Social Implications of Large-Scale Demographic Change during the Early Archaic Period in the Southeast

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Presented at the 73rd Southeastern Archaeological Conference, Athens, GA, October 28, 2016
Spoiler alert: I’m going to play the “in progress” card
An abandonment of the lower Southeast during the Early Archaic?

• The case for abandonment
• Why and how do hunter-gatherers abandon a landscape?
• Some thoughts about social implications in this case
• Ways forward
Projectile point chronology

Bifurcate/Lobed (Macorkle, Lecroy, Stanly, etc.)

Kirk Corner Notched Cluster

<table>
<thead>
<tr>
<th>Time (cal YBP)</th>
<th>RCYBP</th>
</tr>
</thead>
<tbody>
<tr>
<td>8000 - 8985</td>
<td>12,930</td>
</tr>
<tr>
<td>9000 - 11,400</td>
<td>12,080</td>
</tr>
<tr>
<td>10,000 - 11,400</td>
<td>12,680</td>
</tr>
<tr>
<td>10,300 - 11,400</td>
<td>12,800</td>
</tr>
<tr>
<td>10,000 - 11,400</td>
<td>10,200</td>
</tr>
</tbody>
</table>

Projectile Point Types

- Great Lakes Western
- Great Lakes Eastern
- Ohio Valley N. of River
- Ohio Valley S. of River
- Central Miss. Valley

- Hardin Barbed (?)
- Thebes Cluster
- Late Plano (?)
- Early Archaic Side-Notched
- Agate Basin/Hi-Lo
  - Hi-Lo
  - Folsom
  - Holoome
  - Barnes
  - Dalton Cluster
- Clovis and Clovis-like Early Fluted Points

- Kirk Corner Notched Cluster
  - Kirk Corner Notched Cluster

- Bifurcate/Lobed (Macorkle, Lecroy, Stanly, etc.)
A definition of society

"Societies are **groups of people defined by persistent social interaction**. While the characteristics of the late Pleistocene and early Holocene hunter-gatherer societies of the Southeast certainly varied, archaeological data generally suggest that these societies were often geographically extensive and structurally complex.”

The Case for Abandonment: Did it Happen?
The case for abandonment: Florida

1. Radiocarbon gap: A dearth of C14 dates between 9000-8000 RCYBP

2. Technological discontinuity: Early Archaic Kirk points (Bolen) in Florida do not appear to be ancestral to “Kirk Serrated”

3. Stratigraphic discontinuity: There are no stratified sites that demonstrate continuity of technology/occupation

- Data from “The Early Archaic to Middle Archaic Transition in Florida: An Argument for Discontinuity” (Michael Faught and James Waggoner, Jr., 2012, The Florida Anthropologist 65(3):153-176)
- Point images from Florida Museum of Natural History, Bullen Projectile Point Type Collection
The case for abandonment: Georgia and the Carolinas

Figure 2. The incidence of terminal Early Archaic bifurcate projectile points, in relation to earlier and later forms, at four localities in Georgia and South Carolina. (Sources: Anderson and Joseph 1986:25; Ledbetter et al. 1987:251; O'Neil 1983:114; Sassaman et al. 1989:169).

Figure 3. The distribution of bifurcate points in North and South Carolina. (Sources: Charles 1986, n.d., Davis and Daniel 1990).

Images modified from “The Bifurcate Tradition in the South Atlantic Region” (David Anderson, 1991, Journal of Middle Atlantic Archaeology 7:91-106)
Another data point: the Larry Strong Collection

- Allendale County, South Carolina
- 4000-5000 Early and Middle Archaic points

![Graph showing distribution of bifurcate points in North and South Carolina](image)

Figure 3. The distribution of bifurcate points in North and South Carolina. (Sources: Charles 1986, n.d., Davis and Daniel 1990.)
A large scale appraisal of the “radiocarbon gap”

- ~9,500 radiocarbon dates so far
A conspicuous dearth of 9000-7000 RCYBP dates in the deep south
Far fewer than expected 9000-7000 RCBYP dates south of 3600000 N

