

Death and taxa

time-invariant differences in mammal species duration

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Differences in species duration

Framework

- ▶ How do different species-level ecological traits relate to differences in species duration?
- ▶ How do time of origination and phylogenetic history contribute to differences in species duration?
- ▶ Does extinction risk vary with species duration?
- ▶ Is the current biodiversity crisis consistent with intensification of background or sometimes else (e.g. mass extinction)?

System and traits of interest

- ▶ Mammal species
 - ▶ ~ 2000
- ▶ North America
- ▶ Cenozoic
 - ▶ ~ 65 My
- ▶ duration in 2 My bins
- ▶ georeferenced occurrences
- ▶ Covariates of interest
 - ▶ bioprovince occupancy
 - ▶ body size
 - ▶ dietary category: carnivore, herbivore, insectivore, omnivore
 - ▶ locomotor category: arboreal, ground dwelling, scansorial
- ▶ Structure
 - ▶ origination cohort
 - ▶ phylogenetic position

Hypotheses

- ▶ increase body size, decrease reproductive rate, increase extinction risk.
- ▶ increase body size, increase geographic range, decrease extinction risk.
- ▶ no effect.

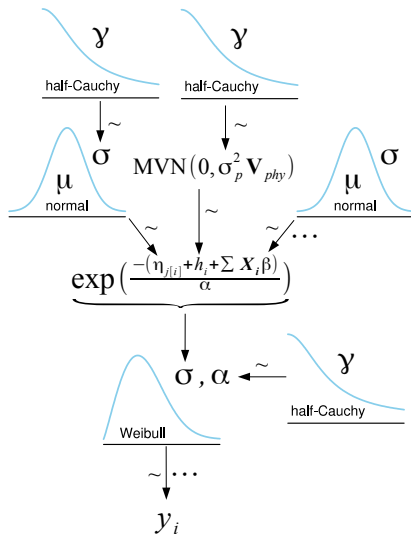
Dietary category

carnivory, herbivory, insectivory, omnivory

Locomotor category

arboreal, ground dwelling, scansorial

Bayesian survival model



Survival function

Covariate effects

Origination cohort effect

Variance partitioning coefficients

Current biodiversity crisis

Concerns

Conclusions

Posterior predictive checks: deviance residuals

Posterior predictive checks: point check