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

• 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 = ???

• how do physical remains reflect behavior (and how are they related to adaptation)?

• no human behaviors are performed without the intimate involvement of physical objects!
• in principle, then, physical objects can be used to examine any aspect of human behavior

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• systemic context =
  – the function or response of a physical object within a dynamic system of behavior

• ceramic vessel → used to cook or store foods in a particular 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
  
  • broken ceramic vessel or skeletal element → a “trace” of the behaviors that led to their ultimately entering systemic context

• transformational process I =
  – 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 II =
  – 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

SYSTEMIC DYNAMIC

TRANSFORMATIONAL PROCESS

ARCHAEOLOGICAL RECONSTRUCTION

ARCHAEOLOGICAL STATIC
• 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

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

• 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 = biotic and abiotic remains that have been modified by or themselves influence 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
  – systemic context:
    • acquisition → transport → manufacture → use → maintenance → recycling → discard →
  – archaeological context:
    • discard → transformation → archaeological recovery

acquisition =
digging for clay

manufacture =
kneading clay to remove bubbles

transport =
bringing goods to market

use =
cooking dinner
use = thermal failure of pot on fire

discard = abandon broken pot

Different systemic life-histories combine different stages. What do they all have in common?