



# Cahokia in a global context



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$$\begin{aligned}\frac{\partial f}{\partial x} &= 0 \Rightarrow y = 0 \\ 1 - y - 2x &= 0 \\ \Rightarrow x &= \frac{1}{2}(1 - y) \\ \frac{\partial f}{\partial y} &= 0 \Rightarrow x = 0 \text{ or } \\ &= \frac{1}{2}(1 - y)\end{aligned}$$

# Outline

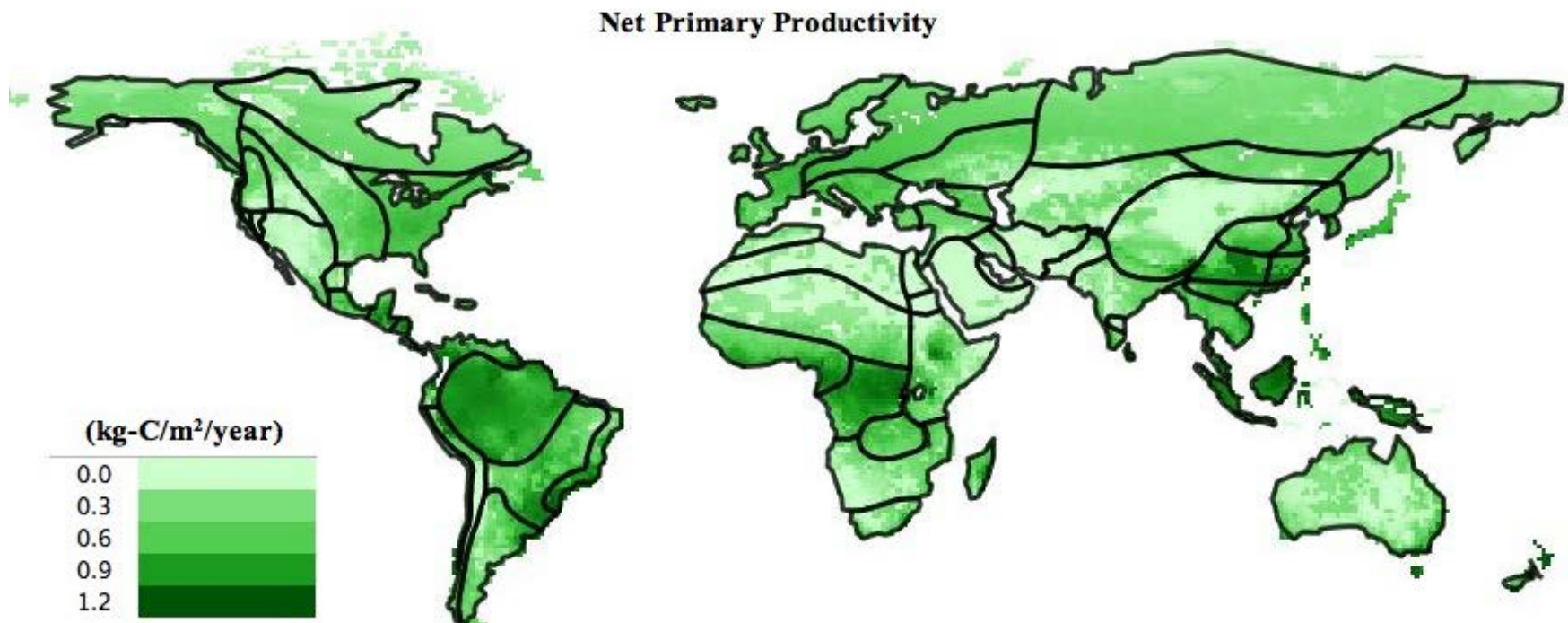
- Introduction to the SFI/Templeton project
- The accumulation of social complexity
- Why Cahokia seems important
- Some of the big questions
- Some philosophical issues

# The Atlas of Cultural Evolution (Peregrine 2003)

- Database of summary information for 289 **archaeological traditions** world-wide.
- *Shared subsistence practices, technology, and forms of socio-political organization across a contiguous area and over a long period.*
- Modeled after cross-cultural ethnographic research by anthropologist George Murdock.
- Ten variables with 3-point scales add up to a complexity score (range 10-30).

