

## Text S1:

### The experimental setup

Figure S1 shows a still image of the experimental setup from a typical experiment with six prawns. Video S1 shows a video of the same experiment.

### Simulation results for all tested models

Figures S2-S12 show the results of simulating each of the models tested in this paper, using the maximum *a posteriori* parameters inferred from the data shown in Table 1. The quantitative quality-of-fit between these and the experimental data is shown in Figure 3.