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HUNTER-GATHERER ARCHAEOBOTANY

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QUESTIONS to ask of Hunter-gatherers

- Seasonality and scheduling.
  - *Seasonality* is given by the environment: plants have seasonality
  - *Scheduling* is the strategic planning of activities by cultural groups: this involves choices, opportunities costs, division of labour

- Mobility and territoriality

- Broad spectrum versus specialized subsistence
  Optimal foraging and the diet breadth model

- Evidence for storage & processing technology
  = post-harvest intensification

  - Technological thresholds in processing and edibility

- Egalitarian (bands) vs. transegalitarion (tribes)/ "complex hunter-gatherers"

  - Foragers vs. Collectors [Binford 1980]
  - Simple (or generalized) vs. complex [Price & Brown 1985; also Brian Hayden 1990]

  - Immediate return vs. delayed return [Woodburn 1982; 1988]
    = Storing vs. non-storing [Tesart 1982]

- Evidence for food stress and change
  Shift towards second tier resources (need to develop some form of resource ranking;

- Can hunter-gatherers live in tropical rainforests (without trade with agriculturalists)?

- Agricultural precursors?

[Note: these tabular summaries have been cribbed from Michelle Wollstonecroft, an IoA PhD Student]

Binford's (1978) settlement subsistence model

FORAGERS	COLLECTORS
-residential mobility	-radiating mobility
-non-sedentary	-semi-permanent settlements
-opportunistic resource procurement strategies	-specialised resource procurement strategies
-simple social structure	-complex social structure
-practices don't overexploit resources	-occasionally overexploit resources
-no storage	-storage
	-surplus and accumulated wealth

Woodburn's (1982) immediate-return and-delayed return model

IMMEDIATE-RETURN	DELAYED-RETURN
-activities aimed towards present returns	-activities link past, present and future returns
-no valued assets, people are systematically disengaged from assets, from the potential in assets for creating dependency	-people hold rights over valued assets of some sort, which either represent a yield, a return for labour applied over time or, if not, are held and managed in a way which resembles and has similar social implications to delayed yields on labour
- simple, portable, utilitarian, easily acquired, replaceable tools	**ASSETS:** -valuable technical facilities used in production of food gradually over a period of months or years: *e.g.*, boats, nets, artificial weirs, stockades, traps -processed and stored food or materials usually in fixed dwellings. -management and tending of wild resources -assets in the form of rights held by men over their female kin who are then bestowed in marriage on other men

Main plant resource types

- Nuts
    - Processing: Deshelling
    - Sometimes: detxification
    - (leeching, roasting, boiling)

    - Highly seasonal
    - Highly storable
    - Long-lived: non-domesticable

- Tree fruits
    - Long-lived trees: non-domesticable

- Vine fruits
    - Processing:
    - Minimal, sometime cooking

    - Highly seasonal
    - Low storability, non-storable
    - vine fruits: domesticable
    - Non-staples (e.g. cucurbits)

- Tubers
    - Processing: Often detoxification
    - Roasting, boiling
    - Sometimes pounding & grinding

    - Less seasonal
    - Low storability/ non-storable
    - Some easily cultivated (corms, stolon tubers, some root tobers, rhizomes): potential staples (yams, taro, potatos, etc)
    - Some not easily cultivated (e.g. taproots, like carrots, beets, Swedes, radishes)

- Small seeds
    - Processing: Grinding, cooking
    - Lower yield per collection time than nuts
    - (often second tier resources)

    - Highly seasonal but reliable
    - High storability,
    - Short-lived/annual: domesticable
    - staples (e.g. cereals, pulses)

- Leafy greens, etc.

Approaches to Reconstructing Hunter-Gatherer Subsistence: Ethno-ecological Models and Archaeobotanical Evidence

Ecological Models

Availability

Based on:

- Climatic reconstruction and reconstruction of broad vegetational zones
  (based on pollen data, wood charcoal, faunal data other proxy climate indicators; relies on uniformitarian assumptions of vegetational zones)
- Detailed study of modern vegetation model past distribution of species within coarse zones of pollen-based reconstruction
- Probable local water regime and seasonality

→ Regional resource reconstruction

- Using above evidence in diachronic perspective to model pattern of plant migration and resource availability
  Note: community structure can change during periods of disequilibrium, e.g. different migration rates for herbs and trees

→ Relate to potential local setting: Site catchment analysis

- Autoecological studies of food-producing species, especially productivy and seasonality in different habitats, potential interannual variability
  [cross check with archaeobotanical evidence]
  Seasonality includes: seasons of availability, seasons of harvesting, seasons of site occupation

Ethnographic Analogies and Models

Cross-cultural regularities= Models (sensu Hillman),
≈ 'Middle Range Theory' (Sensu Binford)
≈'relational analogy' (Sensu Hodder (1982) *The Present Past.*)

