

# Supplementary material: A model adding the assumption of finite adult size

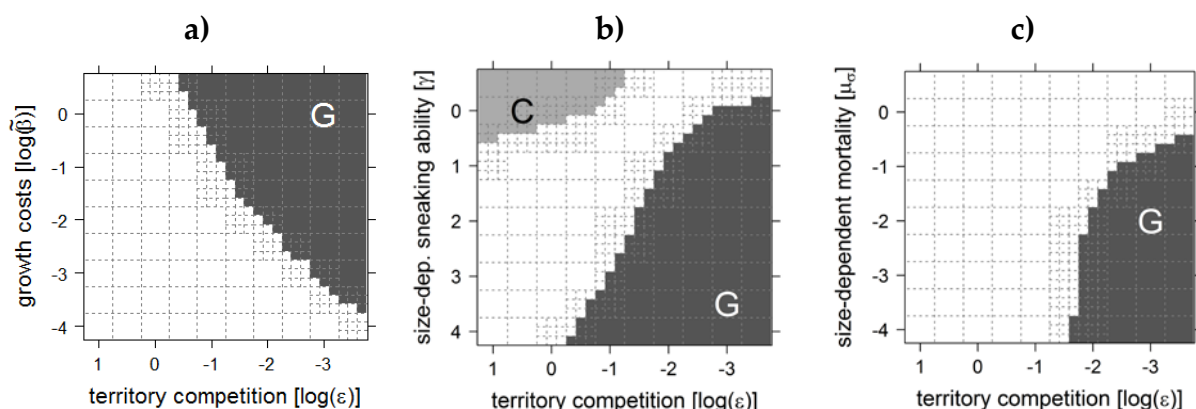
## Model assumptions

The model assumptions are identical to the indeterminate growth model, except that we include here an evolving parameter representing the size at which developing juveniles become sexual mature and stop growing. This precludes the expression of any size-dependent flexible tactics, as individuals will never change size when reproductively active. Nevertheless, it allows both for genetically fixed life-time tactics as well as a flexible usage of tactics with a size-independent reversible sequence (cf. Taborsky et al. 2008, p. 6). This means that males that have developed into a large bourgeois male can still use a parasitic tactic if unsuccessful in intra-sexual competition for territories or mates (see Brockmann 2008 for review of examples from insects).

## Results

Here we present results from three sets of simulations, reiterating the parameter settings given in Fig 1a, Fig 3a, and Fig. 3b in the main manuscript. The results are very similar to the results assuming indeterminate growth in these simulations, yet with two important differences. First, as the model assumption precludes any flexible size-dependent usage of tactics, the scope for flexible tactics to evolve is greatly reduced. In fact, this limits the expression of flexible tactics to situations where size-dependent sneaking ability is weak (or positive), and intra-sexual competition for territories is intense (see Fig. S1a). Under these conditions, bourgeois males unsuccessfully competing for territories will be small enough, so that they can instead successfully attempt a sneaking tactic. Second, the absence of a size-dependent flexible tactic allows tactics that are genetically fixed for life to evolve under a broader range of conditions (cf. Fig. S1, Fig. 1a, Fig. 3a,b).

**Figure S1:** Results of simulations carried out under identical parameter settings as in the main text corresponding to Fig. 1a, Fig. 3a, and Fig 3b, respectively, but assuming fixed adult size.



## References

- Brockmann, H. J. 2008. Alternative reproductive tactics in insects. Pages 177-223 in R. F. Oliveira, M. Taborsky, and H. J. Brockmann, eds. *Alternative reproductive tactics: an integrative approach*. Cambridge University Press, Cambridge.
- Taborsky, M., R. F. Oliveira, and H. J. Brockmann. 2008. The evolution of alternative reproductive tactics: concepts and questions. Pages 1-21 in R. F. Oliveira, M. Taborsky, and H. J. Brockmann, eds. *Alternative reproductive tactics: an integrative approach*. Cambridge University Press, Cambridge, UK.