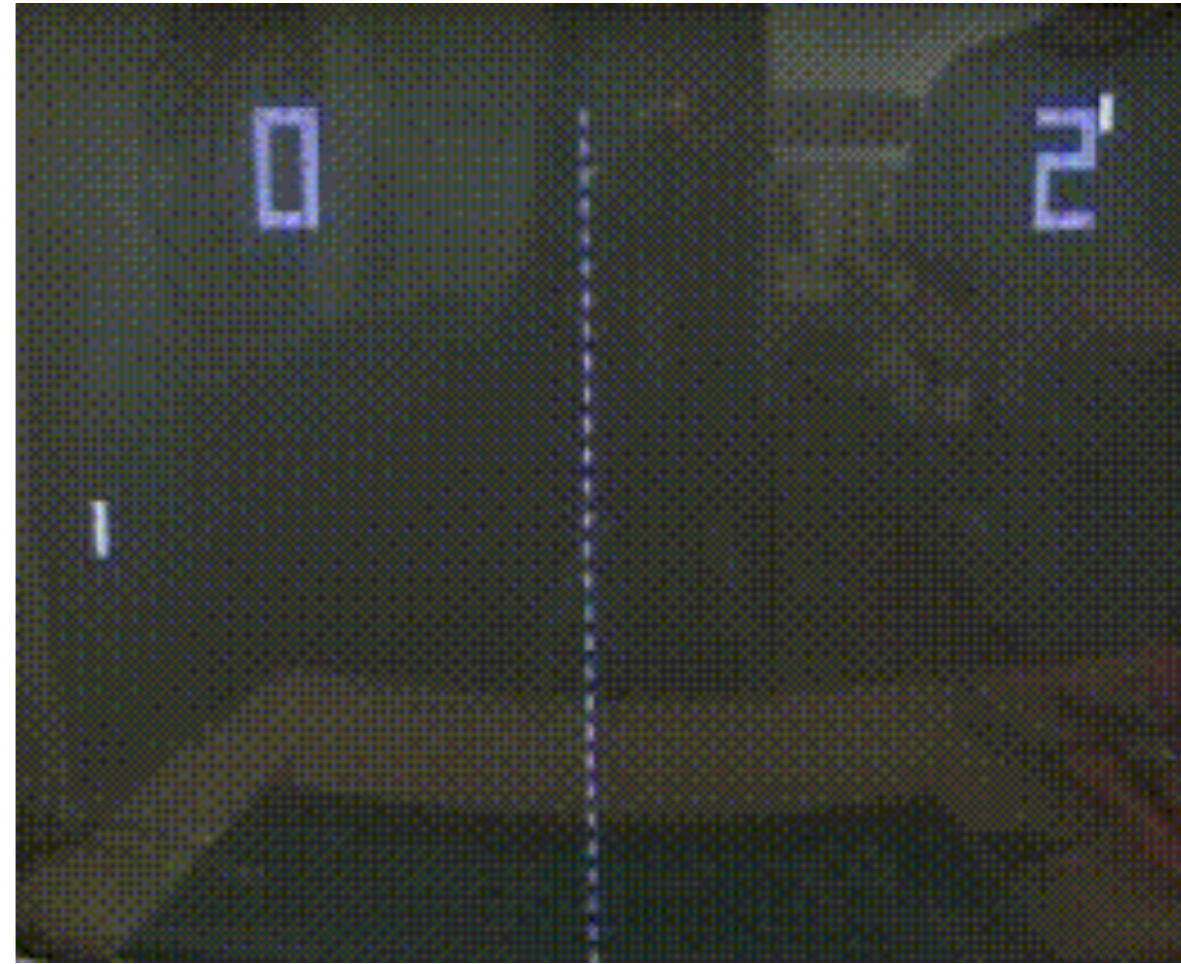
$$\vec{F} = m \cdot \vec{a}$$



The essence is:

