12 ka to 2 ka transition
- food producing communities
- synchronous origins
- theory of origins
- “solitary genius”
- Childe’s “oasis”
- population pressure
- climate change
- social theories
- “readiness” v. accident
- domestication =
  - a species modified in ...whole or in part by human activity
- e, h, λ
- selection revisited
- co-evolution
  - who benefits?
- transformation of plant/animal life
- transformation of human life
  - health consequences...
  - population growth = very successful!

full transition in 10ka!

When?
Where?
How?
Why?

primarily coastal!!!
what happens when intensification takes place inland?

no middle ground?

dependence on agriculture in “traditional” pops
>40-50% of diet is domesticated plants/animals
**Sedentism**

- Sedentism = practice of establishing a permanent, year-round settlement

**Çatal Höyük, Turkey**

- 10.5-8.5 ka
- Large community size
- Permanent architecture

**Neolithic**

- Neolithic = period when people began to use ground stone tools, ceramics and began to cultivate plants

**Ceramics**

- Completely new technological concept
  - “Additive” vs. “Reductive”

**Beware!** Hunter-gatherers used ceramics too

**Origins of Agriculture: Early Theories**

- Synchronous, independent origins of agriculture

**SW Asia & East Asia**

- 12-8 ka

**Americas**

- 10-8 ka

**V. Gordon Childe’s “Oasis”**

- “Solitary genius”
Contemporary Theories: Population Pressure + Younger Dryas

- Many features in common with Childe’s “Oasis Theory”

Contemporary Theories: Feasting & Social Control

- Many features in common with “solitary genius”

Contemporary Theories: “readiness hypothesis” v. accidental experimentation

- Plant/animal domestication =
  - Modification of a species in whole or in part by human activity
    - $e =$
      - Increase energy returned from a unit of food
    - $h =$
      - Increase the rate at which food is encountered
    - $\lambda$ (lambda) =
      - Increase the rate at which food is encountered
- Organism no longer able to reproduce without human assistance

Hadza root digging
- **Modification** = enhance economic characteristics \((e, h, \lambda)\)

- **Plants**…
  - \(e\) → large seeds/fruit, small non-edible parts
  - \(h\) → seeds detach only with human intervention
  - \(\lambda\) → increase stand size/homogeneity, extend geographic range

- Chili peppers
  - \(\leftarrow\) wild
  - \(\rightarrow\) domesticated

- **Human activity** = intervention in life cycle and reproduction
  - Regulation of breeding (artificial selection)
  - Regulation of dispersal
  - Assisted reproductive technology in modern agro-business!
- Domestication and selection...
  - What is doing the selecting?

- Co-evolutionary relationship...
  - Who benefits?

Survivors

Guaranteed reproduction & protection from predators!

Co-evolutionary relationship: who benefits?

Neolithic decline in quality of life...
- Disease, poor nutrition, shorter life spans, warfare, less leisure time

Dental disease in an early Neolithic mandible (ouch!)

Intervention in life cycle and reproduction of plants/animals creates a dependence on humans, while human populations become dependent on domesticates (irreversible?)

Domesticates winning?
but agriculture still very successful
create new K