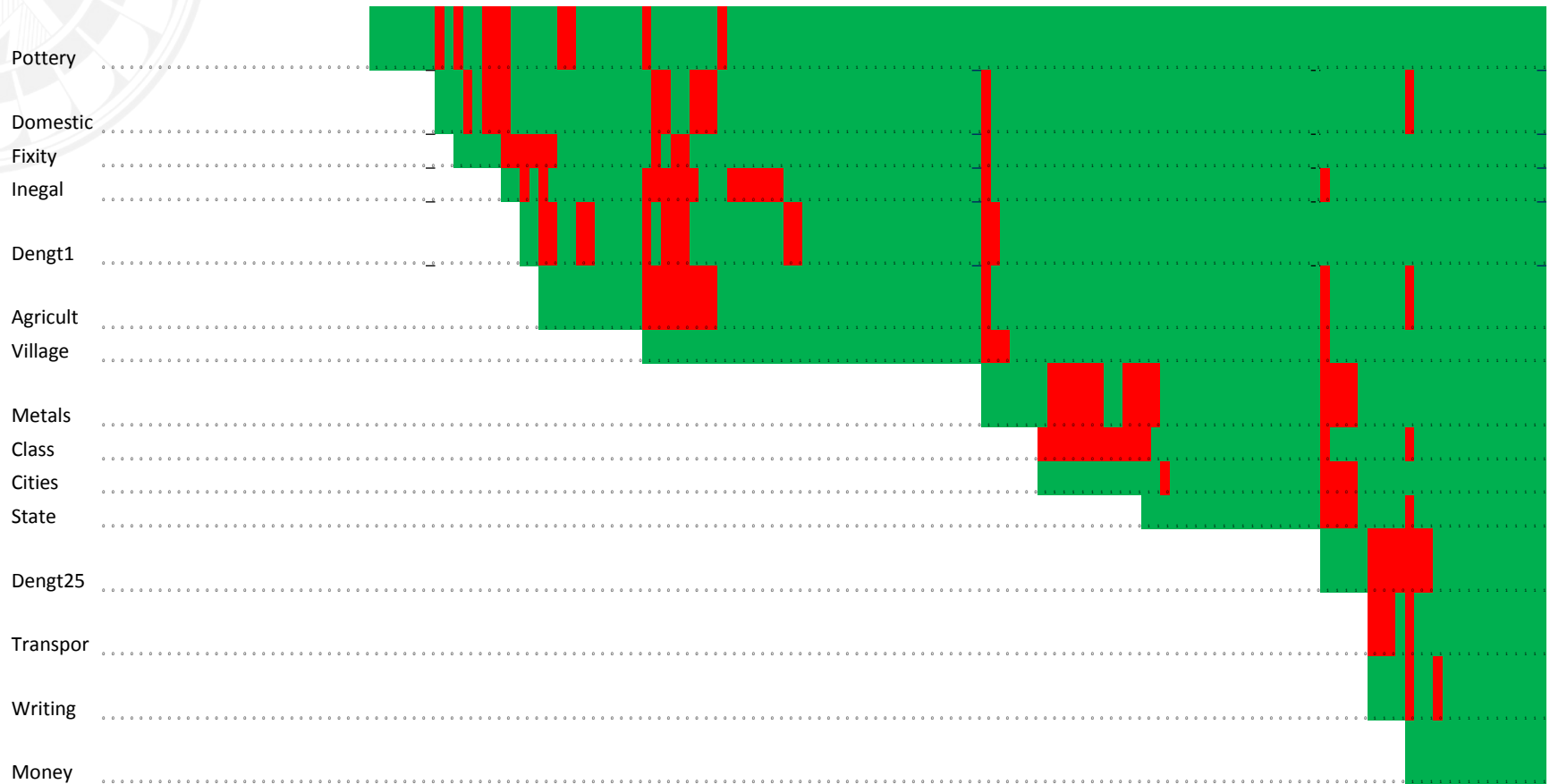
# Additional data for each tradition

- Population and area of the largest settlement
- Time from the onset of agricultural dependence
- Surface area (Encyclopedia of Prehistory)
- Net Primary Productivity (Atlas of the Biosphere)



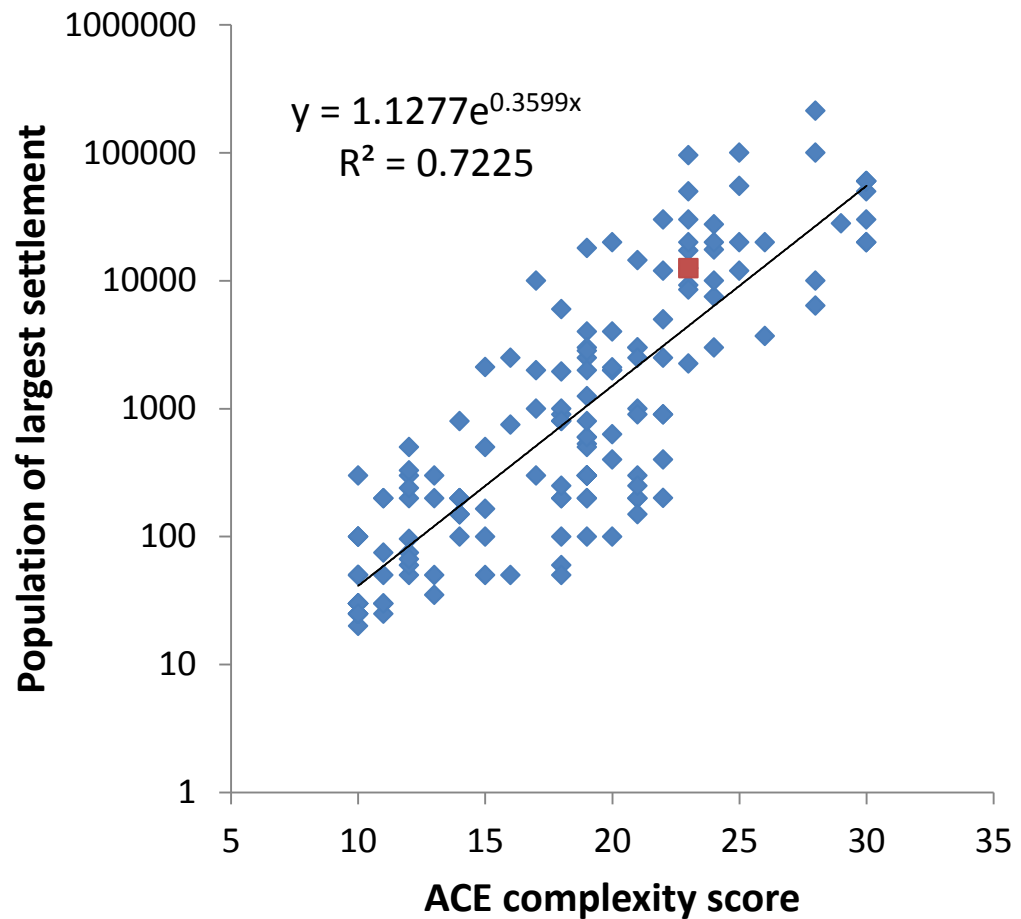
Tradition areas and NPP, 5,000 years ago