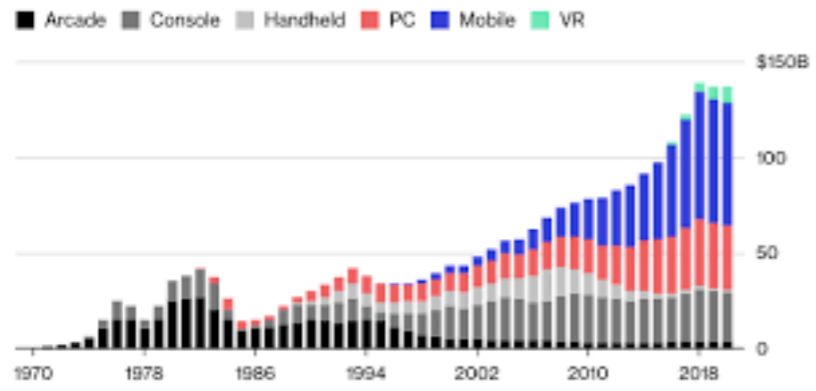
where you hit the ball on the paddle
determines the angle at which it comes off

Pong, 1972, Atari

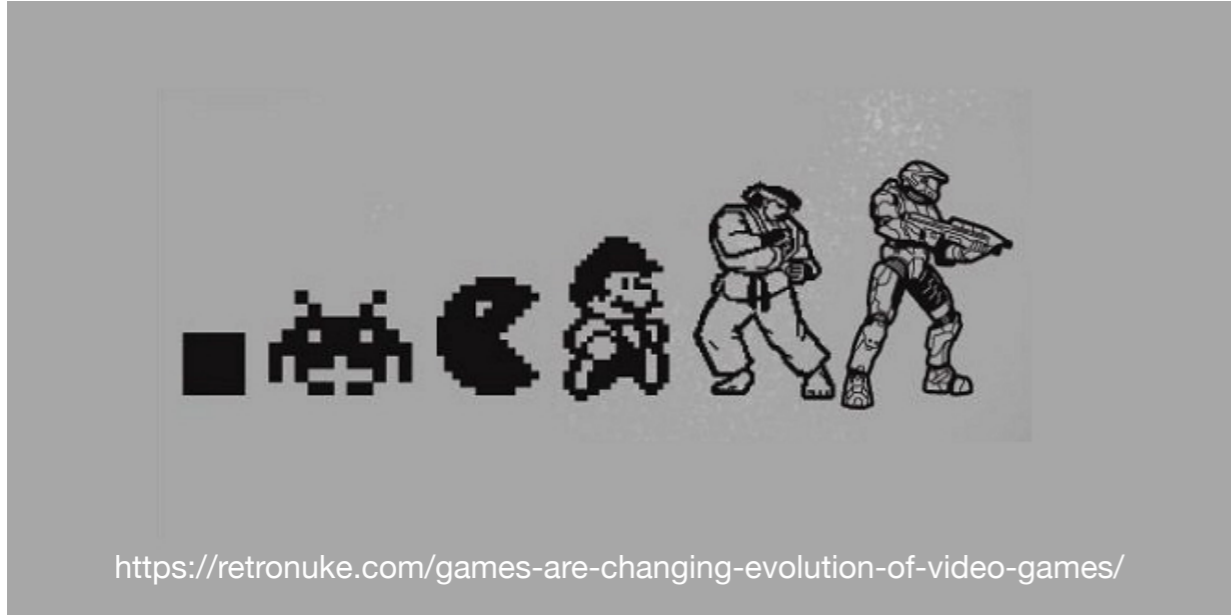


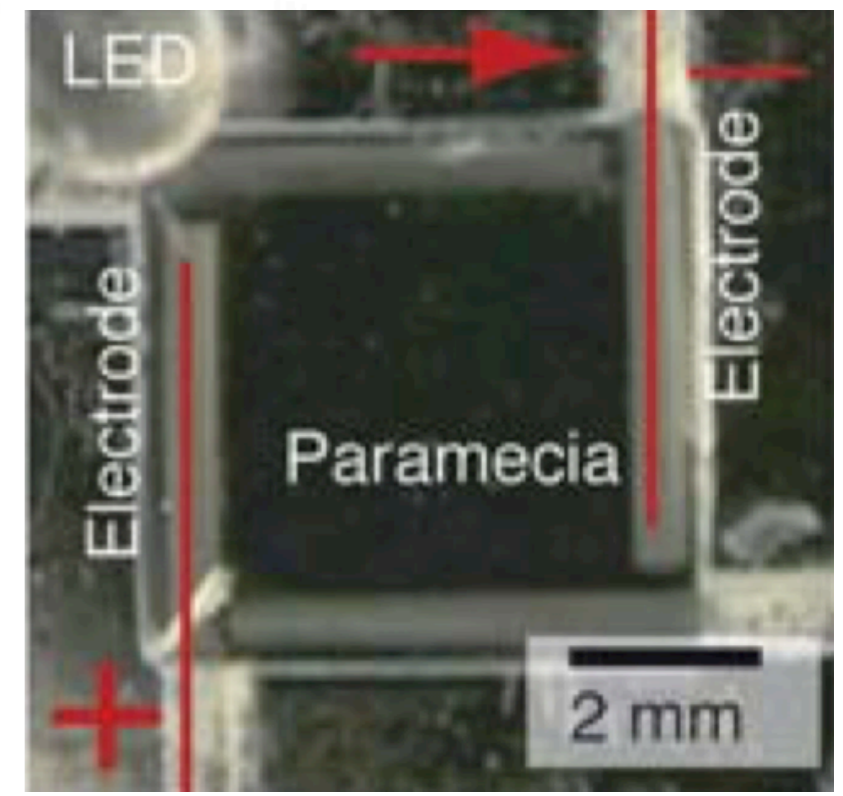
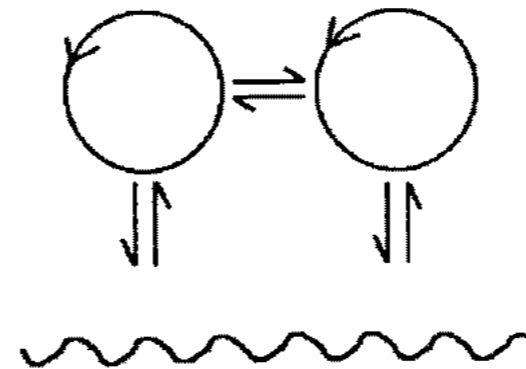