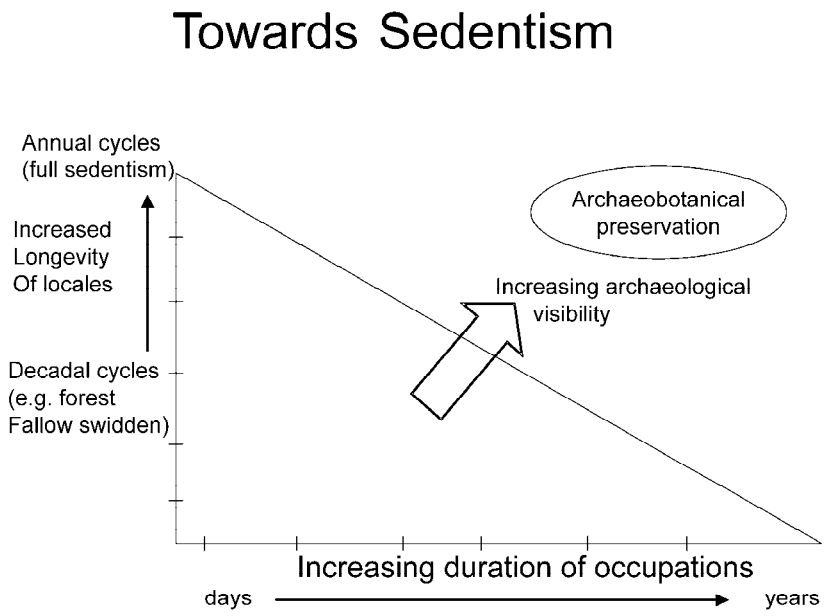
- **Analogies for food types used**
- **Analogies for food preferences**
- **Analogies for methods of processing**

'Ethno-ecological models' is the term often used for models that rely on both ethnographic anaologies/ models and ecological models in predicting likely prehistoric subsistence.

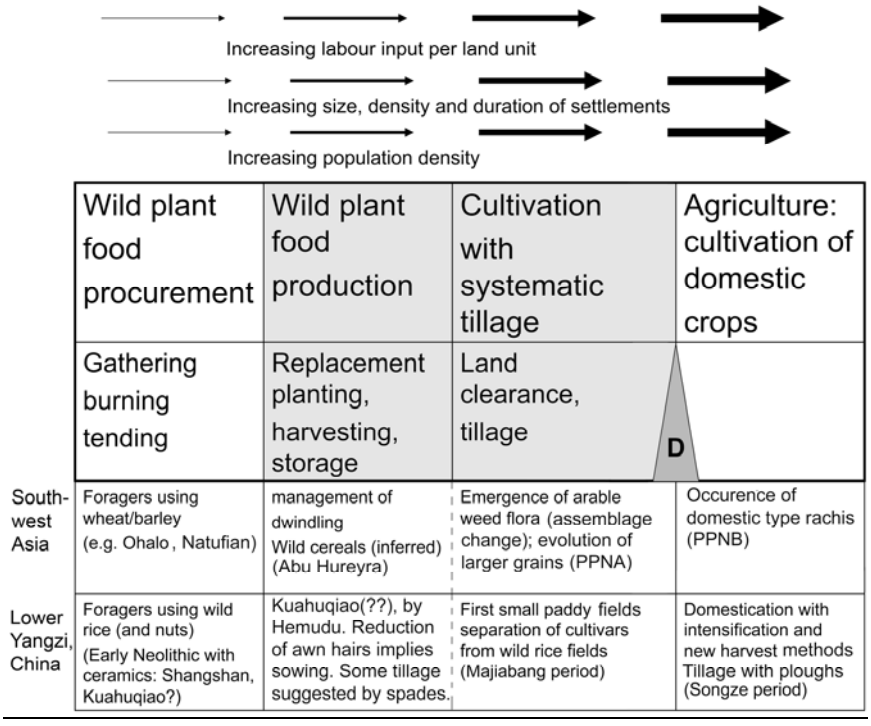
Archaeobotanical Evidence

- The ultimate check on the Ethno-ecological Models
- Identify food types present and relate to above models.
- Reconstruct 'missing foods' based on forms of archaeobotanical preservation, and potential resources that would not be preserved by such means.

The Problem of hunter-gatherer and non-sedetary archaeobotanical visibility



(from Fuller, D. Q. 2006. Silence before sedentism and the advent of cash-crops: A status report on early agriculture in South Asia from plant domestication to the development of political economies (with an excursus on the problem of semantic shift among millets and rice). In Osada, T. (eds.), Proceedings of the Pre-Symposium of RIHN and 7th ESCA Harvard- Kyoto Roundtable, Research Institute for Humanity and Nature, Kyoto, pp. 175-213)



The spectrum from foraging to farming, modified from David Harris (1989) in Harris & Hillman (1989) and Harris 1990 *Settling Down and Breaking Ground: Rethinking the Neolithic Revolution.*

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