# The accumulation of social complexity

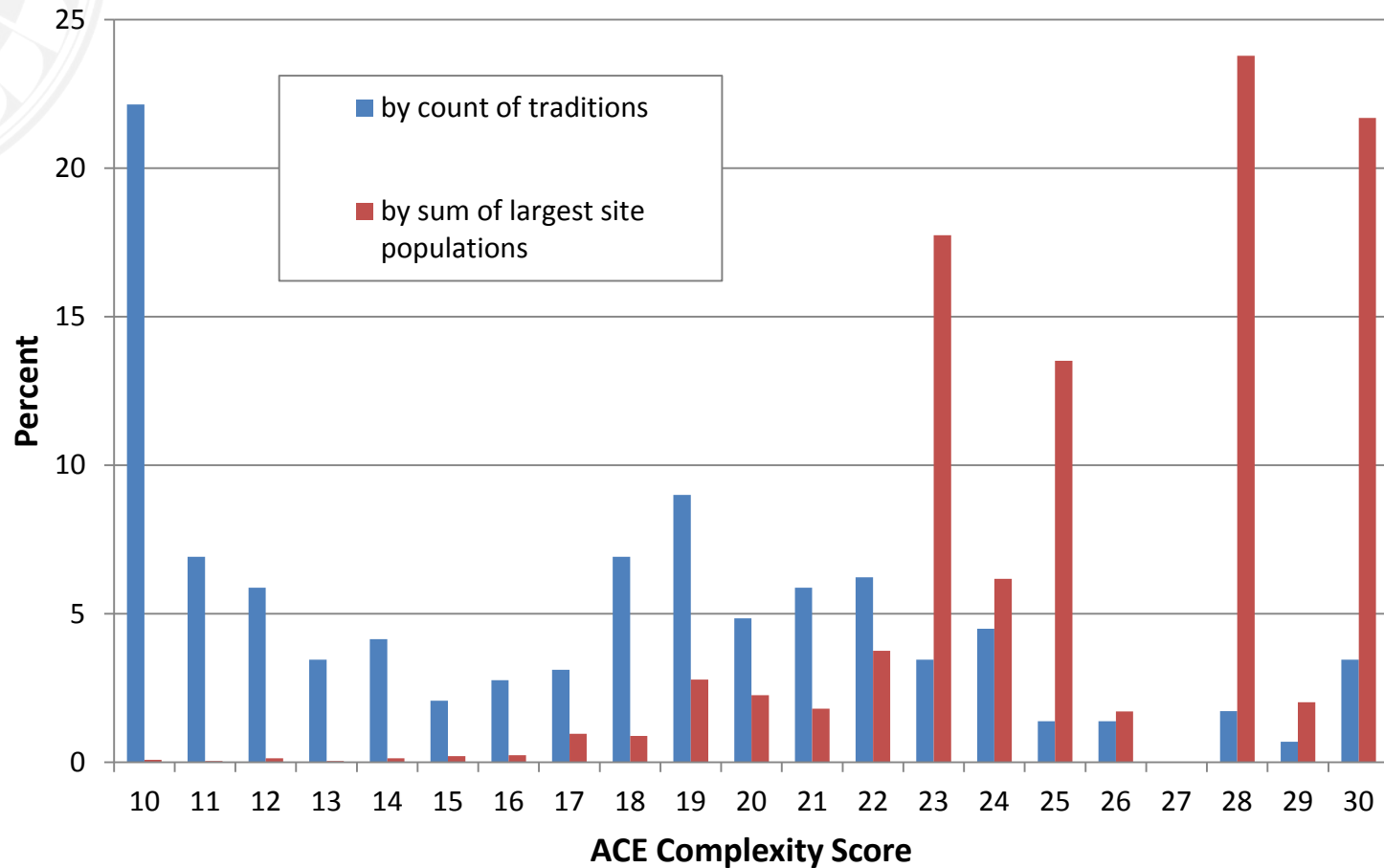


# Population of the Largest Settlement

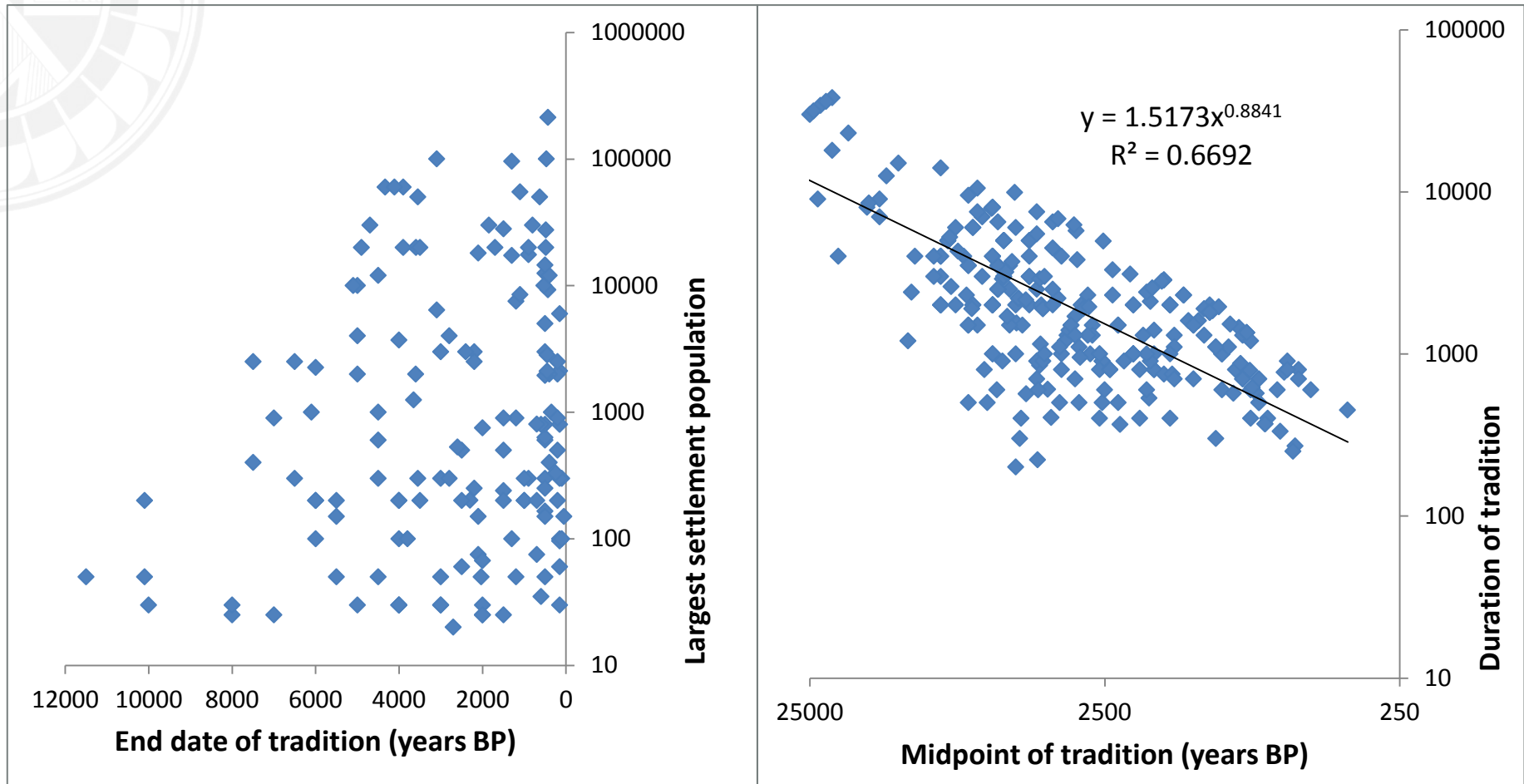
- Good proxy for overall complexity (Naroll, Chick)
- Relationship to division of labor, Zipf's Law
- Archaeologists pay attention to big sites