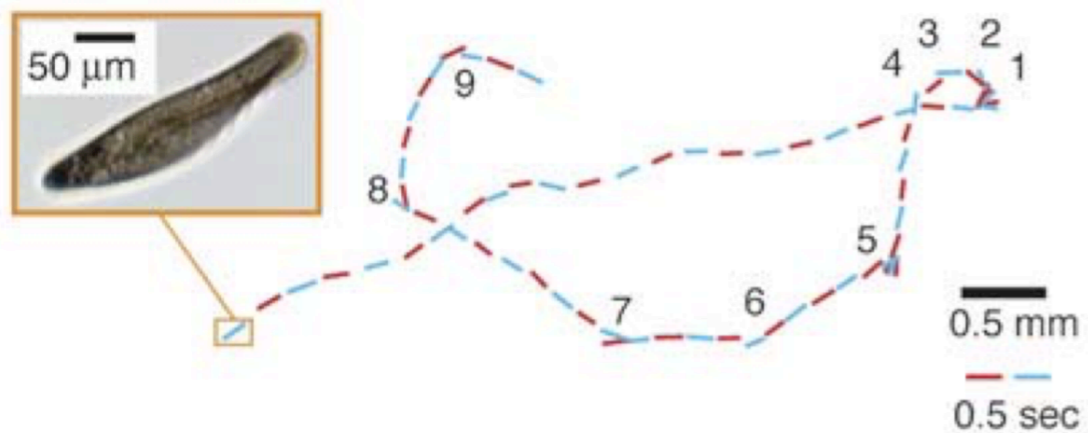
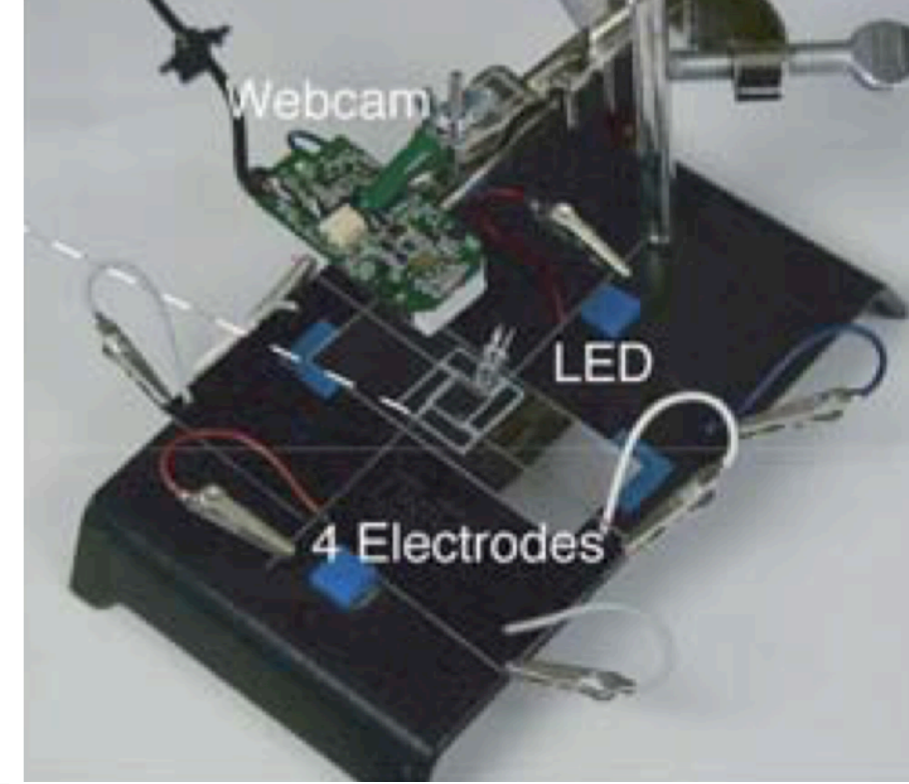
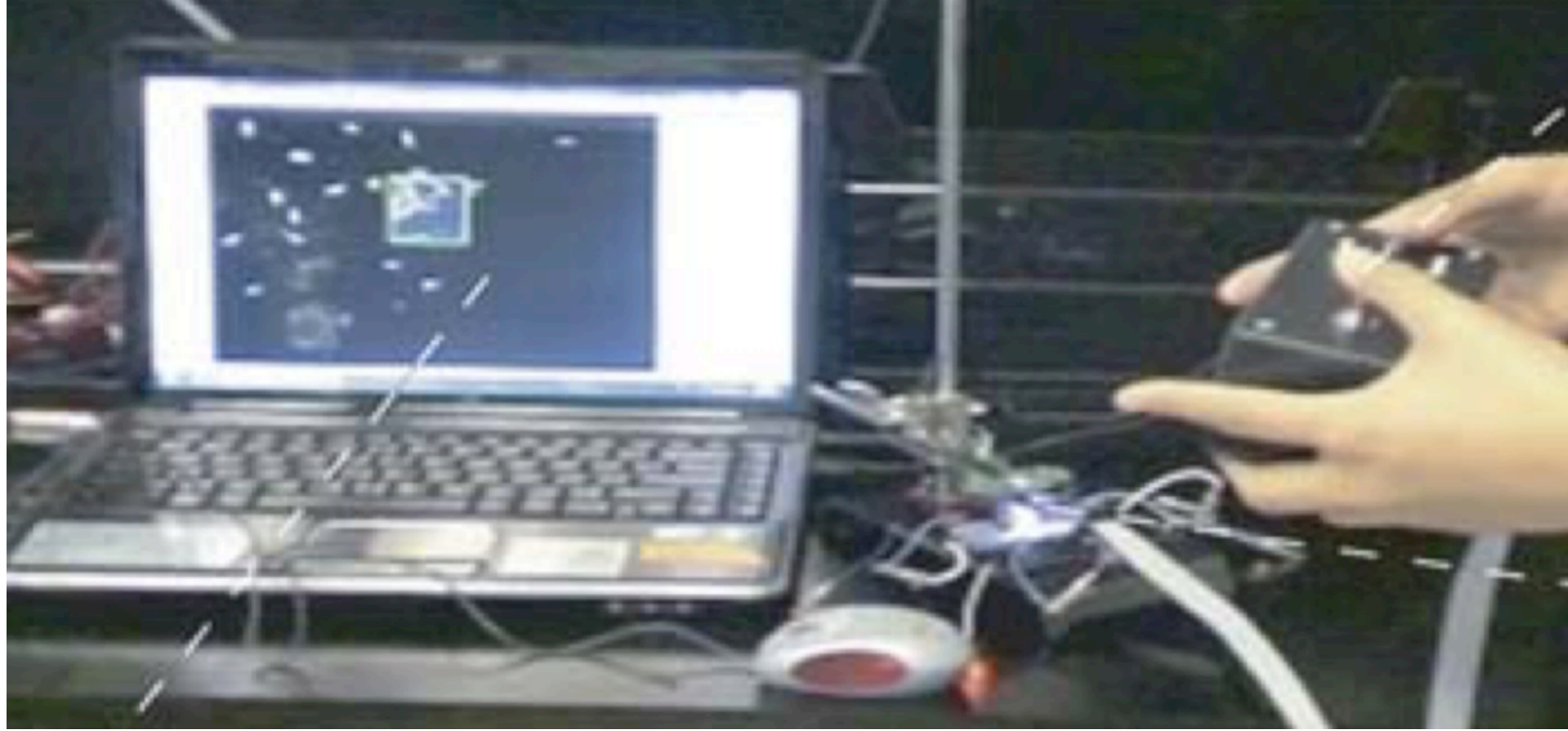
Allan Alcorn (@24) Larning








