Stochasticity and Evolution in Food Webs

Giulio Dalla Riva
gvd16@uclive.ac.nz

Biomathematical Research Centre
University of Canterbury
gvdr.github.io

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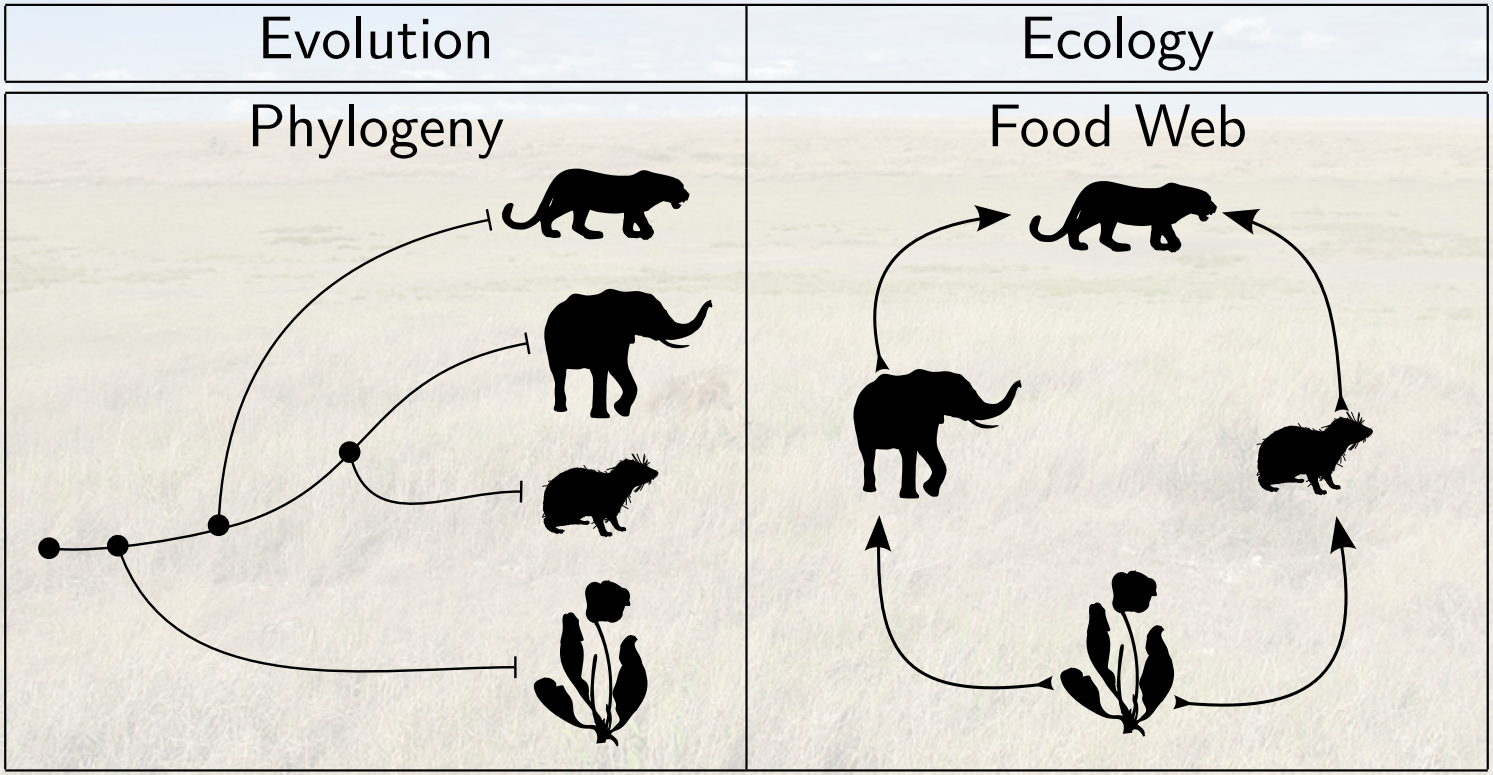
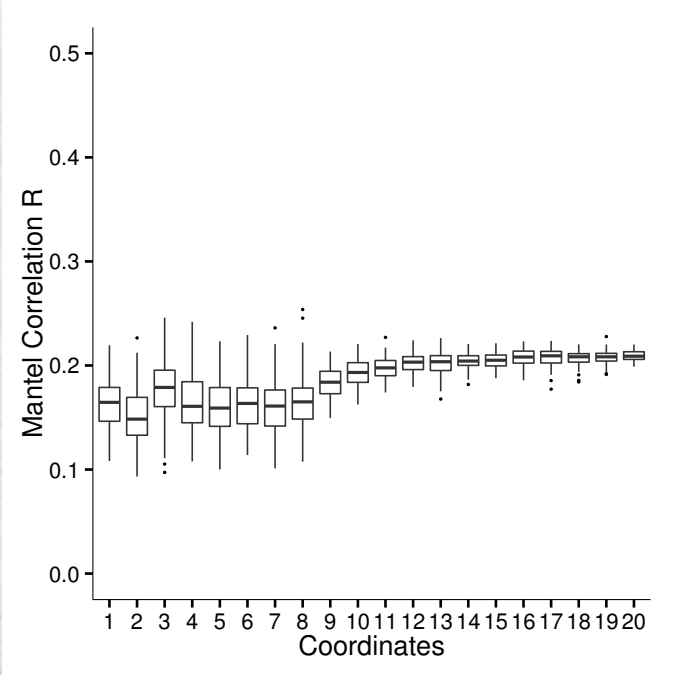
species ARE related