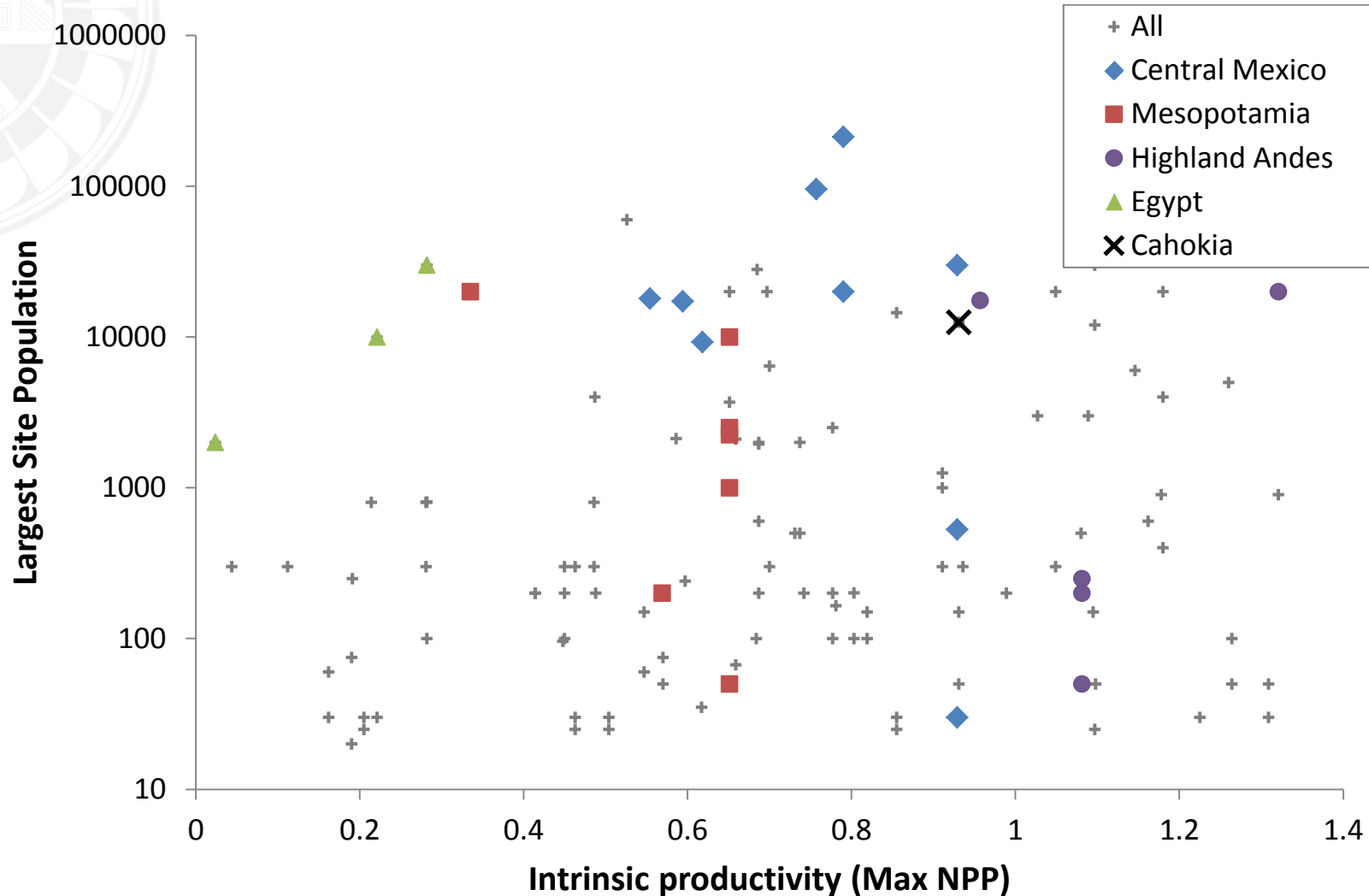
# Why evolution is relevant



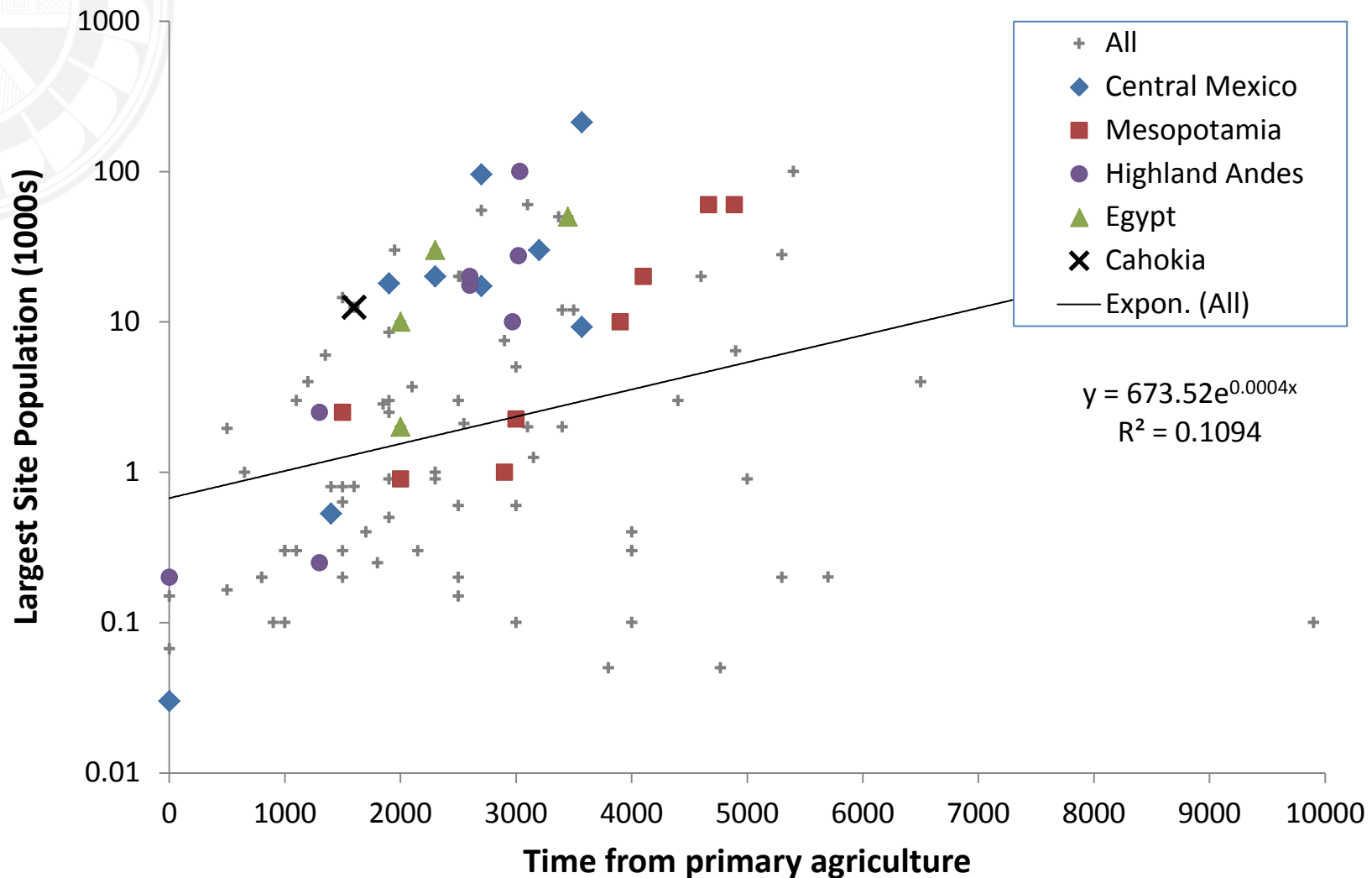