Source: Pelham Smithers



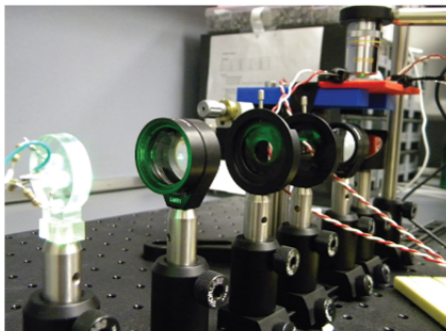


A Biotic Game Design Project for Integrated Life Science and Engineering Education

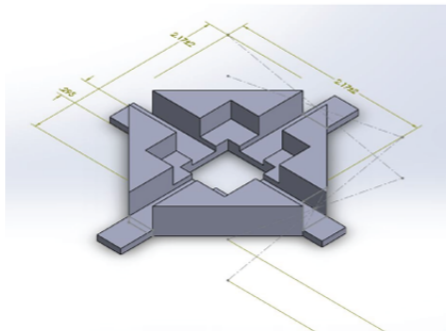
Nate J. Cira , Alice M. Chung , Aleksandra K. Denisin, Stefano Rensi, Gabriel N. Sanchez, Stephen R. Quake, Ingmar H. Riedel-Kruse 

Published: March 25, 2015 • <https://doi.org/10.1371/journal.pbio.1002110>

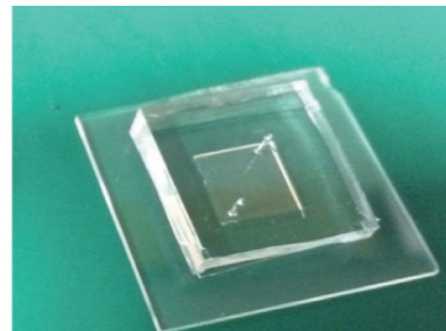
Optics



CAD



Microfluidics

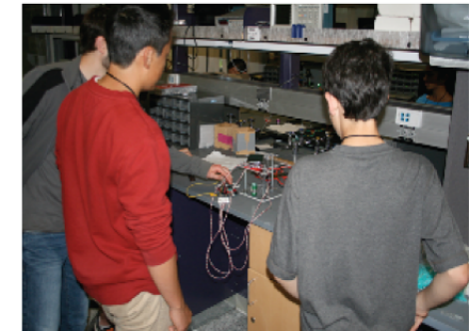


Programming

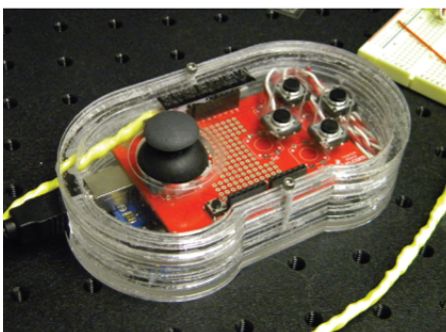
```
function joystick
clear all; clc;
imgreset;
delete(instrfind({'P
a = arduino('COM5')

%Pin assignment
a.pinMode(5, 'output'
a.pinMode(10, 'output
```

