

Biodiversity arising from evolutionary games between mutants

Arne Traulsen*

traulsen@evolbio.mpg.de

WEB: www.evolbio.mpg.de/~traulsen/

In evolutionary game theory, strategies are typically pre-defined and mutations occur between them. In this context, biodiversity refers to the emergence and stabilization of stable polymorphisms between these pre-defined strategies. In contrast, many population genetic models consider infinite allele models, in which each new mutation leads to a new type with fitness according to some distribution. How can this approach be adopted to capture evolutionary game dynamics? We assume that each new mutation leads to a new strategic type, increasing the size of the payoff, whereas extinction events decrease it. This model allows to investigate under which circumstances evolutionary game dynamics can lead to a dynamics that is distinct from the usual case of constant selection.

Huang & Traulsen, JTB (2010).

Huang, Haubold, Hauert & Traulsen, Nature Communications (2012).

Huang, Werner & Traulsen, BMC Evolutionary Biology (2012).

This is a joint work with Weini Huang, Bernhard Haubold, Christoph Hauert, and Benjamin Werner.

*Evolutionary Biology, Max Planck Institute, P.O. Box 165, 24302 Plön, GERMANY.