There are three intuitive ways to project and analyze the relationship between the species body-size distribution (BSD) and the individuals size distribution (ISD). We are primarily interested in these distributions and this relationship to tell whether

1. There are modes of energy use
2. Species richness is concentrated in these modes and absent in between the modes (modes are hyper-diverse)
3. Species richness reflects energy use
4. Species richness is decoupled from modes of energy use, such that modes are monocultures and there are low-abundance/low-energy species dispersed between the modes
5. There is no detectable non-random relationship between the distribution of species richness and energy use.

Complicating the problem is the potential distinctions between working with *abundance*, *biomass*, or *energy use* as the currency. Holling’s TDH should reflect energy use; other niche-based approaches are size-agnostic and might reflect biomass or abundance. They will scale together to some degree and it’s possible the same patterns hold for all of them.

A second complication is that mammals are probably constrained to some degree in their intraspecific size variation. This means the appropriate null model is not trivial.

Relatedly, if we consider the possibility of an overall energetic constraint on the total community energy use, some combinations of size-abundance relationships will be impossible.