

Conflicting Views of Easter Island

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The recent book *Collapse* by Jared Diamond (2005) has been widely reviewed around the world, and most reviewers have chosen to focus on one case study in the book, that of Easter Island. Since much of that section is based on our own books *Easter Island, Earth Island* (1992) and *The Enigmas of Easter Island* (2003), it is hardly surprising that we agree with Diamond's exposition. He concludes (correctly in our opinion) that deforestation, population growth, soil erosion, overuse of bird and shellfish resources, and introduction of rats all contributed. A careful distinction is made between ultimate causes of collapse, such as deforestation, and proximate causes or triggers, such as a possible small climate change.

As we pointed out in our books, the model of ecological catastrophe is by no means new – indeed it was first voiced by the French visitor, the Comte de La Pérouse in 1786, who remarked “...suppléent en partie à l'ombre salutaire des arbres que ces habitants ont eu l'imprudance de couper dans des temps sans doute très reculés....Un long séjour à l'île de France, qui ressemble si fort à l'île de Pâques, m'a appris que les arbres n'y repoussent jamais, à moins d'être abrité des vents de mer par d'autres arbres ou par des enceintes de murailles; et c'est cette connaissance qui m'a découvert la cause de la dévastation de l'île de Pâques. Les habitants de cette île ont bien moins à se plaindre des éruptions de leurs volcans, éteints depuis longtemps, que de leur propre imprudence”.

The idea that the fate of Easter Island could serve as a warning of what was happening to the planet as a whole was first highlighted by American anthropologist William Mulloy in the 1970s, and our books merely provided the botanical, ethnological and archaeological evidence that supported the scenario of environmental disaster, and notably of massive deforestation. In recent years, other points of view have emerged, as is to be expected and welcomed. In particular, the French specialists, Catherine and Michel Orliac, have emphasized the possible role of climatic factors (2005), and notably drought and the Little Ice Age, in the decline of the island's forests, and we have been happy to accept that such events may indeed have played a role, although we still believe that human destruction was the paramount cause, since the island's vegetation had successfully survived far greater climatic changes during the true Ice Age.

Two British researchers, Paul Rainbird (2002) and Benny Peiser (2005), have taken a very different approach, blaming all the island's woes on the effects of visits by Europeans since its “discovery” by the Dutch in 1722 – violence, cruelty, disease, slaving, and so forth. They view the island through rose-colored spectacles, choosing to believe that the community was thriving up to 1722, and that it was the Europeans who destroyed them. We disagree pro-

foundly with this anti-European bias. It is undeniable that many calamities befell the island thanks to European visits – starting with a shooting incident during the first visit of 1722 – but the Europhobic model ignores the mass of archaeological, oral, botanical and sedimentological evidence which documents the prehistoric transformation of the island by humans from pristine subtropical rain forest to a virtually treeless landscape, and from the richest island in the world for bird life to one shunned by all but a few bird species.

It is impossible to know how long the islanders could have persisted in their way of life if they had not been discovered by the outside world in 1722; but since they no longer had timber for canoes, which precluded access to deep-sea resources, let alone to an escape route, and since their protein and fuel supplies were severely limited, it is highly probable that this island culture would eventually have imploded in some way, even without the impact of Europeans.

The latest “revisionist” approach to Easter Island has come from American researchers Terry Hunt and Carl Lipo (2006; Hunt 2006, 2007). Their approach focuses on several different aspects.

1) The date of colonization. It has become fashionable in many archaeological settings to reject what seem to some to be excessively early ages, and to accept only the later dates for different events. The colonization of Easter Island, and indeed of eastern Polynesia as a whole, is a classic example, and Hunt and Lipo therefore reject the various early radiocarbon dates obtained in the past from the island, and prefer to claim a late arrival of humans around AD 1200. This has obtained a great deal of coverage in the world's media, as Easter Island is always of interest. However, this not only ignores the evidence of glottochronologists who place the island's colonization in the early centuries AD because of the archaic nature of the language, it also simply brushes aside early dates which are considered “unreliable”.

We ourselves have no particular preconceptions or preferences regarding the date of colonization, but we have considerable difficulties with the arguments presented by Hunt and Lipo. For example, the assembling of nine dates from different locations and different contexts seems fraught with problems – why should one reasonably expect them to be dating the same thing? And if they are not, what is the justification for treating them statistically? Early dates are often rejected on statistical grounds, as they form a “tail” in the distribution, but a tail is exactly what one could expect since small early populations would leave sparser archaeological traces than late large ones. Moreover, the rejection of all lake-core dates is not justified. Certainly, some pollen dates from the center of one caldera have

proved highly anomalous, but such anomalies are known elsewhere from caldera-centers, where ancient CO₂ is released from the magma chamber. The bulk dates from swamp deposits may be too young because of root penetration from above. Those from lake deposits may be too old because of in-washed old carbon. However, in a study by Flenley et al. (1991), a check on possible in-wash of old soil material was made by chemical analysis of the sediments, and chemical anomalies were small and occurred above the level when deforestation began, which was dated to ca. 1000 BP. This date for deforestation based on pollen is not easily dismissed – Flenley’s 10.5 m core from Rano Kau covered only the last ca. 1400 years, and the deforestation at this site was shown by two dates to be virtually complete by 1000 years ago. Fossil pollen from lake cores is in fact more likely than archaeology to find the earliest signs of human activity, because of the tendency of pollen to spread widely from its source. A pollen core therefore gives a more regional overview, whereas an archaeological excavation gives a more local view and might thus miss the earliest sites. Hunt and Lipo’s data do indeed come from a single excavation, at ‘Anakena, but even the results they present from there are open to severe question. For example, the finding that dates at ‘Anakena go back to 1200 and then stop is extremely weak – the base of the deposit is a clay soil with stratified sands on top of it. There is no “natural” stratified layer below the lowest cultural one, only the clay subsoil. How do we know that there were not other sandy layers which blew or washed away before the ones Hunt and Lipo investigated were deposited?

