**Simulating resource exploitation strategies in Iron Age to Hellenistic communities in  
southwest Anatolia**

* Create world
  + Create altitude map
  + Create settlements: preference for higher places
  + Create households
  + Create resources
    - Distribution
      * Forest: everywhere initially
      * Fertility: random 🡪 clustered
      * Clay: random 🡪 highly clustered + quality = function of altitude
  + Ticks = ½ year 🡪 alternate between agriculture and wood exploitation
* Every community calculates available food and resources

;; calculate demographic growth or decline?

* + If sufficient
    - Continue exploiting resources
  + Else deficit
    - Relocation? 🡪 fission
    - If not possible 🡪 fusion
    - If failed 🡪 collapse
* random initialisation new settlement
  + Outside of catchments of existing sites
  + At fixed intervals: probability for spawning
* Resource exploitation

Community as a whole 🡪 needs?

;; trade-offs between quality and distance? 🡪 energetic returns is key!

* + Wood
    - Household actors
    - Exploitation needs
    - Exploit resource: wait for renewal or become suitable for food/clay?
    - Rate of renewal?
  + Agriculture
    - Household actors
    - Established at sufficiently fertile plots closest to settlement
    - + expansion if needed
    - Fallow after set time + renewal
    - Dynamic fertility: Lotka Volterra cycles
  + Clay
    - Community actors
    - Look for suitable sources: quality as a function of available energetic potential (more potential 🡪 specific search for higher quality sources)
    - Exploit part of resource
    - Check if exhausted? 🡪 close resource or renewal
* Return to settlement
  + Household level: own subsistence + surplus 🡪 settlement
  + Calculate energetic returns
* Validate
  + “To validate our model, we will compare simulated patterns of exploitation and human impact with those of the environmental data from the Gravgaz valley”
    - Find way to calculate exploitation patterns across landscape
    - Woodland vs. non-woodland %
  + “The aim of this paper is to shed additional light onto the underlying mechanisms and strategies of resource exploitation in Iron Age to Hellenistic hill-top sites”
    - Record settlement patterns
    - How to implement different strategies?
      * Play with trade-offs between energetic costs and returns