<table>
<thead>
<tr>
<th></th>
<th>pre-9000 RCBYP</th>
<th>9000-7000 RCBYP</th>
<th>post-7000 RCBYP</th>
</tr>
</thead>
<tbody>
<tr>
<td>N of 3600000</td>
<td>256</td>
<td>377</td>
<td>6567</td>
</tr>
<tr>
<td></td>
<td>245.00 (0.49)</td>
<td>308.15 (15.38)</td>
<td>6646.86 (0.96)</td>
</tr>
<tr>
<td>S of 3600000</td>
<td>66</td>
<td>28</td>
<td>2169</td>
</tr>
<tr>
<td></td>
<td>77.00 (1.57)</td>
<td>96.85 (48.95)</td>
<td>2089.14 (3.05)</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 70.410, \quad df = 2, \quad \chi^2/df = 35.21, \quad P(\chi^2 > 70.410) = 0.0000 \]

expected values are displayed in *italics*
individual \( \chi^2 \) values are displayed in (parentheses)
Distribution: north vs. south

South: a trough

North: a swell

UTM 3600000

9000-7000 RCYBP
Are we seeing an abandonment/marginalization of the Atlantic Plain?
Fewer than expected 9000-7000 RCYBP dates in Atlantic Plain

<table>
<thead>
<tr>
<th></th>
<th>pre-9000 RCYBP</th>
<th>9000-7000 RCYBP</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantic Plain</td>
<td>110 (86.14)</td>
<td>68 (91.86)</td>
<td>178</td>
</tr>
<tr>
<td>Appalachian Highlands</td>
<td>140 (159.22)</td>
<td>189 (169.78)</td>
<td>329</td>
</tr>
<tr>
<td>Interior Plains</td>
<td>112 (116.63)</td>
<td>129 (124.37)</td>
<td>241</td>
</tr>
<tr>
<td></td>
<td>362</td>
<td>386</td>
<td>748</td>
</tr>
</tbody>
</table>

\[
\chi^2 = 17.655, \quad df = 2, \quad \chi^2/df = 8.83, \quad P(\chi^2 > 17.655) = 0.0001
\]

Expected values are displayed in *italics*
Individual \(\chi^2\) values are displayed in (parentheses)
Post-Kirk projectile point styles absent(?) from deep south?

Point distributions following Justice (1987)
The case for abandonment seems compelling, so far
Why and How do Hunter-Gatherers Abandon a Landscape?
First: a nod to the “why” question

• It appears as though late Early Archaic peoples abandoned/marginalized a particular environmental zone (the Atlantic Plain – at least the southern part)

• That suggests environment is part of the equation
Significant vegetation changes ca. 9500 RCYBP

“After 9550 +/- 40 yr . . . a sharp decline of Carya [Hickory], Fagus, and Ostrya-Carpinus takes place in the pollen diagram. There is a new increase in pine, . . . About 7000 yr. BP, . . . pine again increases at the expense of oak, and a forest essentially like the modern forest was established.”

- Watts 1980:194
“Oak trees are the most important group of mast species for wildlife. In a good year, more than a quarter ton of acorns per acre can cover our forest floor, and they can be the most important food to carry many species of wildlife through the winter.”

Second: the “how” question

Populations appear to have shifted their distribution after 9000 RCYBP . . . but how did that happen?

Several possibilities
• Range contraction
• Population migration (two kinds?)
• Population reduction
Range contraction:
population stays the same, range decreases within space

Filled landscape

50% reduction in range = % of landscape abandoned

Abandoned
Population migration (1): population simultaneously shifts to different space
That’s a “billiard ball” model (solid)
Population migration (2): population shifts into different space through expansion and attrition
I think of that as a “tide” model (fluid)
Population reduction:
range decreases through loss of population rather than transfer
Cut to the chase:
I think a range contraction (perhaps with some northward expansion/colonization) is perhaps the most likely scenario

<table>
<thead>
<tr>
<th>Abandonment Scenario</th>
<th>Overall population</th>
<th>Total space occupied</th>
<th>“Front end” process</th>
<th>“Back end” process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range contraction</td>
<td>Same (or higher)</td>
<td>Lower</td>
<td>-</td>
<td>Attrition</td>
</tr>
<tr>
<td>Migration (simultaneous)</td>
<td>Same</td>
<td>Same</td>
<td>Colonization</td>
<td>Outward migration</td>
</tr>
<tr>
<td>Migration (demographic expansion/attrition)</td>
<td>Same</td>
<td>Same</td>
<td>Colonization/expansion</td>
<td>Attrition</td>
</tr>
<tr>
<td>Population reduction</td>
<td>Lower</td>
<td>Lower</td>
<td>Attrition (or none)</td>
<td>Attrition</td>
</tr>
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</table>
So what?
The Social Implications of Abandonment

How did abandonment articulate with changes at the various levels of Early Archaic societies?

