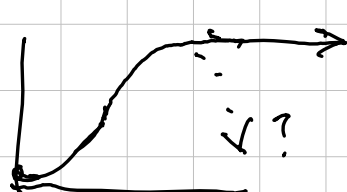


EPIDEMIC MODELS

microparasites .

Intensity-independent parasites.

- small
- many generations w/in a host
- reproduce quickly

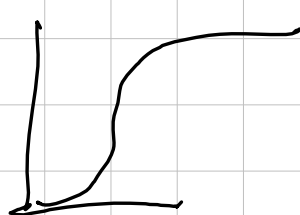


LOGISTIC model
exponential
→ plateau

DIVIDE the population by
infection status.

S, I

'simple
epidemic'



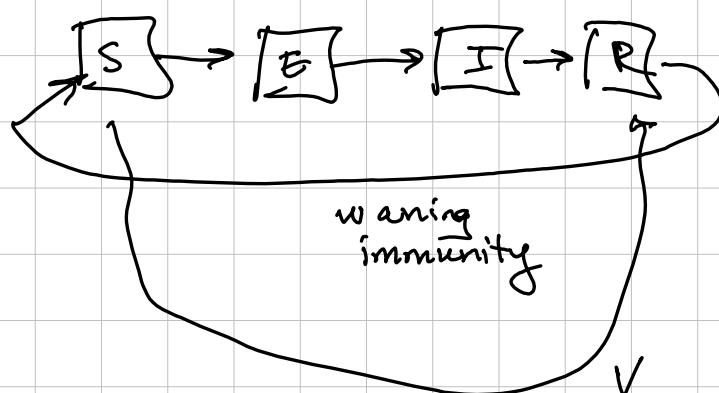
SIR

'removed'
'resistant'
'recovered'

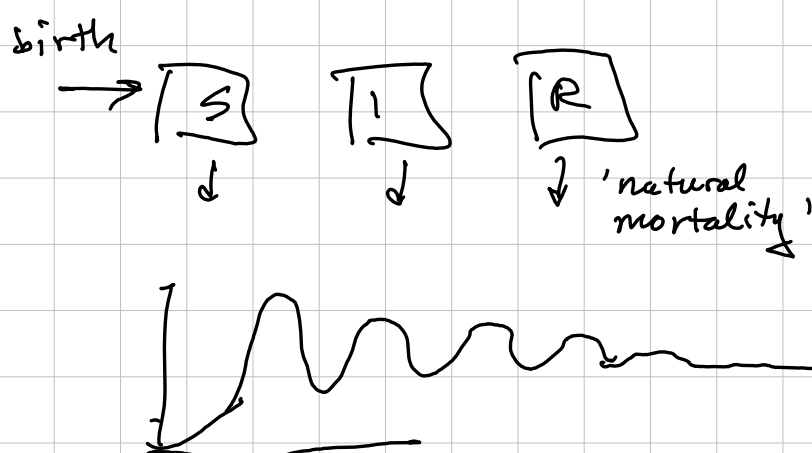


LOTS of variations.

latent ("exposed") period?



- vital dynamics .
(birth/death)



$$\frac{dS}{dt} = b - \beta SI - \mu S$$

$$\frac{dI}{dt} = + \beta SI - \mu I - \alpha I - \gamma I$$

$$\frac{dR}{dt} = \gamma I - \mu R$$

MALARIA (vector-borne diseases)

infected vector bites a susceptible host
→ infects host

uninfected vector

bites an infected host
becomes infected