Moreover, the other dates used in their article come from two other localities, one of them described as an agricultural structure – but if ‘Anakena at AD 1200 was the first settlement, why were there people at two other locations at the same date, and why were they making structures, which would surely not be necessary in the early stages? In any case, is it not more likely that the early settlements would be near a good supply of fresh water, such as the crater lakes?

Finally, we question the belief that ecological change such as deforestation will closely mark the time of Polynesian arrival. This is only true if it is INITIAL deforestation and that no time was spent by initial colonies on pre-agricultural activities such as living on sea birds, fish, sea-mammals, etc. After all, the deforestation of Rapa, Rarotonga and Fiji is not complete to this day, despite initial colonization a long time ago.

2) The supposed role of rats in the deforestation: in our books, we highlighted the significant role of rats in eating the fruits of the island’s giant palm (which is not yet proven to be *Jubaea chilensis*, and is therefore correctly dubbed *Paschalococos disperta*). But we disagree strongly with Hunt’s claim that rats were the chief agents of deforestation: e.g. “I believe that there is substantial evidence that it was rats, more so than humans, that led to the deforestation” (Hunt, cited in Dobson 2007). We know of no evidence that the rats ate anything but the fruits, and since

Jubaea, at least, is the world’s longest-living palm tree, about 2000 years, then if people reached Easter Island at AD 1200, as they believe, there should be numerous palms left. One might suppose that the rats could have eaten the growing points and thus killed the trees, but we have not heard of this happening anywhere. On the other hand, there is excellent evidence of burning throughout – such as the carbonized stumps found by German ecologists Andreas Mieth and Hans-Rudolf Bork (2004) on the Poike peninsula. It should be noted that rats have not succeeded in deforesting Fiji, or Rarotonga, or Tahiti, or New Zealand!

In New Zealand, investigations of rat-gnawing (by *Rattus exulans*) of seeds/fruits has been carried out by Wilmschurst and Higham (2004). Three genera were investigated: *Podocarpus*, *Elaeocarpus* and *Vitex*. Three sites were studied, two with archaeological records and one (until recently) forested site without such records. Gnawed seeds were found at only the first two sites, which suggests that the rats were true human commensals and did not penetrate the forest very far. Whether this would be true of the rats on Easter Island is unclear. Certainly the New Zealand forest is cool and wet, especially in winter, which might have discouraged the rats. This may not have been the case on Easter Island. The forest there was, however, a rain forest, suggesting a degree of moisture. Interestingly, the excavation at ‘Anakena by Steadman et al. (1994) found that the abundance of rat bones had two peaks at different levels in the stratigraphy, about 200 years apart (ca. 1000 BP and ca. 800 BP). Perhaps these could represent the enormous plagues hypothesized by Hunt, although they seem scarcely high enough to do so. But throughout the 200 years, and even after it, there were abundant fish and dolphin bones, suggesting that people were still able to go to sea in sizeable canoes. So the rats had apparently not succeeded in deforesting the island in 200 years or more.

But in any case, whether the forest was destroyed by burning or rats is irrelevant. Human actions caused both, so our argument still stands. One might add that Rainbird (2002:448) has even attributed the destruction of the island’s vegetation to the browsing animals introduced by Europeans into a previously fertile environment where the islanders had spent centuries successfully crafting a home! One can only say that such a blinkered statement simply ignores all the relevant archaeological, sedimentological and botanical data from Easter Island. In a recent popular article (Young 2006), Hunt and Lipo have been quoted as supporting the position of Rainbird and Peiser (see above), and indeed they go so far as to ascribe all tales of cannibalism on the island to the Christian missionaries, which is an outrageous and unfounded claim; and to deny that the obsidian “mata’a” were weapons, preferring a theory that they were agricultural implements! Yet there is abundant evidence of these spearheads, which are dated by hydration dating, and they clearly proliferated after the deforestation. Obsidian is so brittle that it would make for highly unlikely farming tools. On the other hand, we have clear testimony from Forster, a natural historian on

Cook's visit in 1774, that "some.... had lances or spears made of thin ill-shaped sticks, and pointed with a sharp triangular piece of black, glassy lava" (Flenley and Bahn 2003:153); the Spanish in 1770 reported conspicuous evidence of wounds on several natives; and severe wounds have been found on skulls and bones from the island (ibid.). It is difficult to dismiss the idea of internal warfare – similar problems related to over-population are reported from other Polynesian islands such as Mangaia and Tikopia.

They also pose the question of how the island's population could have risen to crisis proportions if people only arrived in AD 1200, but, as shown above, it is highly probable that the arrival was in fact centuries earlier.

In general, therefore, we find most of the recent claims about Easter Island's past to be highly misleading, relying almost entirely on faulty data, special pleading and an anti-European bias. Certainly, we ourselves have not proved that there was ecological disaster on the island, but we have shown that it could well have happened, and in fact probably did so. To attempt to deny this with misleading data seems to us to be irresponsible. The point about the present ecological prognoses for the world is not that they are absolutely proven, but that they may well happen, and therefore we must take evasive action before it is too late.

If you are standing on a road and see a fast car speeding towards you, do you wait until you are quite certain it must hit you? No, you take evasive action at once. 🐘

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