System Scale

- Social System
- “Bands”

Human Scale

- Foraging Groups
- Households
- Persons
The process of abandonment in the context of long-term patterns of land use

“When we first move into a valley everything is good, people want visitors, people want to see friends, people want to share, but as time goes on, things get used up and the place gets full of flies, then people start to fight. When that happens it’s time to move to a place where nobody has lived for a long time.”

• A Nunamiut man, quoted in Binford (1983:38)
Movement is a fundamental, but you still have to determine where to go next

Maybe the simplest case is that “abandonment” emerges from the group- and family-level choices about where to go next.
Ultimately, mobility is a “human-level” behavior that is structured by social networks.
If it’s important to maintain external contacts (and it is), populations will contact rather than atomize.

Contraction would tend to be oriented toward more productive environments.

This popped up when I Googled “atomize”
If the Atlantic Plain is abandoned, total area occupied drops by 33 percent.

- **Interior Plains**: 669,349 square km
- **Appalachian Highlands**: 887,906 square km
- **Atlantic Plain**: 759,328 square km
Presume a 200 km radius of residential mobility for a Kirk “band”

High residential mobility in Kirk societies

~126,000 square km per “band”

A total of 18 “bands” occupying the three regions
Assuming population stays the same, mobility has to change if the occupied area shrinks.

A total of 18 “bands” occupying all three regions.

If occupied area shrinks by a third, mobility radius has to be reduced by 17%.

A total of 18 “bands” occupying two regions.
Reductions in the scale of mobility would have had ramifications up and down the levels of society

• Distance and frequency of residential moves
  • Some combination of fewer moves (e.g., 43 moves/year instead of 52 moves/year) or shorter moves

• Mobility strategies
  • **Strategic choices** about residential vs. logistical mobility (cheaper to bring food to people in some circumstances?)

• Long-distance interactions
  • Closer proximity on the landscape would make it easier to maintain long-distance relationships through face-to-face interaction → **less gifting, less long-distance marriage** required for maintaining sufficient social fabric
Changes in mobility would have also affected roles and responsibilities within families:

- Production (subsistence . . . increase in diet breadth)
- Reproduction (family size and structure)
- Politics ("internal" vs. "external" relationships)
There would have been feedbacks between different levels of Early Archaic societies.
Both archaeological and theoretical components required
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Basic Data</th>
<th>Expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The <strong>Atlantic Plain was largely abandoned</strong> during the period 9000-7000 RCYBP</td>
<td>• Radiocarbon • Projectile point distributions • Stratigraphic sequences</td>
<td>Broad pattern of lack of evidence for intensive occupation</td>
</tr>
<tr>
<td>Abandonment coincided with <strong>environmental change</strong> that lowered the attractiveness of the Atlantic Plain</td>
<td>• Environmental data</td>
<td>9000-7000 RCYBP Atlantic Plain environments were significantly less productive than pre-9000 RCYBP and those of other regions (Interior Plains, Appalachian Highlands)</td>
</tr>
<tr>
<td>Abandonment followed by a significant <strong>reduction in the scale of mobility</strong></td>
<td>• Lithic raw material data</td>
<td>Bifurcate points will show significantly lower mean transport distances</td>
</tr>
<tr>
<td>Maintenance of social fabric <strong>less dependent on gift-giving</strong></td>
<td>• Gift items (lithic and non-lithic)</td>
<td>Post-Kirk indicators of long-distance gift exchange will be reduced or absent</td>
</tr>
<tr>
<td>Maintenance of social fabric <strong>less dependent on long-distance marriage and other personal movements</strong></td>
<td>• Patterns of variability in material culture</td>
<td>More regionalization of projectile point styles</td>
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**Early Paleoindian**

**Late Paleoindian (Dalton/Hi-Lo)**

**Early Archaic (Thebes)**

**Early Archaic (Kirk)**

**Early Archaic (Bifurcate)**
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Marine shell beads from Modoc Rock Shelter (Randolph County, Illinois)

Tomak 1979 (*PIAS* 88:62-69)

Marine shell beads from the Jerger Site (Daviess County, Indiana)
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<td>Maintenance of social fabric less dependent on long-distance marriage and other personal movements</td>
<td>• Patterns of variability in material culture</td>
<td>More spatial patterning in projectile point styles</td>
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**Social networks, social learning, and patterns of stylistic variability**
Goal: understand spatial and temporal components of variability
The final card I will play: the Lloyd Williams card

“Retreat? Hell, we just got here.”
Abandonment
Thank you

Archaeological Research Trust, SCIAA, Al Goodyear, David Anderson, Shane Miller, CARD, Ken Sassaman