EASTER ISLAND

Part 1: The rise of a great civilization

Easter Island named Rapa Nui by Tahitian sailors. A remote island of only 64 square miles. Best known for its large, stone statues – called moai.

How did the ancient Polynesian get there? Why did they settle on the island?

Why Easter Island? Unknown. Oral tradition of chief Hotu Matua being forced to flee, perhaps from an island in the Marquesas to the west.

Found by chance? Probably not. Why?

Also in support of an intentional voyage: Polynesians brought a complete “landscape” to new islands. And, quite obviously, the group included men and women, which would not be expected if a fishing vessel had been blown off course.

THE MOAI

Estimates range from 800 to over 1000 statues. More than 230 on platforms known as ahu. No two alike. Classic features: elongated head, overhanging brow, long nose, prominent chin, ear-lobes often distended and appear to show inserted discs. Arms at sides.

Although different from statues from elsewhere in Polynesia, there are similarities with Marquesas and Australs with respect to use of platforms, hand position, etc.

Most E.I. moai of Rano Raraku tuff; some red scoria, basalt or dense white stone. On platforms: range from 2 to nearly 10 m. Largest broken, but Paro almost as big, weighs 82 tons. Largest ever: 65 ft. long, up to 270 tons. Unfinished.

Details on statues: tattoos and loincloths. Vast majority of moai unsexed.

Distinction: size difference between those of ahu and those that are not (13 ft/20 ft). Stockier, less angular on platforms, less prominent noses and chins.

Eyes: originally thought to have remained empty. Appearance with eyes quite different. What is the significance of the presence/absence of eyes?
Why so little evidence found? Why didn’t the early European visitors know about them?

Do the moai represent gods? Terms applied to them: Aringa ora (living faces), ariki (chief). Arranged around coast, facing inland. Significance of this arrangement?

Eyes and headdresses (pukao): activate mana at death of individual?

Evidence of many groups carving statues. No single authority commissioning them. Competitive activity among the various groups on the island?

HOW DID THEY DO IT?
Van Däniken and the lunatic fringe: extra-terrestrials responsible!

Claim: stone too hard to carve with the tools available to the Islanders. But: stone soft when fresh then hardens when exposed.

Claim: too heavy to move without advanced technology. Also debunked (more on this below).

Native tradition: sculptors were a privileged class. Relieved of all other work, supported by farmers and fishers → redistribution. Redistribution a key feature of complex societies.

Method of carving well understood (refer to drawings at beginning of text).

First major challenge: must move statue down a 55 degree slope of Rano Raraku! Evidence: channels, runways, capstans.

Final carving took place at foot of Rano Raraku.

HOW DID THEY TRANSPORT THE MOAI?
Hundreds were moved, some up to 6.25 miles.

Puzzle to early explorers: no trees for timber.

Heyerdahl experiment: 10 ton, 13 ft. long statue lashed to sledge. Pulled by 180 people using 2 parallel ropes.

Improved efficiency: sledge on lubricated track. Tradition: mashed yams and sweet potatoes. Lubricated wooden track using toromiro rollers?
William Mulloy: Y-shaped sledge and shearlegs (see illustrations in beginning of text).


Experiments of Charles Love. Two heavy ropes attached to brow, alternate pulling. Damage to bottom, fell twice. Breakthrough: statue placed on 2 green logs carved into sled-runners with track of small rollers.

Vital ingredients for all proposed methods: lots of strong rope. Inner bark of Triumfetta shrub (hau) and maybe crowns of now extinct palm. Hau very strong.

Issue of dealing with hilly terrain and matters of stability on slopes have also been considered.

We suspect that a variety methods were used, some of which are still unknown to us. But, it has been clearly demonstrated that simple technology is adequate. No power tools or extra-terrestrials needed!

“Roads” still visible. Avoided sharp changes in terrain. Transportation likely in summer, when ground hard. Also possible: moved 1600 ft. to shore and then floated around coast.

ERECTING STATUES AND THEIR PUKAO
Platforms quite remarkable in themselves.