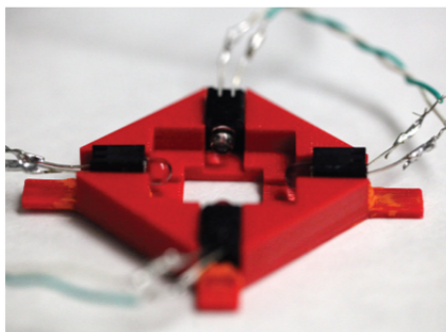
Ethics & Society



Electronics



Fabrication



Microbiology

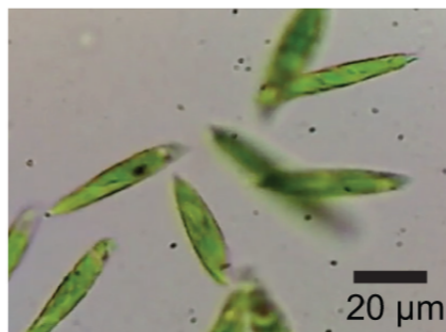
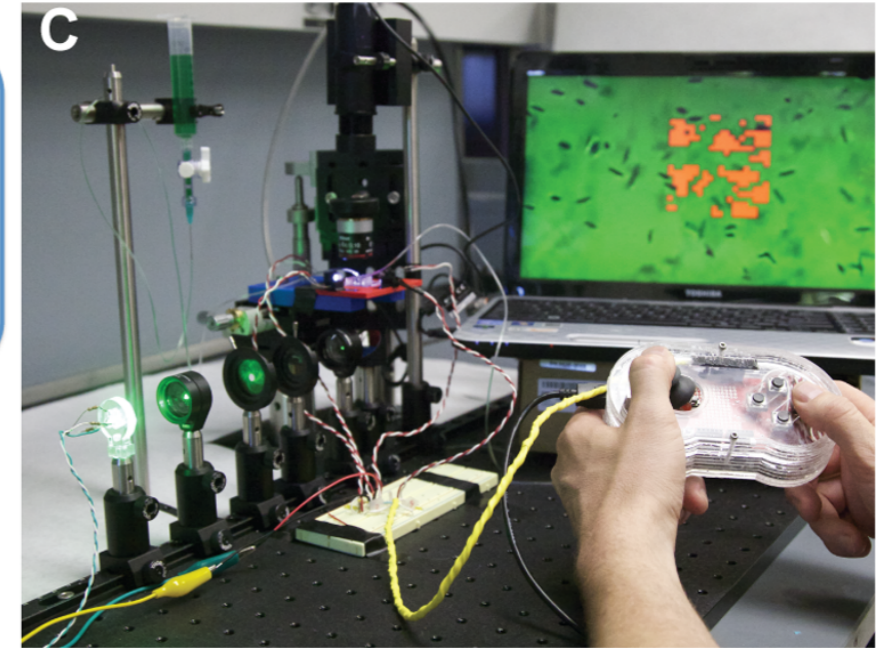
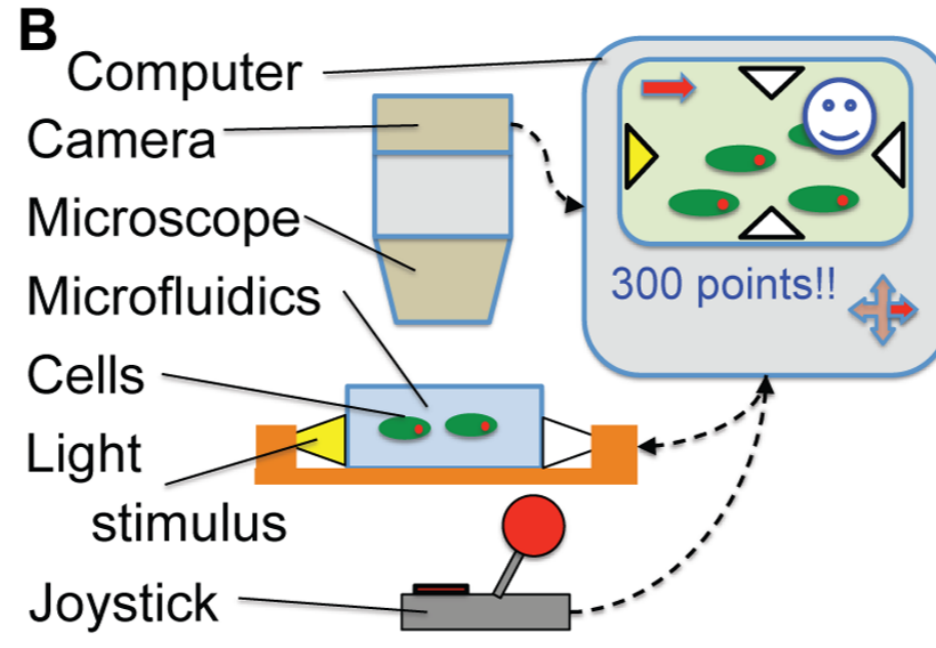
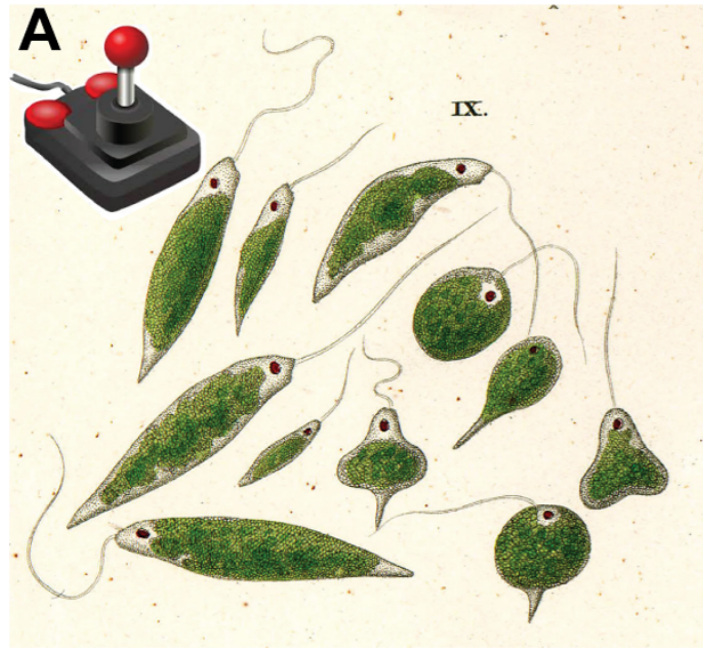


