

McClellan, D., Friman, V. P., Finn, A., Salzberg, L. I. and Donohue, I. 2019. Coping with multiple enemies: pairwise interactions do not predict evolutionary change in complex multitrophic communities. – Oikos doi: 10.1111/oik.06586

Appendix 1

Table A1. Results of one-sample *t*-tests to examine the difference between predicted and observed measurements of *B. subtilis* across experimental treatments as shown in Fig. 4a–c.

| | <i>Treatment</i> | <i>df</i> | <i>t</i> | <i>p</i> |
|--|-----------------------|-----------|----------|-------------------|
| <i>Density in microcosms</i> | Competitor + Parasite | 6 | -5.48 | 0.002 |
| | Competitor +Predator | 6 | -2.84 | 0.03 |
| | Predator + Parasite | 4 | -4.07 | 0.02 |
| | Full community | 5 | -14.25 | < 0.001 |
| <i>Competitive ability</i> | Competitor + Parasite | 4 | -17.58 | < 0.001 |
| | Competitor +Predator | 4 | -3.81 | 0.02 |
| | Predator + Parasite | 6 | -0.7 | 0.51 |
| | Full community | 5 | -5.88 | 0.002 |
| <i>Parasite resistance</i> | Competitor + Parasite | 6 | 0.25 | 0.81 |
| | Competitor +Predator | 5 | 2.47 | 0.056 |
| | Predator + Parasite | 6 | -6.56 | |
| | Full community | 5 | 0.65 | 0.54 |
| <i>Predator defense</i> | Competitor + Parasite | 6 | -0.32 | 0.76 |
| | Competitor +Predator | 5 | 2.9 | 0.03 |
| | Predator + Parasite | 6 | 0.62 | 0.55 |
| | Full community | 5 | -0.05 | 0.96 |
| <i>Maximum population density</i> | Competitor + Parasite | 6 | -2.49 | 0.05 |
| | Competitor +Predator | 5 | -1.26 | 0.26 |
| | Predator + Parasite | 5 | -3.39 | 0.02 |
| | Full community | 5 | -3.05 | 0.03 |
| <i>Maximum growth rate</i> | Competitor + Parasite | 6 | 2.92 | 0.03 |
| | Competitor +Predator | 5 | 0.65 | 0.55 |
| | Predator + Parasite | 5 | 2.088 | 0.09 |
| | Full community | 5 | 4.81 | 0.005 |

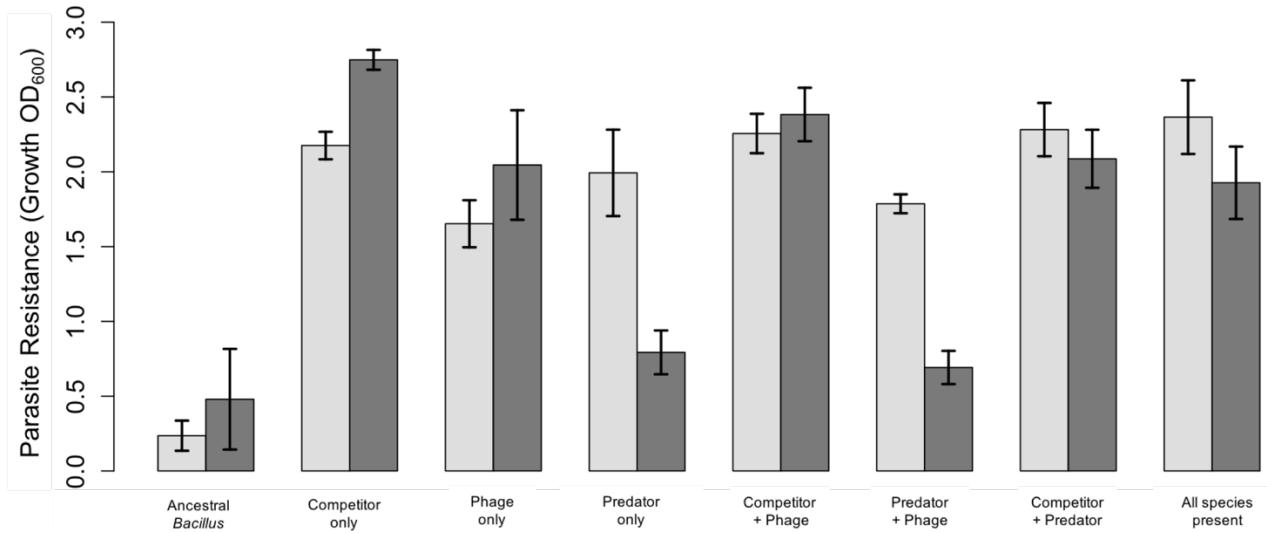


Figure A1. Growth of *B. subtilis* (measured as optical density) in the presence (dark grey bars) or absence (light grey) of the ancestral SPP1 phage on the final day of the experiment (day 10) in each experimental treatment. Phage resistance was measured as the the difference in growth between the two.