# Some big patterns



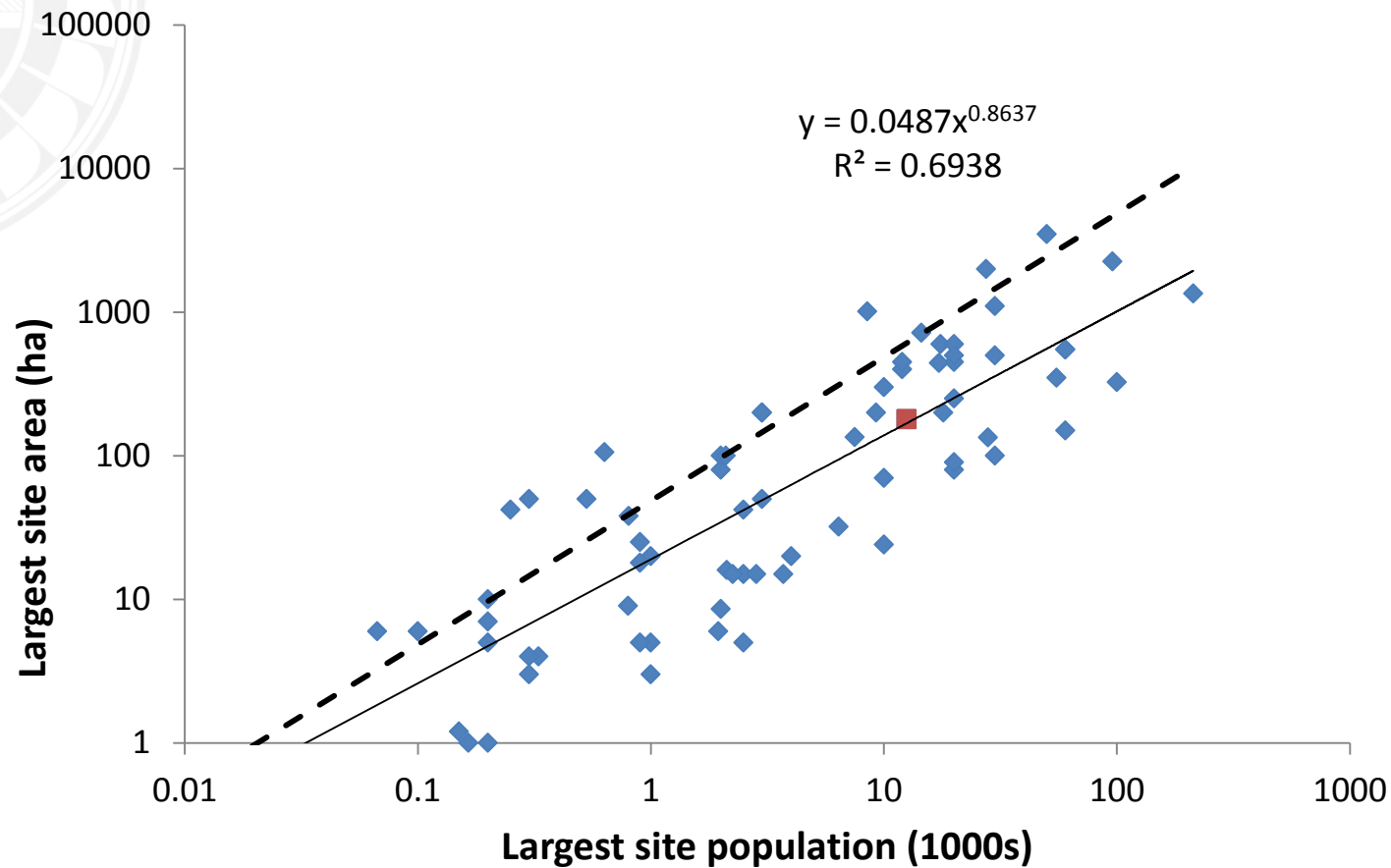
# Environment is not an ultimate driver



