

# Stochasticity and Evolution in Food Webs

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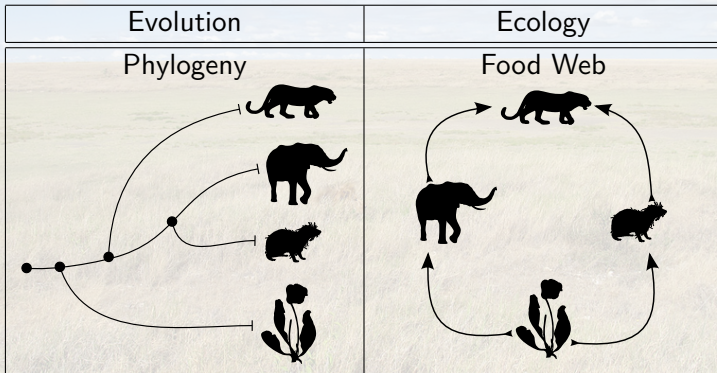
Biomathematical Research Centre

University of Canterbury

[gvdr.github.io](http://gvdr.github.io)

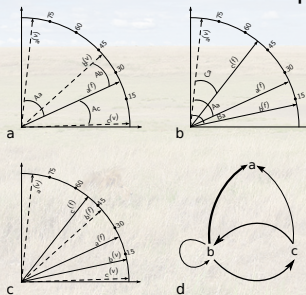
Granada Seminar June 16, 2015

# species ARE related

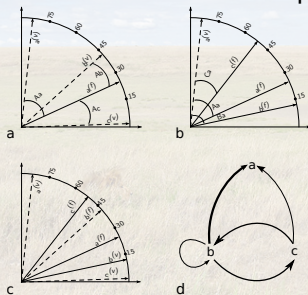


Evolution shaped the stochastic backbones of Food Webs  
[Two images: Serengeti and Weddell]

## • Random Dot Product Graphs



- Random Dot Product Graphs



- Phylogenetic vs. Observed traits

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



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- Evolutionary model is inadequate

no interaction effects

- Spoiler 1: Evolutionary distinctiveness vs. Web Centrality  
Do evolutionary unique species play a keystone role in Food Webs?

# (Not a) Conclusion

- 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.  
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