- Mousterian replacement
- Chatelperronian
- Szeletian, C. Europe
- Uluzzian, Italy
- The Neanderthal UP?
- Acculturation
  - borrowing OR transmission?
- UP transition outside of Europe

- Buran Kaya III, Crimea
  - fully modern, but NOT Aurignacian
- Siberia, Mongolia & NW China
  - “modern” core technology, MP tools
- Final evaluation of cumulative OOA
- different lines of evidence tracking different things…

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- Chronology of the Upper Paleolithic in Europe
- Appearance of Aurignacian “universally” means disappearance of Mousterian

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- Chatelperronian, (45?) 36-32 ka → Neanderthal UP

St. Cesaire neanderthal mix of MP-UP tools in Chatelperronian

Neanderthal/Chatelperronian ornaments from Arcy-sur-Cure!
Chronology of the Aurignacian

Aurignacian-like split- and bevel-based bone points associated with late neanderthals!

Vindija Cave G1, 29-28 ka

Vindija Cave G3, Neanderthal humerus

mix of MP-UP traits in Uluzzian, Italy

Both assumed to be Neanderthal UP, but no fossil associations WHY?

mix of MP-UP tools in Szeletian, C. Europe: “bifacial foliate” tradition
Acculturation = adoption and assimilation of an alien culture

BORROWING?

Acculturation \rightarrow suggests that cultures (i.e., transmission systems) are compatible

Implications for speciation models?

Mixing of deposits?

looking farther afield

Aurignaican ≠ MHB

- Buran Kaya III, Crimea
  - 36-30 ka
  - foliate bifaces & projectile points with ground bases
  - geometric microliths
  - bone tubes & pendants

- ABSOLUTELY NOTHING LIKE THE AURIGNACIAN
- Is it MHB? Yes!!!
Siberia 45 ka, Mongolia 33 ka, & NW China 25 ka
- UP core technology
- MP tool technology

Does Archaeology Support Cumulative OOA Model?

<table>
<thead>
<tr>
<th></th>
<th>Africa</th>
<th>Age</th>
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<tbody>
<tr>
<td>Blade tech</td>
<td>Kaphurin</td>
<td>250 ka</td>
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<td>Organic tech</td>
<td>Katanda</td>
<td>90 ka</td>
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<tr>
<td>Small-game</td>
<td>Klasies</td>
<td>118-70 ka</td>
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<td>Ochre use</td>
<td>Blombos</td>
<td>73 ka</td>
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<tr>
<td>Ornaments</td>
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<td>73 ka</td>
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<tr>
<td>Art</td>
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</table>

stone blades & modern human behavior

Aurignacian Upper Paleolithic blade

Kaphurin Formation, Lake Baringo, Kenya, 250 ka

pre-Upper Paleolithic blades outside Africa

Tabun Cave (Layer D), Israel, 250 ka
blade technology within reach of pre-modern hominids

organic points & modern human behavior

bone points from Katanda, Zaire, 90 ka

organic point technology within reach of pre-modern hominids

Neanderthal humerus fragment from Vindija G1, Croatia
small game exploitation in S. Africa

- Klasies River Mouth, ca. 118 ka
- Herolds Bay Cave, >80 ka
- Die Kelders, ca. 70 ka
- primarily limpets & some birds

% small game inland assemblages from the Levant

<table>
<thead>
<tr>
<th>Stiner et al. 2000</th>
<th>0</th>
<th>20</th>
<th>40</th>
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<td>early Kebaran</td>
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<tr>
<td>pre-Kebaran</td>
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<tr>
<td>Aurignacian</td>
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<tr>
<td>MP 200-349 ka</td>
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<td>MP 350-419 ka</td>
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<td>MP 420-469 ka</td>
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<td>MP 470-539 ka</td>
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tortoise, lizards, partridge, hare

diverse foraging strategies within reach of pre-modern hominids

Blombos, S. Africa, 73 ka

Ochre and Beads
25
ground ochre slab, Qafzeh, Israel, 100 ka
Hovers et al. 2003. *Current Anthropology*

26
ornaments from the Chatelperronian at Arcy-sur-Cure, France, 34 ka, directly associated with Neanderthal fossils

27
Upper Paleolithic art diagnostic of modern human behavior?

28
evaluating the models

<table>
<thead>
<tr>
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<td>Qafzeh, Cueva Morin</td>
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<tr>
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<td>Arcy-sur-Cure</td>
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<tr>
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<td>Vogelherd</td>
<td>???</td>
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</table>
The big problem!!!!

- genetic and anatomical evidence largely support an “Out-of-Africa” model of AMH origins

- archaeological evidence strongly contradicts an “Out-of-Africa” model of modern behavioral origins

- there is no solution to this problem yet…