

Towards an embodied expression of pandemic nodes & networks in the age of social distancing

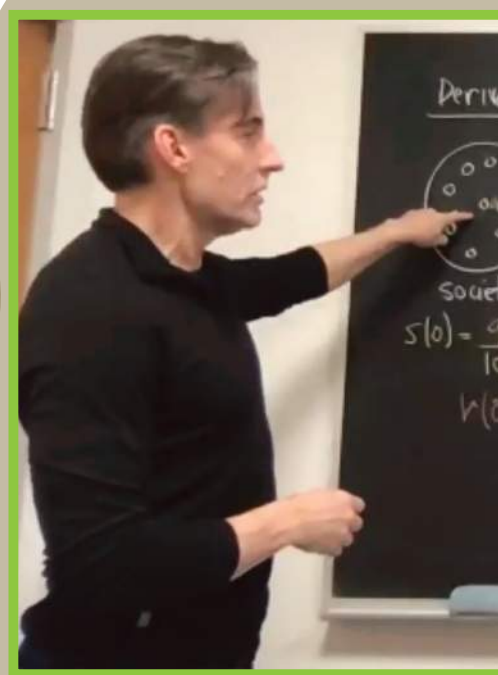
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THE PROBLEM

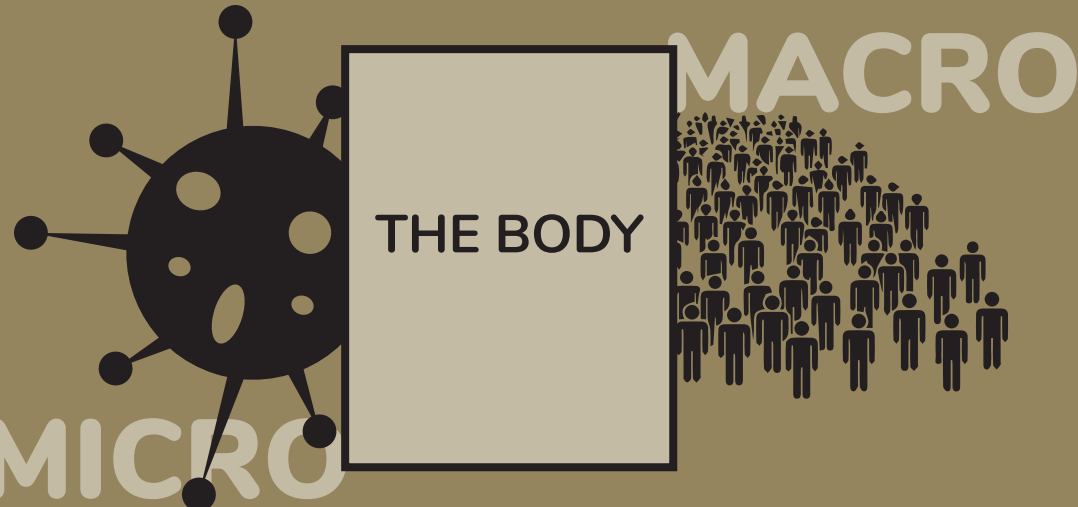
HOW MIGHT THE BODY BE CALIBRATED WITH THE MICRO AND MACRO IN THE HIERARCHY OF DISEASE SPREAD?

Math Rehearsal: Dancers learn the calculus of the SIR Model for Infectious Disease with professor in their first zoom rehearsal of the pandemic.



$$s(2\Delta t) = \frac{7}{10} \quad i(2\Delta t) = \frac{2}{10} \quad r(2\Delta t) = \frac{1}{10}$$

Delta hands: Dancers extrapolate the derivative, a rate of change over time, as the foundational element of the SIR model and decide to use it as the starting point for engaging the body. Dancers start with simple hand movements in the shape of a triangle representing the delta of change over time.



Before the covid-19 virus was understood by scientists, social distancing was the pandemic's only effective remediation tactic. Despite this, social distancing became politicized and denial was persistent. An inability for the human body to perceive the spectrum of scales through which disease spreads is likely one of many contributing factors.

