What is the world’s oldest map?

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Outline

• What is the world’s oldest map?
• Round up the usual suspects
• The curious mural at Çatalhöyük
• What was in Abauntz cave?
• What is the world’s oldest map?
• Why do maps disappear?
• What can maps do
• When did maps do it?
• Maps and human DNA
• An unprovable assertion?
• Maps and Spatial Reasoning

The Inspiration

• Maps and Web Mapping: Pearson/Prentice Hall
eBook due late Spring 2013
• Focus on Spatial Thinking, and Place as a memory aid
• Have been teaching the material for some years, but got the opportunity to visit the sites
• Plus: Every Cartography text I’ve used for almost 30 years starts with those same boring Babylonian clay tablets!

Why Mesopotamia?

• Protowriting: Neolithic about 9000BP
• Tablets date from Sumerian clay tablets 6000BP by 4600BP used cuniform (wedge) writing
• First alphabetic writing around 4000 BP using Egyptian hieratic glyphs
• Lets say 5000BP
• So maps followed writing, right?
Other early maps: The Usual Suspects

EGYPT

Abu Simbel Temple, Karnak: On the Nile at Aswan
Ramses II: Expedition to Hittite Kadesh (Syria)
About 2250BP

Egyptian Rope Stretchers: 3300BP

From: Harvest scenes, tomb of Menna. 1400-1352BC.
New York Metropolitan Museum of Art

Other early maps: The Usual Suspects

ROME

- Roman city plan from the side of a house on the Via dei Fori Imperiali, Rome
- Marble plan of Rome (Forma Urbis Romae)
  18 x 12m
- 150 marble slabs
- Consistent scale (1:240) and use of symbols
- Dates to 1800BP
The oldest map: A candidate

• Çatalhöyük in Anatolia, Turkey
• Two mounds or “höyük”, Çatal means forked
• Occupied from 9500 to 7700 years ago
• Mud houses without doors or windows, entry by ladder from the roof
• Each generation demolished the house and rebuild on top, raising the mounds about 90m high

Actually, two mounds
The walls

- Interior walls were stuccoed with limestone
- Some walls were painted, and then covered over with new layers
- One such painting dates to about 8200BP
- (Writing dates to about 5000BP)
- Has been interpreted as a map
- Shows what may be a plan of the settlement, with a volcano in the background
- Volcanoes were a source of raw material for obsidian, used for making stone tools

Found under the Southern Mound

The Çatalhöyük map

An interpretive version in a replica of a Çatalhöyük house
The map
- The whole map is about 3m long
- Separated dark red rectangles with varying numbers of interior white rectangles
- Uses black and red pigments on a white limestone wall
- A red volcano with two peaks, believed to be erupting
- Unknown lines and dots on the volcano

Interpretation
- The site was discovered by James Mellaart in 1958, excavated between 1961 and 1965
- Mellaart recorded the map in his publications
- Lower part shows settlement, with individual houses, a “town plan”
- Upper part shows twin mountain peaks of Hasan Dağı

Stephanie Meese
- In a 2006 paper, reinterprets the map using Mellaart’s own writings
- Concludes that the lower part is simply a geometric pattern, and the upper is the leopard’s spots on a leopard skin outfit, as evident in other murals

A quandary
- Is this the world’s oldest map?
- Is it even a map?
- Lets investigate for ourselves
- But first, where is Çatalhöyük?
Near Konya

Meese’s Evidence
- No maps exist before, and none after until 4000 years later
- Mellart changed his interpretation, maybe to popularize his findings? (Mellart was later expelled for disappeared artifacts)
- Geometric designs and leopard skins most common in the murals
- Plan view of town resembles it while being excavated, not as it would have looked
- While hills can be seen from Çatalhöyük, Hasan Dağı cannot
- The obsidian used at Çatalhöyük does not come from Hasan Dağı

My observations
- Meese makes a good point BUT
  - How far away is Hasan Dağı?
  - Could the map have shown how to get there, and the plan be of somewhere else?
  - What about the house depictions?
  - Why would a non-urban and land-locked society NOT use maps?

The mud houses
- Gaps between houses
Hasan Dağı 3,253 m 200km (14 days)

Another settlement: Even older

My conclusion

• The Çatalhöyük mural may be a map
• It may be a town plan, with a leopard skin over it
• It may be a geometric design and a leopard skin
• I guess we’ll never know!
• But are there other, older maps?

An amazing paper


A team of Spanish archaeologists have matched marks on polished sandstone made 14,000 years ago in Navarre, northern Spain to the landscape in which it was found and claim to have the earliest known map, which appears to be a prehistoric hunting map. The map has depictions of reindeer, a stag and some ibex, plus the shapes of mountains, and the course of a river.

Maps were carved as aids to hunting
- Perhaps also for navigation
- To store spatial and environmental information, e.g. spring flooding
- People were mapping 9,000 years before they were writing
- Not unreasonable to believe that maps go back to the earliest human migrations
Why do maps disappear?

- Oldest maps probably drawn on sand, mud or tree bark
- Many maps are simply symbolic objects, carefully arranged
- Point was perhaps to convey idea, and then the maps were unnecessary
- Few reasons why maps would be made permanent
- Surviving examples of Greek, Roman, Egyptian and early Mesopotamian maps number only in the tens

The first maps?

A conjecture

- Humans evolved in and then migrated out of Africa 60 000 years ago
- Just 10 000 years later we were in India, Turkey, Australia, and across all of Africa (1.3km/year, 32km a generation)
- 10 000 years later occupied much of Asia, and were spreading into Europe
- 15 000 years ago spread throughout the Americas
- Cave painting dates back 40 000 years
- When were maps first used?
- Could maps explain this rapid spread across the world?

Out of Africa: Genographics
Many paths, little evidence
Where would the maps be?

A smoking gun?
- Human footprint in mud and volcanic ash
- Dates to between 3.59 and 3.75 MY
- Laetoli Walkway, Laetoli, Tanzania
  Source: [http://homepage.smc.edu/grippo_alessandro/fossil.html](http://homepage.smc.edu/grippo_alessandro/fossil.html)

Why haven’t we found a map yet?
- We don’t know where to look (but we have the tools)
- We don’t know what to look for (fossilized maps)
- We haven’t tried to look (follow the DNA and animal migrations)

What do maps do for us?
- Act as memory (for an individual and for education): externalized
- Act as aids to navigation
- Help with hunting
- Help with shelter
- Help with protection (and warfare)
- The view from the cave is a panorama: Did Neolithic humans think of the world from an abstract viewpoint? YES
The biological perspective

• Maps are a competitive advantage
• Possibly critical for Homo sapiens, both for survival and spread
• Richard Dawkins: the very first maps came about when a tracker, accustomed to following trails, laid out a map in the dust
• Speculates that the creation of maps kick-started the expansion and development of the human brain
• ...and started the human spread across earth

Conclusion

• Humans have made and used maps for at least 13,600 years, since well before writing
• Deeply embedded spatial skills: positioning, direction-finding, navigation, search, feature detection and recognition
• Other animals share some of these, e.g. migratory birds, chimpanzees
• Much spatial literacy is intuitive
• Environmental problem solving using the multiple sources of information now available is a more complex spatial reasoning process
• What minimal skill set in humans constitutes spatial literacy for today, and how can we best teach and enhance that set?

If maps led to evolution...

• Spatial thinking and reasoning must be within our DNA
• Golledge termed this “Naïve Geography”
• Anyone can liberate the inherent and inherited spatial abilities they already possess
• Key is to teach and enhance spatial knowledge and reasoning
• Starts with spatial literacy: highly interdisciplinary