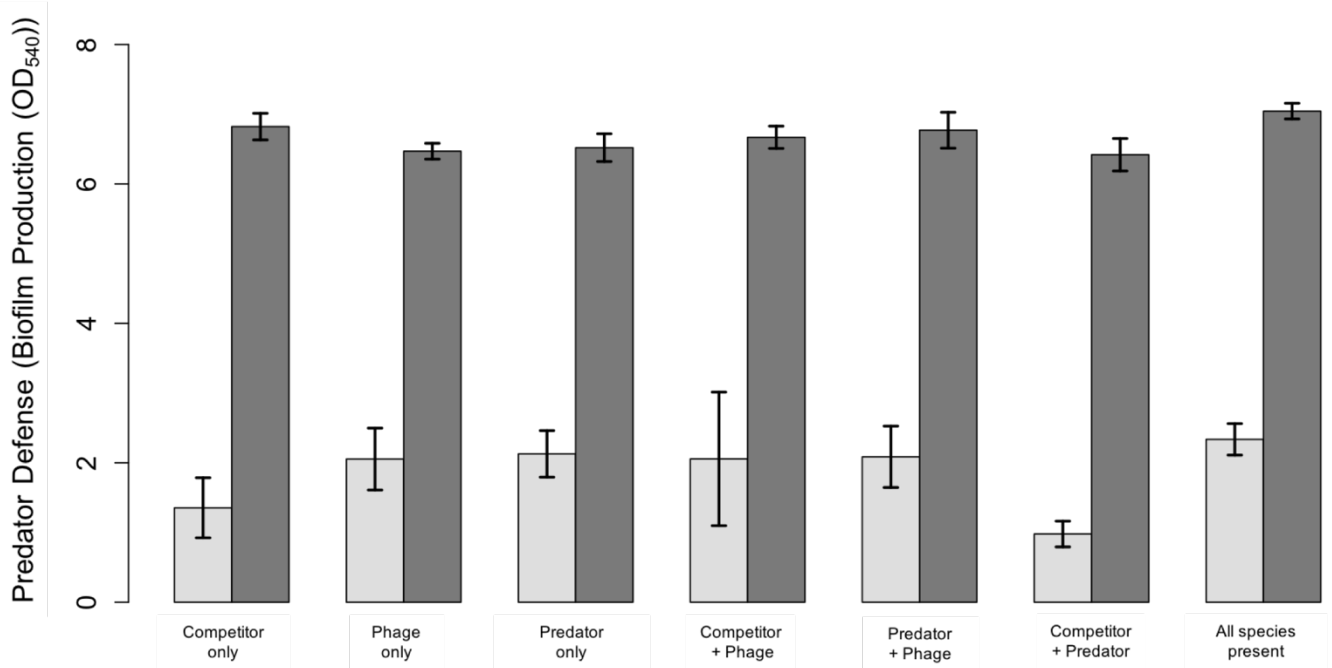


Figure A2. Biofilm production of *B. subtilis* in the presence (dark grey bars) and absence (light grey) of predator *P. caudatum*. Resistance to predation of *B. subtilis* isolates was measured as the difference in biofilm production (\log_{10} optical density) with and without the predator in from biofilm production on the final day of the experiment (day 10) for each treatment.

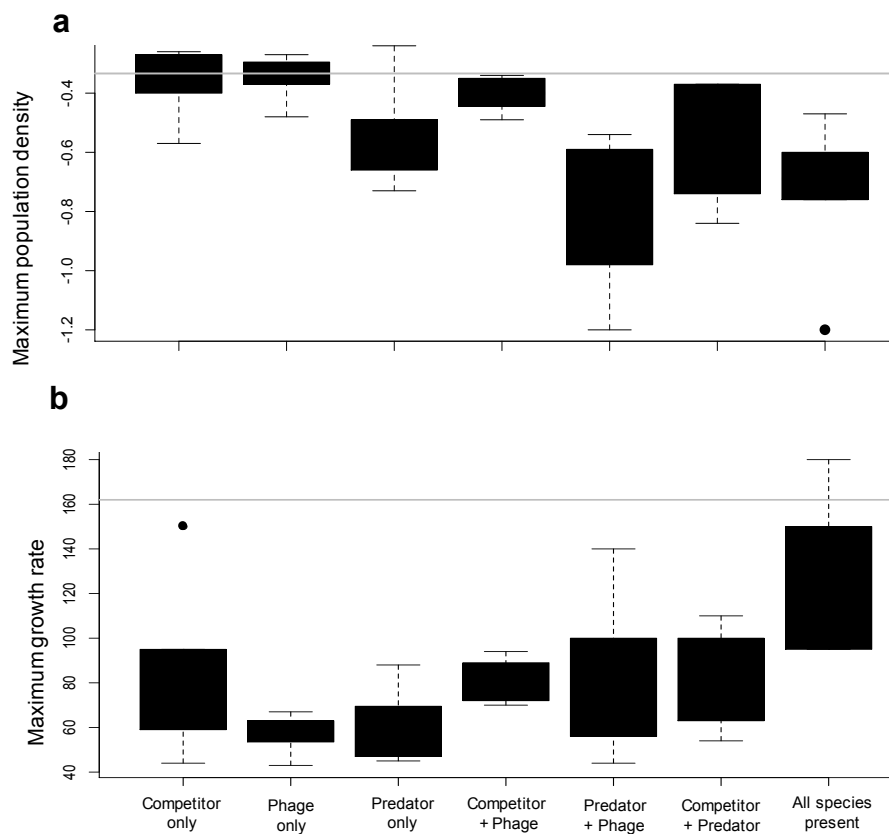


Figure A3. Growth parameters ($n = 7$) for evolved *B. subtilis* isolates in the microcosm medium over a 15-h period across treatments. Grey line depicts the mean values for the ancestral strain of *B. subtilis*. (a) Maximum population density achieved over 15 h. (b) Maximum growth rate of evolved isolates.