THE PROCESS

number of contacts per unit time

reproduction number

$$R_0 = \frac{b}{k}$$

(time to recover)

THE MOVEMENT

The dancers individually filmed 3 scenes containing a set of **susceptible, contact, infected, and recovered** phrases. Each dancer and each scene was assigned a specific number of times to repeat the **susceptible** phrase, corresponding to 3 different reproduction numbers. The choreography chart below was made to organize the dancers relative to one another without being in the same physical space.

movement	Notch	b = 1 contact per day	k = 1/4 counts 8	b = 2 contacts per day	k = 1/8-8s
Nicole	S S S S *	i i r		Nicole	* i i i i r
Lisa	S S S *	i i r			S S S S
Alaina		i			S S S S
Jessie		i			S S S S
Bealla		i			S S S S
Ava		r			S S S S
Kaylee		r			S S S S
Beanna		r			S S S S
Avi		r			S S S S



S = susceptible / Alaina phrase = 2-8's
 I = infected / Jessie phrase = 2-8's
 * = contact → still needed → Avi's hand phrase
 r = recover phrase → still needed

HOW MIGHT MATH BE MADE SALIENT TO THE BODY?

THE MATH



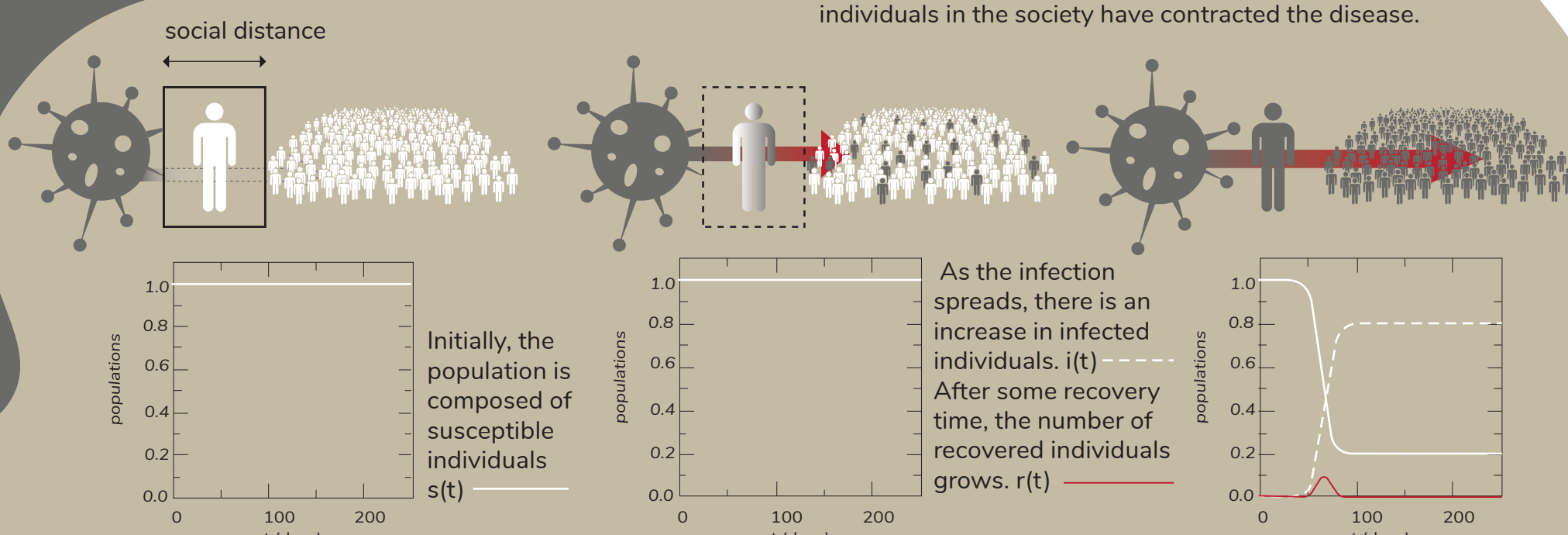
An initial population of susceptible individuals is shown in **black and white**. Fog covers a single cell representing the first infected individual. **Sepia** expresses the contact between an infectious and susceptible individual before the onset of infection and fog. **Color and clarity** are used to express the state of recovery.

The **susceptible phrase** expresses the openness and vulnerability of the individual lacking infection or immunity to disease. **Contact** between a susceptible and infected individual is expressed through expansion, the outreach to others, and contraction, internalizing the infection. The **infected phrase** expresses the fear and anxiety resulting from the abrupt transition from wellness to illness. The **recovered phrase** pulls elements from the previous phrases to embody the comfort and relief of recovery and the return to openness.