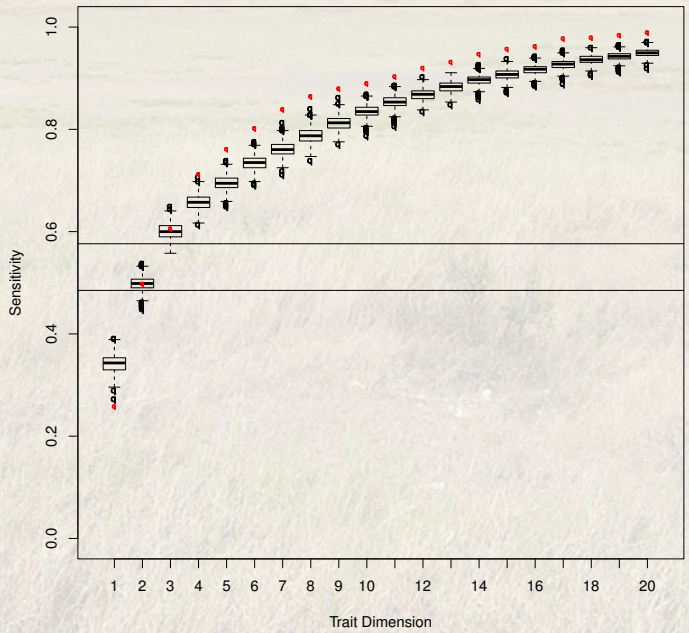


Evolution in/of Ecology

The stochastic backbones of Food Webs exhibit an Evolutionary signal.



