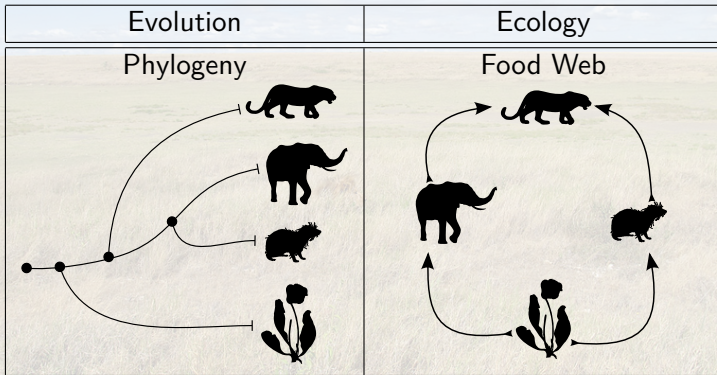# Stochasticity and Evolution in Food Webs

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Granada Seminar June 16, 2015

species ARE related
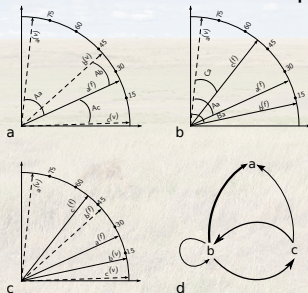

Evolution	Ecology
Phylogeny	Food Web

Evolution in/of Ecology

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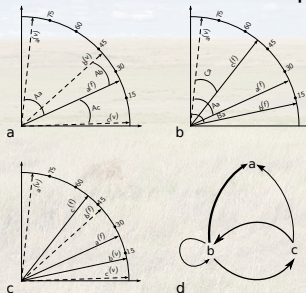
[Two images: Serengeti and Weddell]

Food Webs embedded

- Random Dot Product Graphs

Food Webs embedded

- Random Dot Product Graphs

- Phylogenetic vs. Observed traits

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

More questions (than answers)

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  p-values anybody?

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- $\therefore$ "fine wirings" may be deceiving

- Evolutionary model is inadequate

  no interaction effects

(Not a) Conclusion

- Spoiler 1: Evolutionary distinctiveness vs. Web Centrality
  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)

Many thanks to Mike Steel; Carey Priebe; A. Mooers', D.B. Stouffer's & J. Tylianakis's labs; ...

By the way, I'm looking for a postdoc.