

## Unit 6: Sociopolitical cycles

### READINGS AND RESOURCES

- Wangersky PJ (1978) Lotka-Volterra population models. *Annual Review of Ecology and Systematics* 9(1): 189-218. <https://doi.org/10.1146/annurev.es.09.110178.001201>
- Turchin P (2003) The metaethnic frontier theory. In *Historical dynamics* (pp 50–77). Princeton University Press. <http://tuvalu.santafe.edu/files/gems/coevolutionV/collectivesolidarity.pdf>

### Further directions

- The evolution of contagion.
  - Goodnight C, Rauch E, Sayama H, De Aguiar MAM, Baranger M, Bar-Yam Y (2008) Evolution in spatial predator-prey models and the ‘prudent predator’: The inadequacy of steady-state organism fitness and the concept of individual and group selection. *Complexity* 13(5): 23–44. <https://doi.org/10.1002/cplx.20209>
- Getting more complicated with historical cycles.
  - Turchin P, Currie TE, Turner EAL, Gavrillets S (2013) War, space, and the evolution of Old World complex societies. *Proceedings of the National Academy of Sciences* 110: 16384–16389. <https://doi.org/10.1073/pnas.1308825110>
  - Turchin P (2016) *Ages of discord: A structural demographic analysis of American history*. Beresta Books. <https://peterturchin.com/ages-of-discord/>
- Growing artificial societies.
  - Epstein JM, Axtell R (1996) *Growing artificial societies*. MIT Press. <https://mitpress.mit.edu/books/growing-artificial-societies>
  - Epstein JM (2006) *Generative social science: Studies in agent-based computational modeling*. Princeton University Press. <https://press.princeton.edu/books/ebook/9781400842872/generative-social-science>
  - Crabtree SA, Bocinsky RK, Hooper PL, Ryan SC (2017) How to make a polity (in the central Mesa Verde region). *American Antiquity* 82: 71–95. <https://doi.org/10.1017/aaq.2016.18>
- Autocatalysis.
  - Kondo S, Mura T (2010) Reaction-diffusion model as a framework for understanding biological pattern formation. *Science* 329: 1616–1620. <https://doi.org/10.1126/science.1179047>
  - Jones J (2010) Characteristics of pattern formation and evolution in approximations of *Physarum* transport networks. *Artificial Life* 16: 127–153. <https://doi.org/10.1162/artl.2010.16.2.16202>