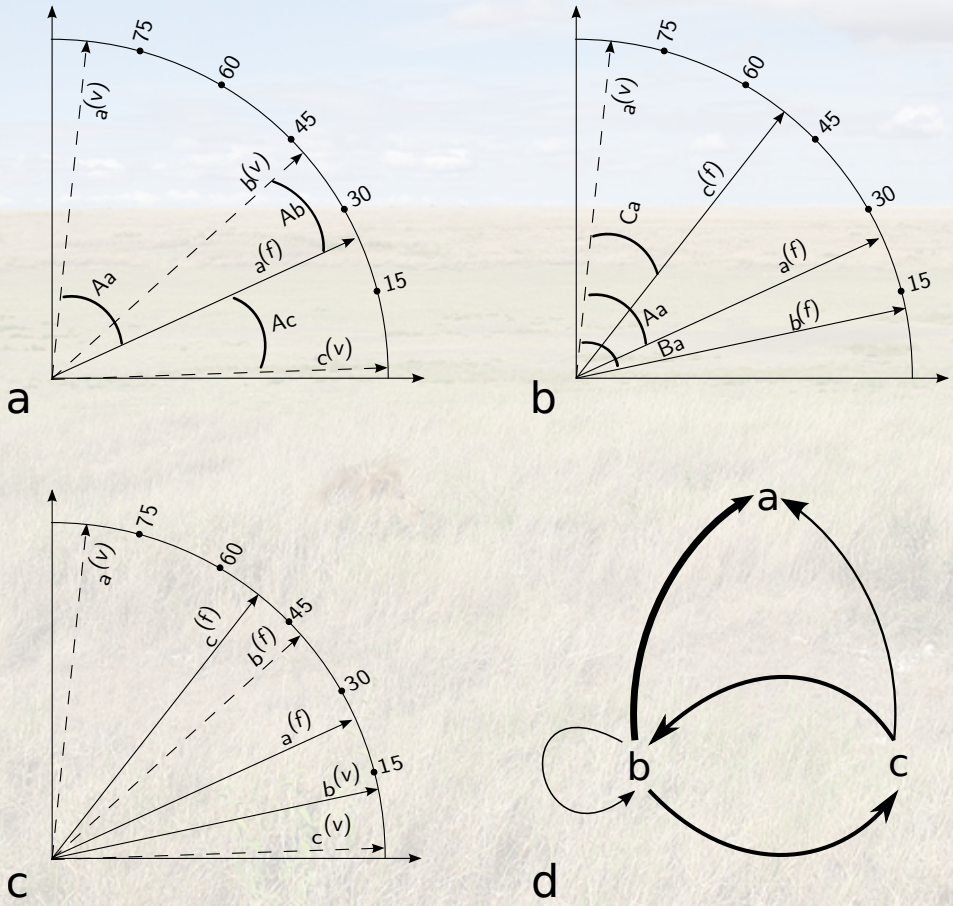
Phylogenetic signal



Model sensitivity

Food Webs embedded

- Random Dot Product Graphs



Food Webs embedded

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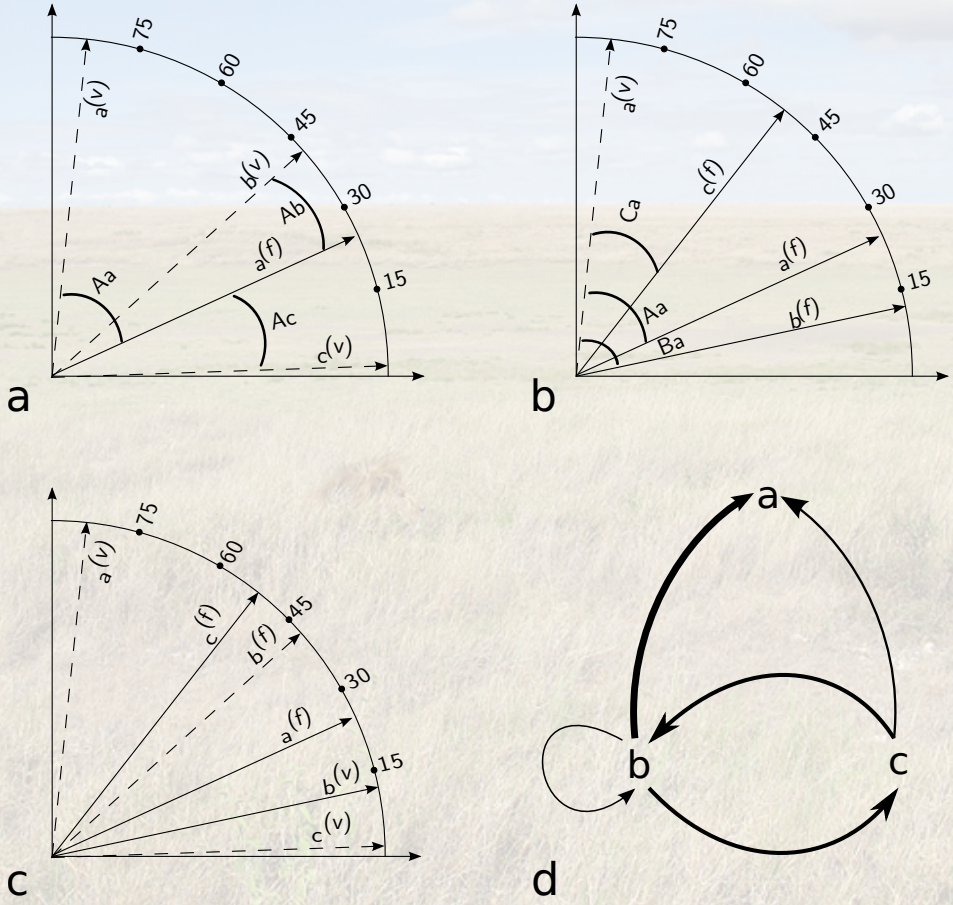

- Expected vs. Observed trait distribution

$$\mathrm{vcv}\left(\hat{x}|\tau, \text{model}\right) \text{ vs. } \mathrm{vcv}\left(x\right)$$

More questions (than answers)

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- $\therefore$ "fine wirings" may be deceiving
- What about the null model?

  Although species evolve and diversify in a complex network of species interactions, current models of diversification typically ignore species interactions. [These models] do not allow analysing the effect of species interactions on diversification.

  *Helen Morlon - Ecology Letters (2014) **17**: 508-525*

(Not a) Conclusion

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  Do evolutionary unique species play a keystone role in Food Webs?

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- Spoiler 1: Evolutionary distinctiveness vs. Web Centrality
  Do evolutionary unique species play a keystone role in Food Webs?
- Spoiler 2: An ecological informed model of species evolution maybe it's (almost) there.
  I am looking at you, Ornstein and Uhlenbecki ...

Thanks!

Joint work with Daniel B. Stouffer (University of Canterbury)

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By the way, I'm looking for a postdoc.
gvd16@uclive.ac.nz - gvdr.github.io