Where are we in history?

Past 16,000+ years → 1900 to now
World Population From 14,000 BCE

Billions of People

Earth's "Business As Usual" Carrying Capacity

Year

Farming

First Cities

Renaissance

Rome
Outline of History

Cultural System Domains
Outline of History

Cultural System Transitions
Outline of History

Tribal

farming 11,000 BCE

Empire

Renaissance 1500 CE

Planetary

now

Prehistory

writing

History

Past

New Age

Paleolithic

Kinship-based

Agrarian

State-based

Modern
### Cultural System-Domain Qualities

<table>
<thead>
<tr>
<th>Quality</th>
<th>Tribal</th>
<th>Empire</th>
<th>Planetary</th>
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<tr>
<td><strong>Main Livelihood</strong></td>
<td>Hunting &amp; Gathering</td>
<td>Agriculture</td>
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<td>Oral Stories, Songs and Verse</td>
<td>Elite Literacy</td>
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</table>
How Do We Discern The Future?
How Do We Discern The Future?

- analogies in nature
- deep history + cultural system domains
  => essential patterns
How We’ll Proceed

Tribal

farming
11,000 BCE

Empire

Renaissance

Planetary

3500 BCE
cities

now
# The Tribal-To-Empire Transition

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Lucky Latitudes For Agriculture

8,000 BCE

11,000 BCE

8,000 BCE
Global Climate Changes (Context)

Temperature Change °C
(from ice cores)

Year

Settlements

Domesticated Grains in Hilly Flanks

Domesticated Grains in China & Americas
Irreversible Transition to Agriculture

- Settlement
- Farming

Population Growth
- Over-Exploitation of Wild Plants & Animals
- De-skillings

Higher Energy Capture
- Higher Population Density

Hard To Turn Back

Over-Exploitation of Wild Plants & Animals
- Hard To Turn Back
## Kinship To Hierarchy

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<td><strong>Main Livelihood</strong></td>
<td>Hunting &amp; Gathering</td>
<td>Initiated by climate change; maintained by more energy/capita &amp;/area</td>
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Scale Changes Social Dynamics

Largest Settlement Size vs Year

- Farming
- Personally Known Kin
- Clans
- Hierarchical Clans
- First Cities
Energy Capture Per Person

Energy Captured Per Capita (in kilocalories per day)

Year

First Cities

Farming

2.2 x
Energy Changes Social Dynamics

- More Captured Energy Per Person
  - More Division Of Labor
  - Better Weapons And Fighters
- More Storable, Steal-able Surplus
  - More Motivation For Raids
- More Violent Intergroup Conflict
- More Militarization Of Communities
Standard of Ur (war side)
Standard of Ur (hierarchy side)
Empire Era Hierarchy

Penetrates into all aspects of culture, e.g.

* adults over children
* men over women
* powerful men and women over others
* humans over nature
* mind or spirit over the body
* sky gods over everything
## Orality To Literacy

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<td>Driven by increase of community scale and wealth</td>
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Transition To Literacy

Numeric Tokens
Transition To Literacy

Record Of Silver For A Sumerian Governor
Transition To Literacy
Transition Timing

- Foraging to Agriculture
- Kinship to Hierarchy
- Orality to Literacy

Tribal Domain | Transition | Empire Domain
Lessons From The Transition

- The driving forces are gradual and unobtrusive
- Small changes can grow to irreversibility
- Changes in one part => destabilize other parts => change throughout the system
- Positive feedback loops go until a new stable configuration is found
- Old qualities (kinship, hunting & gathering, orality) never fully go away
Empire Era

Agriculture

Hunting & Gathering

Kinship  Orality

Hierarchy  Writing