

Evolutionary Dynamics

Martin A. Nowak^{*}

martin_nowak@harvard.edu

I will give an overview of simple stochastic models of evolutionary dynamics. The topics of my talk include: constant selection on graphs; suppressors and amplifiers of selection; the isothermal theorem; games in finite populations, on graphs, in phenotype space and on sets; the 1/3 rule for games in well mixed populations and on graphs; the replicator equation on graphs; Antal's formula for n -strategy games in well-mixed populations; Tarnita's sigma theorem for structured populations and its extension to n -strategy games.

Further reading:

Lieberman E, C Hauert, MA Nowak (2005). Evolutionary dynamics on graphs. *Nature* 433: 312-316.

Antal T, A Traulsen, H Ohtsuki, CE Tarnita, MA Nowak (2009). Mutation–selection equilibrium in games with multiple strategies. *J theor Biol* 258: 614-622.

Nowak MA, CE Tarnita, T Antal (2010). Evolutionary dynamics in structured populations. *Phil Trans R Soc B* 365 (1537): 19-30.

^{*}Program for Evolutionary Dynamics, Harvard University, One Brattle Square, suite 6, Cambridge, MA 02138-3758, USA.