Tie to central and eastern Polynesia: ahu are variations of marae platforms. Small scoria statues associated with earliest; reminiscent of some tiki figures of Marquesas. May represent chiefs, as on marae elsewhere in Polynesia.

Peak of statue carving around A.D. 1200; construction of statues and platforms lasted until well unto 16th century.

Solar alignments?

How did they get the statues on the platform?

Ramp method illustrated in text. Scaffold of crisscrossed beams possible (see illustration of this sort of structure in article on Stonehenge in Price and Feinman).
The pukao: space helmets, as Van Däniken would have us believe? May represent red feather headdresses worn by high ranking individuals in Polynesian society.

Pukao for the statue known as Paro: about 6 ft. in diameter and 5.5 feet high. Weighs about 11.5 tons.

Transport: roll from quarry?

When placed on moai? Before erected on ahu or after? Most believe after.

Finally, why were so many moai quarried inside crater?

RONGORONGO
The rongorongo tablets are another very impressive achievement of the Easter Islanders. Term means chants, or recitations. Did they originate before or after contact? Do the inscriptions represent a written language? If rongorongo does not predate the arrival of the first Europeans, what was the motivation? In any case, the rongorongo tablets are another remarkable achievement of the Easter Islanders.

**Part 2: The fall of a great civilization**

What went wrong?

Evidence: Moai apparently still upright in 1770. In 1774 Capt. Cook reported that many had been toppled. Skeletal material around the statues. Last to see standing was French Admiral in 1838. By 1868 Palmer reports that none upright.

Not just toppled: face down, beheaded or face pulverized. A matter of mana.


Oral tradition: conflict between Hanau Eepe and Hanau Momoko. But no archaeological evidence for battle in Poike ditch, as “remembered” in oral tradition.

Additional evidenced of strife: people apparently took refuge in caves on offshore islets. None has permanent water source.

Causes of strife?
Significant changes in diet, perhaps famine.
Legends: end of statue quarrying associated with quarrels over food. Breakdown in system of redistribution.

Towards end of prehistoric period shift towards greater dependence on marine resources that could be gathered rather than fished. Even these overexploited. Decrease in fish remains relative to other resources in middens from AD 1400 to present. Why? Also, this period features the rise of the hare moa. Why did they build such structures for chickens?

Dutch in 1722 reported few canoes, boats of poor quality. Nothing like the vessels depicted on rock art.

Pollen diagram derived from cores taken in crater lake: documents an amazing record of forest destruction.

Loss of trees affected fishing and statue building. Loss of fertile forest soils led to food shortage. Water decreased: ravines often dry.

Ultimate cause of destruction: human population too high. Archaeological evidence: numbers of sites and types of sites.

Changes in socio-political organization: Orongo and the rise of the Birdman at the expense of the ariki. Controlled violence?

A CIVILIZATION THAT SELF-DESTRUCTED
The temporal connection between the destruction of the forests and the collapse of the civilization appears to be significant.

A model for what happened:
Forest clearance for agriculture led to population increase.
Forest clearance for agriculture also led to soil erosion and loss of fertility.
More land cleared to feed growing population.
Trees and shrubs cut for canoe building, firewood, house construction, and timbers and ropes for statue transport/erection.
Rats, introduced by the original settlers, fed on palm fruits and multiplied rapidly, preventing regeneration of palm.
Overexploitation of sea bird resources eliminated these except on offshore islets.
Rats play role in decrease of birds by eating eggs.
Abundant food provided by fishing, seas birds, rats, and agriculture would have encouraged rapid initial population growth.
Uncontrolled human population growth put pressure on available land, leading to disputes and eventually warfare. Lack of timber and rope made carving more statues fruitless. Disillusionment with statue religion may have led to abandonment of this cult. Inadequate canoes restricted fishing to inshore waters, leading to decline in protein supplies. RESULT: general famine, warfare and collapse of whole economy, leading to significant population decline.

A LESSON FOR US: Easter Island was an isolated system, as is the earth as a whole.