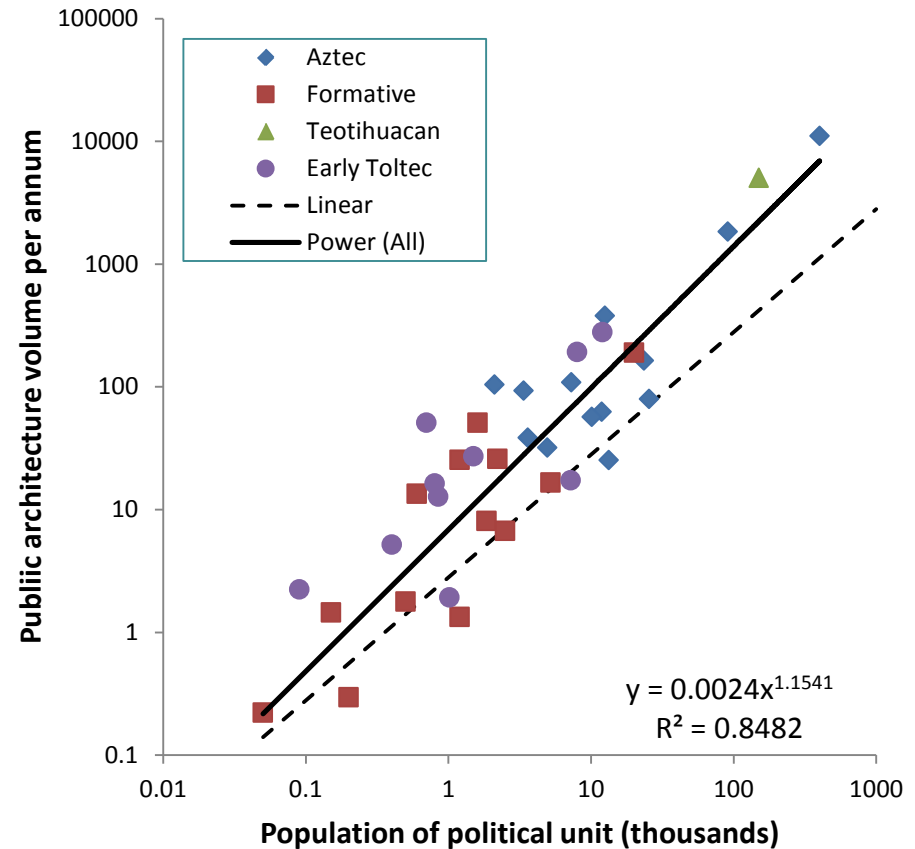
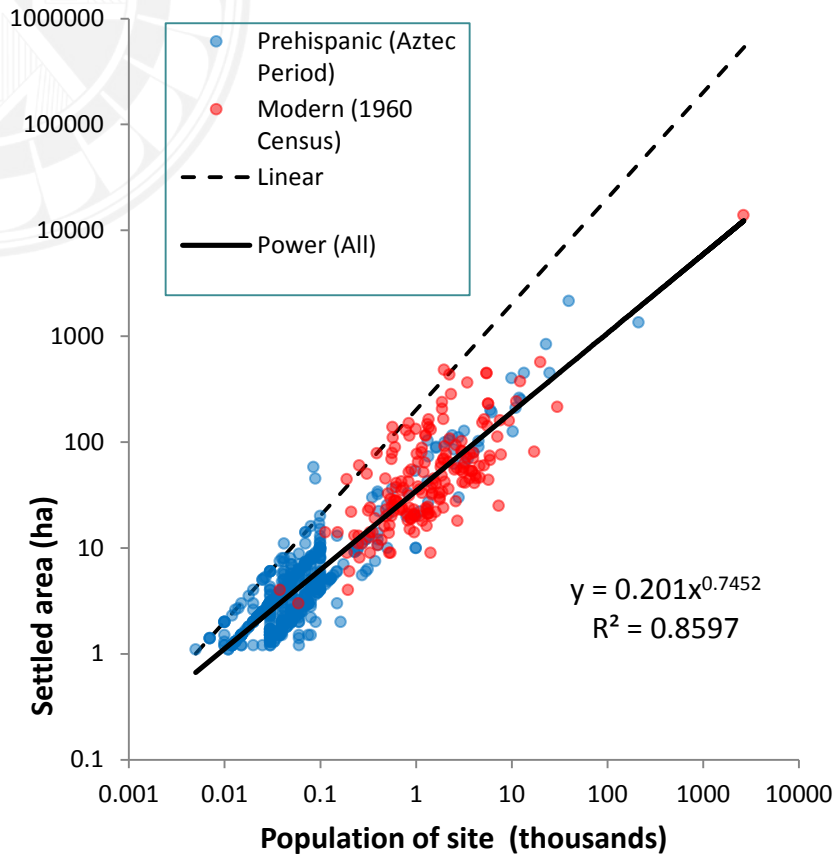
# Technology is necessary but not sufficient



