| archaeology & adaptation | feature = |
| physical objects & behavior | ecofact = |
| contexts | site = |
| systemic context = | region = |
| archaeological context = | life-history models |
| transformational processes | archaeological research |
| primary context = | finding sites |
| secondary context = | recovering data |
| | excavation |
| | reconstruction |
| | explanation |

| archaeology = explanation of (past) human behavior using physical remains |
| adaptation = characteristics of an organism evolved through natural selection leading to a “good fit” between the organism and the environment |
| archaeology of adaptation = explanation of (past) human adaptation using physical remains |

How do physical remains reflect behavior & and how are they related to adaptation?

Material Culture Traits, Survival & Inheritance
in principle, physical objects can be used to examine any aspect of human behavior

Because a behavior exists does not mean it necessarily is successful adaptation

archaeology & adaptation
physical objects & behavior
contexts
  - systemic context =
  - archaeological context =
  - transformational processes
    - primary context =
    - secondary context =
archaеological data
  - artifact =

feature =
ecofact =
site =
region =
life-history models
archaeological research
  - finding sites
  - recovering data
    - excavation
  - reconstruction
  - explanation

DYNAMIC
STATIC
systemic context =
- the function or response of a physical object within a dynamic system of behavior (cultural evolution in action)
  - ceramic vessel → used to cook or store foods in a particular in systemic context
  - red deer population → responds to predation pressure in systemic context
  - soil → responds to the frequency of farming and types of crops

archaeological context =
- the physical remains that have “exited” systemic context and become part of the geological record
  - thermal fracture of ceramic vessel or marrow extraction from a long bone → the final events in system context that led physical objects to “exit” systemic context

transformational process =
- agencies that “convert” physical objects from systemic to archaeological context
  - discard = intentional disposal of a portable material object...
  - abandonment = intentional disposal of a non-portable material object...
  - loss = unintentional disposal of a portable material object...

transformational process =
- agencies that “distort” the characteristics of physical objects once they are in archaeological context
  - water flow → alters the two-dimensional spatial location of physical remains
  - bioturbation → alters the three-dimensional position of physical remains
  - soil pH → acidic soils tend to dissolve organic remains such as bone and plant parts
What constitutes the archaeological record?

- artifacts =
- features =
- ecofacts =
- sites =
- regions =

Artifacts = portable objects whose form is modified in whole, or in part by human activity

primary context =
- locations of and associations between physical remains of past behavior have not been altered from those established when they “exited” systemic context
  - does not mean that everything is perfectly preserved
  - true primary context is very rare

secondary context =
- locations of and associations between physical remains of past behavior have been altered since they “exited” systemic context
  - most physical remains are to one degree or another in secondary context
  - cannot jump directly to a reconstruction of behavior
Features = objects modified in whole or in part by human behavior that cannot be removed from their place of discovery without being altered or destroyed.

Ecofacts = (a)biotic remains that are relevant to understanding human behavior:
- floral ecofacts = seeds, pollen
- faunal ecofacts = animal bones
- soils and sediments

Sites = Spatial clusters of artifacts, features and/or ecofacts (in all combinations).

Region = a spatially bounded area containing two or more archaeological sites:
- geographic = bounded by well-defined geographic features
- ecological = ... ecological characteristics
- cultural = ... cultural characteristics
■ process of archaeological research
  1. finding sites at surface and below the surface
  2. collection and recording of archaeological data
  3. reconstruction of the life-history of the physical remains
     – how have the materials been transformed?
     – how were the materials employed in systemic context (reflect behavior)?
  4. testing models of how and why humans behaved as they did in the past
     – adaptation? mal-adaptation?

■ a life-history model of physical objects

■ artifacts, features, sites and regions progress through as series of distinct stages

■ acquisition → transport → manufacture → use → maintenance → recycling → discard

acquisition = digging for clay

manufacture = kneading clay to remove bubbles

manufacture = forming pots

manufacture = mass open kiln firing
transport = bringing goods to market

use = cooking dinner

use = thermal failure of pot on fire
discard = abandon broken pot

different life-histories combine different stages
what do they all have in common?