Image Analysis

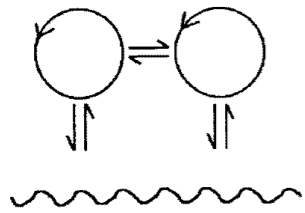


Game Design



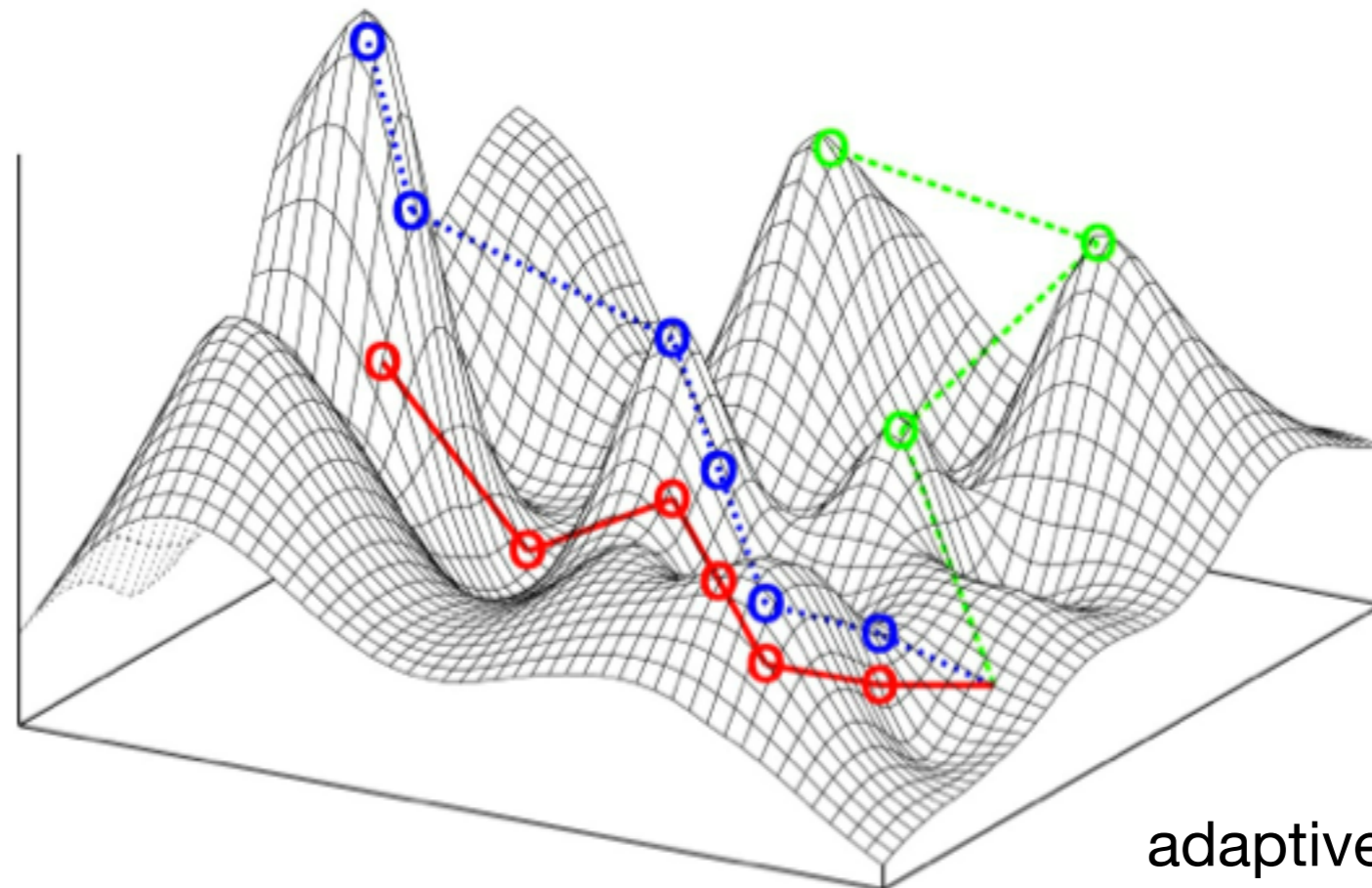
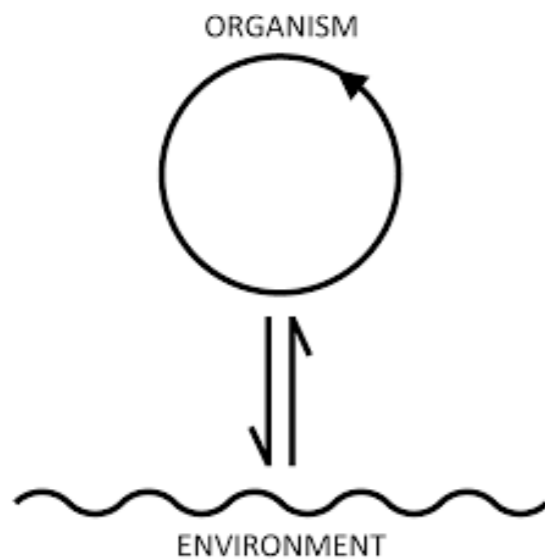


interaction



ecology on-a-chip

game narrative



adaptive landscape



<http://diy.keymerlab.nl>