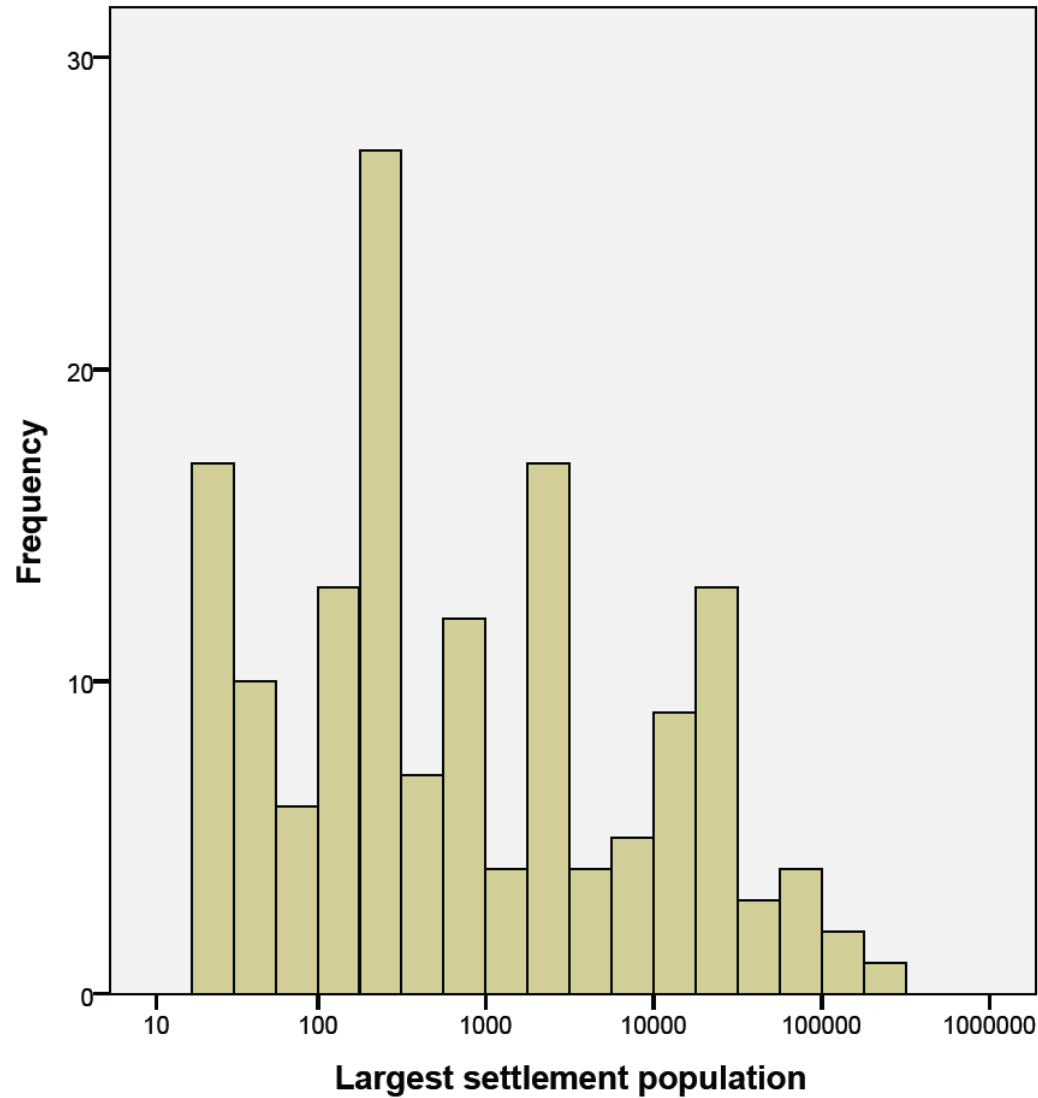
# Economies of scale appear quite general