THE SIR MODEL of infectious disease

S susceptible
I infected
R recovered

The SIR model predicts exponential growth of infectious disease in time. Note that at the end of the epidemic, most individuals in the society have contracted the disease.



THROUGH/WITH/ABOUT ZOOM: A META-MEDIUM FOR SOCIAL COMMUNICATION, LEVERAGED FOR VISUALLY COMMUNICATING THE NEED FOR SOCIAL DISTANCING. ($R_0 < 1$)

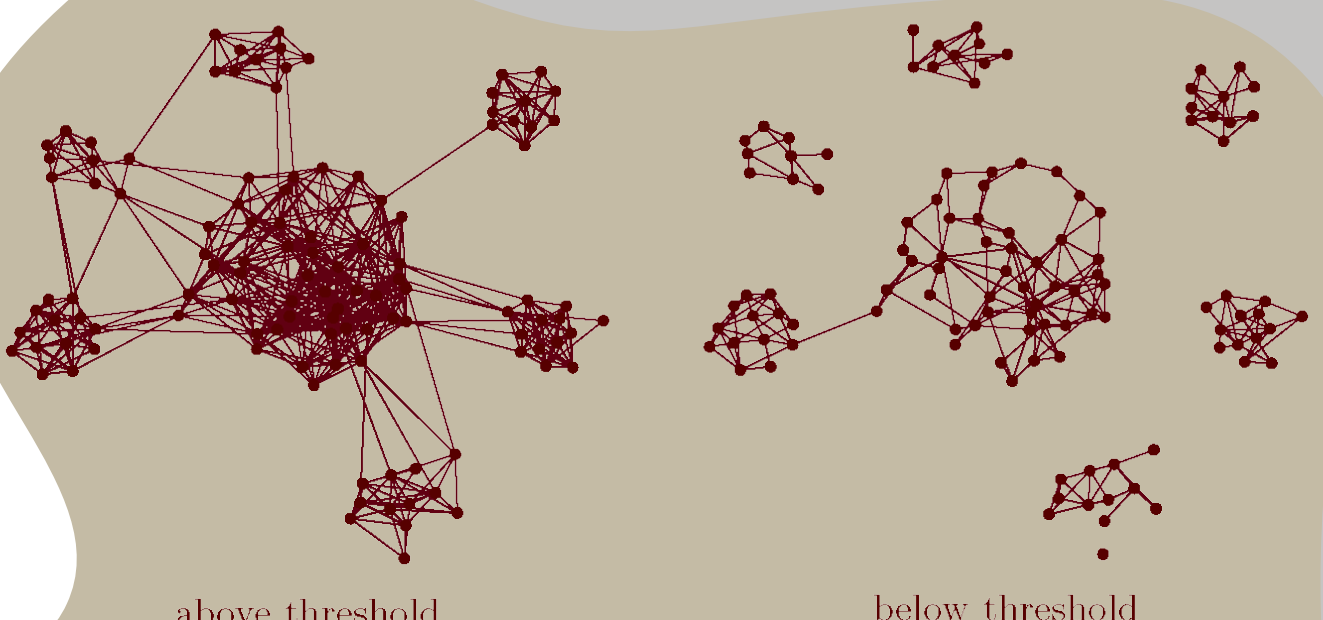
$b = 1/20$ $k = 1/10$ $R_0 = 1/2$
 contact rate < recovery rate
 receding infection scenario

$b = 1/10$ $k = 1/10$ $R_0 = 1$
 contact rate = recovery rate
 maintained infection scenario

$b = 2/10$ $k = 1/10$ $R_0 = 2$
 contact rate > recovery rate
EPIDEMIC SCENARIO

THE FILM

Within the population of scene 3 there are small communities, expressed by four quadrants. Each community harbors an infected individual. Over time the infection spreads to reach every individual. The kaleidoscopic vision expresses the overwhelming feeling of disorientation and confusion at the onset of an epidemic.



Grouping individuals into pods can limit the spread of disease and prevent epidemics. The hyper-connection of individual created by frequent and distant travel facilitated the coronavirus pandemic. Limiting travel and forming pods can prevent the onset of a pandemic.

A social network of 114 individuals (red dots) forming 7 clusters. The distance between dots represents social distance. (above threshold) All clusters are connected and every individual is linked to every other individual. (below threshold) Clusters are disconnected and there is no longer connectivity between all individuals.