Neanderthal symbolic behavior
- enhanced horizontal & vertical transmission?
- Neanderthal territories
- mortality — pathology
  - malnutrition / disease / trauma
- MP social security
  - costs v. benefits
  - how costly / beneficial?
- MP burials: criteria
- articulation; position; features; grave goods
- juveniles & males
- “mundane” grave goods
- most fossils NOT burials
- cultural landscape
- MP cannibalism
  - is cannibalism rare?
  - Krapina, Croatia
  - Moula-Guercy, France
- butchering v. ritual defleshing?
- cultural or a-cultural?

Life is dynamic...how do you remember what to do?

Symbolic behavior increases transmission fidelity = information received ‘exactly’ as sent
Symbol = conventional representation of abstract idea

Vertical transmission (gender biased)
Vertical oblique transmission (gender biased)
Horizontal transmission

Stone raw material transport
- W. Europe
  - small proportion of materials transported over >120 km
- C. Europe and E. Africa
  - a few materials transported over >300 km

Evidence of interactions between groups living in different TERRITORIES?
Symbolic behavior useful in interactions

Territory = an area that a group defends against other members of its own species
Territory <= home range
neanderthal camps
- cave & rock shelter-based
- special activity sites rare
  - hunting blinds, butchering stations, quarry sites
- preservation bias against open air sites?
- camps minimally modified
  - hearths are primary features
  - sometimes special tool production areas & evidence of structures
  - social activity focused around hearths
- a “locus” of social learning

neanderthal mortality
- small sample sizes
- preservational biases against young
- difficult to calculate age-specific mortality

maximum lifespan
- Neanderthals: 35-45 years
  - fewer grandparents…
- AMH: >50 years
  - more grandparents…
  “old man” from La Chappelle-aux-Saints age at death <40 years

malnutrition/disease/trauma
- hypoplastic enamel defects
  - 57% in sample of 669 teeth
  - arrested growth & development from disease and/or serious malnutrition
- healed fractures
  - ribs, limbs, cranium
- degenerative joint disease
  - osteoarthritis vertebral column
  - degeneration of joint surfaces resulting from wear and tear over many years
- periodontal diseases
  - abscesses, root exposure, tooth loss, bone resorption

cause of shorter lifespan & high incidence of m/d/trauma was great mechanical/dietary stress during life
- FR = survival*energy
- age-specific probabilities of survival lower for Neanderthals
- greater emphasis always placed on CR?

Klein: neanderthal technology & culture was not a sufficient buffer to protect bodies from extreme wear-and-tear!

Shanidar 1 crushed and healed left orbital margin

Kebara 2
**neanderthal social security**
- costs of keeping the infirm alive outweighed by the benefits gained through preserving their knowledge!!!
  - vertical oblique cultural transmission highly valued
- how costly? how long did the infirm live?

![Reconstruction of Neanderthal life at Shanidar, Iraq](image)

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**mortuary analysis**
1. articulated skeleton
2. position of skeleton
3. features
   - pits, mounds, stone alignments
4. grave goods

**intentional inhumation vs. ritual inhumation**
- inhumation can be a mundane functional behavior

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**neanderthal burials**
- dominated by
  - juveniles (<10 years of age)
  - males (16-30 and 41-50 years)
- females underrepresented
- pathology in 20% of males
- pathology in 28% of females
- most tightly flexed
- 75% associated with single feature
- “grave goods” in >50% of cases
  - stone tools, large animal bones, ocher, flower pollen

![Teshik-Tash, Uzbekistan infant burial surrounded by ring of ibex horns](image)

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**burial creates a cultural landscape**

![Dederiye, Syria, neanderthal child with Levallois points](image)
La Ferrassie “grave yard”

- critiques of neanderthal burials
  - most neanderthal fossils DO NOT occur as burials
  - burial was both rare & casual
  - no set burial program seen within/across regions
  - burial could be simply to dispose of rotting corpses at occupation sites
  - burial to avoid attracting hyenas & bears
  - burial in back of caves could occur naturally if predepositional disturbance is minimal
  - grave goods not “exceptional”
    - cannot distinguish stone tools and animal bones found “within” burial features from those found in the surrounding deposits

not nice to have as co-resident

- “It is clear from the archaeological record that meat – fat or muscle or other tissue – on the bone was not the only part of the body that was consumed. Braincases were broken open, and marrow was often removed from long bones. In …two examples, stone hammers split the upper arm bones lengthwise, exposing the marrow.”

Krapina, Croatia, OIS 5
• is cannibalism rare in nature?
  • not as rare as you would think…
  • carnivores often treat conspecifics killed in confrontations as a food source

• is cannibalism cultural?
  • could argue that cannibalism enhances cultural transmission by creating a bond between past and present

• butchering vs. ritual defleshing before burial
  • position of cutmarks suggest a little of both?

butchering animal carcasses for food leaves distinctive distribution of cutmarks on bones

Neanderthal cannibalism
Moula-Guercy, France ca. 100 ka

<table>
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<th>limbs</th>
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<tr>
<td>cutmark</td>
<td>46% (6/13)</td>
<td>38% (15/40)</td>
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<tr>
<td>percussion</td>
<td>100% (13/13)</td>
<td>100% (40/40)</td>
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• neanderthal adj 1: ill-mannered and coarse and contemptible in behavior or appearance [syn: boorish, loutish, oafish, swinish]