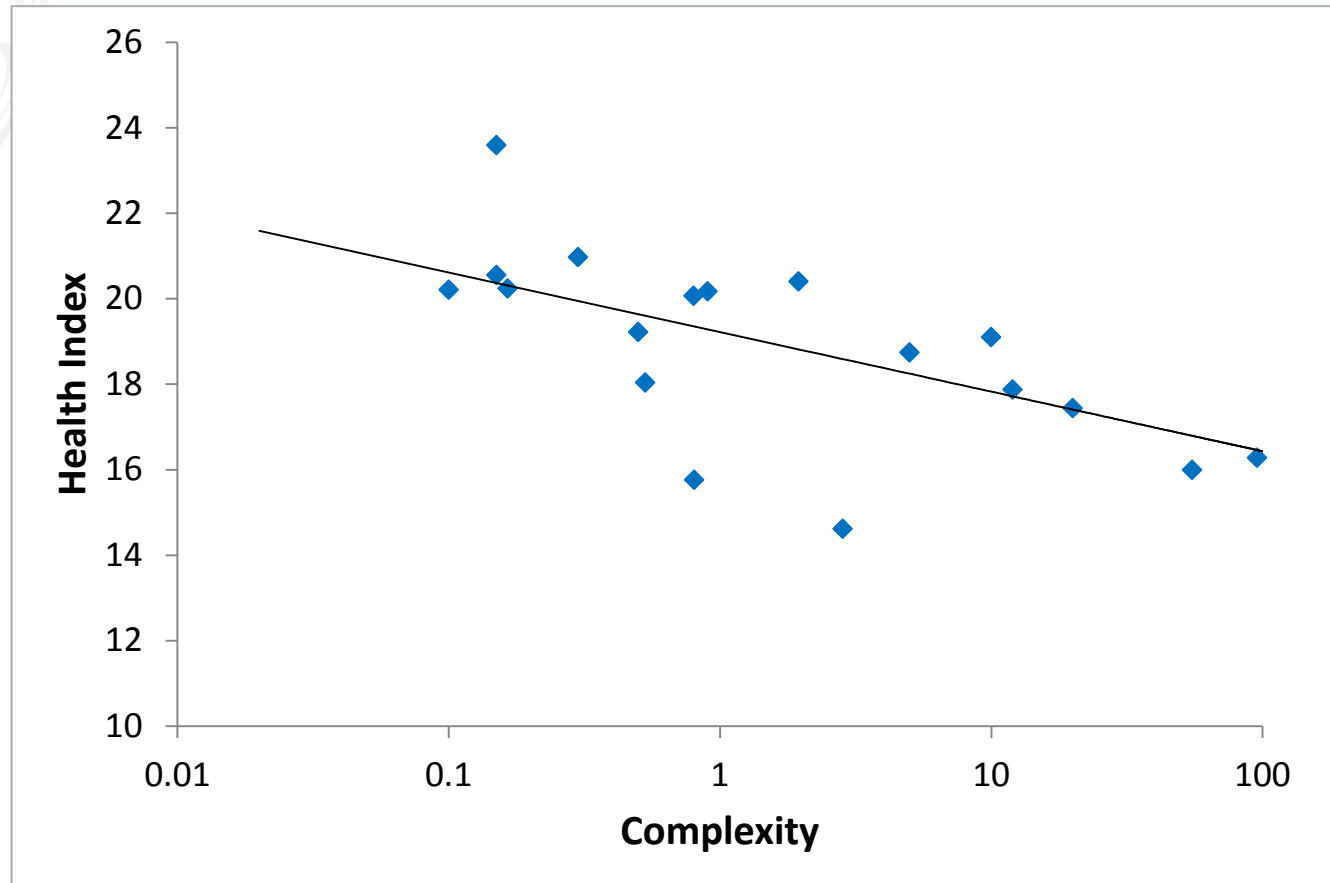
# Returns to scale as well



# Basins of attraction for scale



# Group vs. individual benefits



# Nested modularity has something to do with it



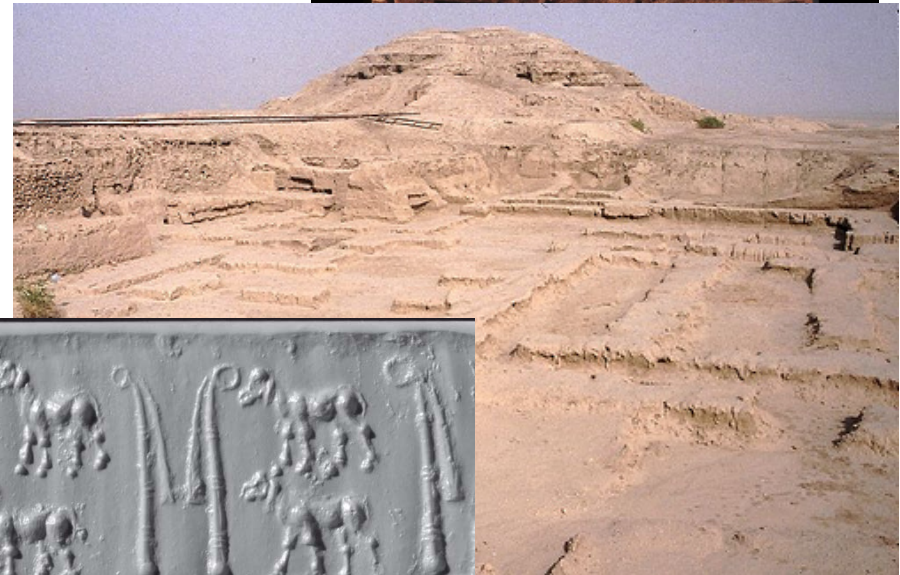
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# Culture/Information too



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| Archaeological Tradition         | Start       | End        | Largest Site   | Pop          | Ha         | ACE Score |
|----------------------------------|-------------|------------|----------------|--------------|------------|-----------|
| Early Dynastic Egypt             | 5000        | 4700       | Memphis        | 30000        | 1100       | 30        |
| Preclassic Maya                  | 3800        | 1850       | El Mirador     | 30000        | 100        | 22        |
| Gulf Coast Classic               | 2100        | 800        | El Tajin       | 30000        | 500        | 23        |
| Romano-British                   | 2100        | 1500       | Londonium      | 28000        | 134        | 29        |
| Chimu                            | 1050        | 480        | Chan Chan      | 27500        | 2000       | 24        |
| Jemdet Nasr                      | 5100        | 4900       | Uruk           | 20000        | 250        | 30        |
| Longshan                         | 4500        | 3900       | Liangchenzhen  | 20000        | 90         | 25        |
| Middle Bronze Age                | 4000        | 3595       | Hazor          | 20000        | 80         | 30        |
| Highland Meso. Late Preclassic   | 2600        | 1700       | Cuicuilco      | 20000        | 450        | 20        |
| Huari                            | 1200        | 900        | Wari           | 20000        | 600        | 24        |
| West Mexico Postclassic          | 1100        | 480        | Zacapu         | 20000        | 500        | 23        |
| Olmec                            | 3400        | 2100       | La Venta       | 18000        | 200        | 19        |
| Tiahuanaco                       | 1600        | 900        | Tiwanaku       | 17500        | 600        | 24        |
| S. Mexican Highlands Classic     | 1700        | 1300       | Monte Alban    | 17242        | 442        | 23        |
| South African Iron Age           | 2000        | 500        | Great Zimbabwe | 14500        | 720        | 21        |
| <b>Mississippian</b>             | <b>1100</b> | <b>500</b> | <b>Cahokia</b> | <b>12500</b> | <b>180</b> | <b>23</b> |
| SE European Late Chalcolithic    | 5500        | 4500       | Cucuteni       | 12000        | 345        | 22        |
| Postclassic Maya                 | 1100        | 400        | Mayapan        | 12000        | 400        | 25        |
| Upper Egypt Predynastic          | 7000        | 5000       | Hierankopolis  | 10000        | 300        | 17        |
| Late Chalcolithic Mesopotamia    | 6000        | 5100       | Tell Brak      | 10000        | 70         | 28        |
| Andean Regional States           | 900         | 530        | Tunamarca      | 10000        | 24         | 24        |
| S. Mexican Highlands Postclassic | 1300        | 430        | Tepexi         | 9250         | 200        | 23        |
| West Mexico Classic              | 1800        | 1100       | Gauachimonton  | 8500         | 1011       | 23        |
| Moche                            | 1950        | 1200       | Moche          | 7500         | 135        | 24        |
| SE European Bronze Age           | 5100        | 3100       | Mycenae        | 6400         | 32         | 28        |

# Government and Cities

- Several good examples of administration without cities (Hawaii, Coastal Peru, etc.)
- Many examples of administration AND cities (Mesopotamia, Mesoamerica, etc.)
- What about cities without administration?
  - If Cahokia, then maybe political and economic development are independent.
  - If not Cahokia, then maybe cities require administration.

# Some important questions (for me)

- Nature of Cahokian government?
- Exchange vs. redistribution economy?
- Primary or secondary?
- Priesthood separate from nobility?
- Role of conquest/militancy?
- Why didn't it stick?

# The issue of typology

- Influences what you're looking for
- Classification is not understanding
- Implied value judgments?
- Cross-cultural patterns are real
- Archaeological data are proxies
- Contingency AND regularity
- Specific vs. general knowledge