

## Supplemental Materials to the manuscript “Cognition Evolves with the Emergence of Environmental Patchiness”

[Luthra, M., Izquierdo, E. J., & Todd, P. M. (in press). Cognition evolves with the emergence of environmental patchiness. *Artificial Life Conference Proceedings*.]

### 1) Aggregate patchiness and cognition values for Experiment 1

The actual paper displays cognition and patchiness values of only one simulation (refer Figure 3A and Figure 3C). Figure 1 and 2 display the aggregate values across five simulations.

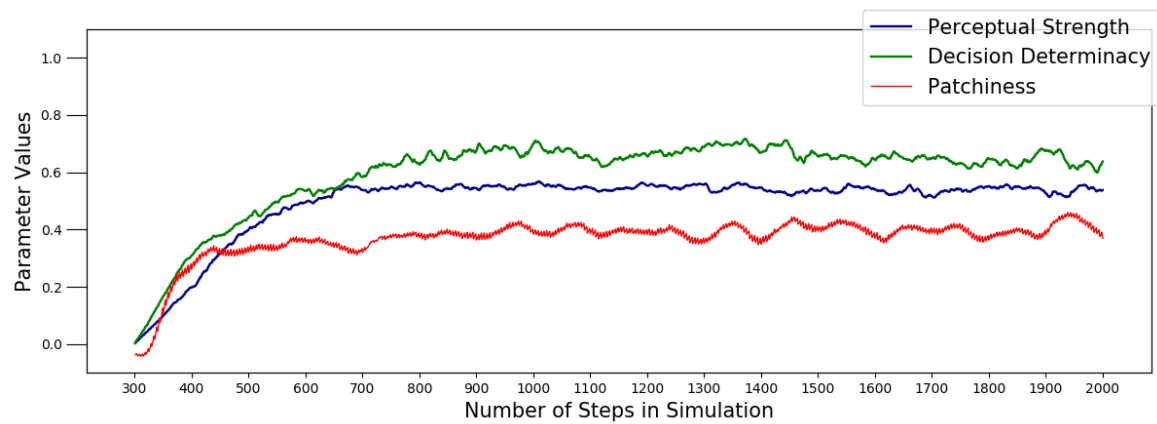


Figure 1: Cognition and patchiness values averaged across 5 simulations for evolving cognition condition.

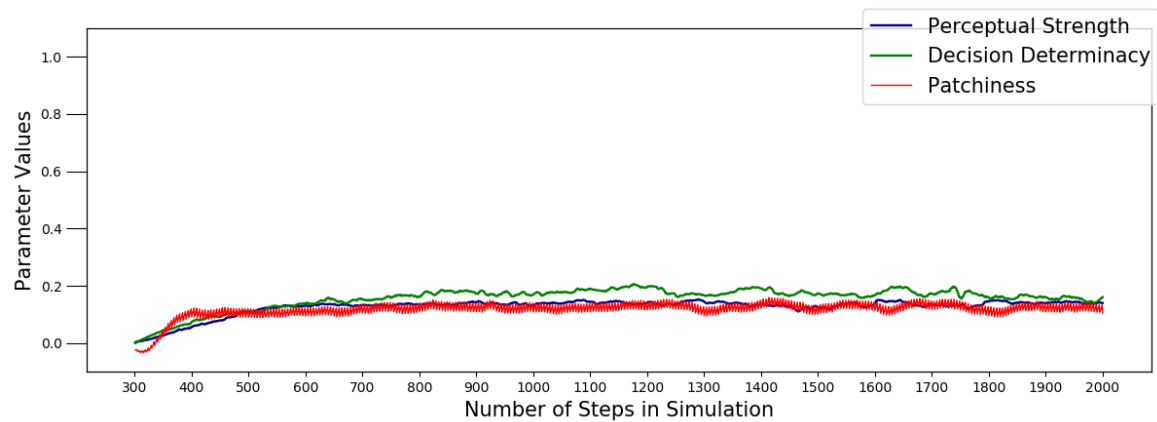
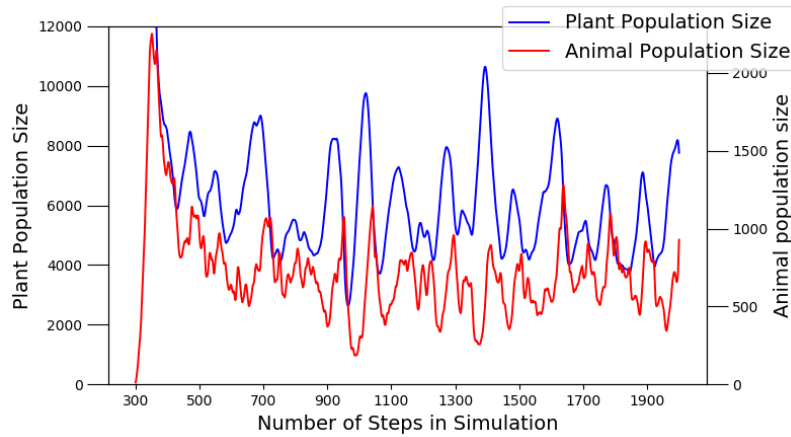


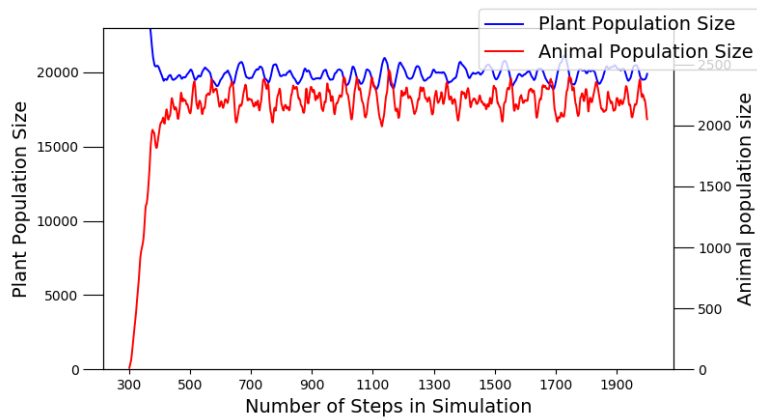
Figure 2: Cognition and patchiness values averaged across 5 simulations for restricted cognition condition.

## 2) Population sizes for Experiment 1

Figure 3 and 4 displays population sizes of plant and animal agents for Experiment 1. Results of only one simulation are displayed. As can be seen, population sizes display oscillating Lotka-Volterra patterns. Population sizes of restricted cognition condition (Figure 4) are more stable—perhaps the less exploitative behavior of animals lead to more stable population dynamics.



*Figure 3: Population sizes of plant and animal agents for evolving cognition condition*



*Figure 4: Population sizes of plant and animal agents for restricted cognition condition*