

Ahu Tongariki, Easter Island: Chronological and Sociopolitical Significance

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Hanga Nui Bay, on the eastern end of the southeast coast of Easter Island, is currently the focal point of research in an intensively studied archaeological area that extends from the plains at the foot of the southwest slopes of the Poike Peninsula. The study area is a transect which crosses the island from coast to coast in a north-south axis from Hanga Nui to Mahatua on the east and from Motu Nao to an area close to Te Peka Peka on the west.

This transect, included within quadrangles 13, 14, 20, 21 and 31 of the island's general survey, has a maximum linear distance of approximately seven kilometers and a total area of twelve square kilometers, occupying most of the historically known territory of the Tupahotu *mata* or 'tribe'. Within this transect are the highest densities of prehistoric sites and features and some of the largest and most specialized activity areas and ceremonial architecture. Among these are Ahu Tongariki, the *moai* quarries of Rano Raraku, and the most important ceremonial centers of the northeast coast: Mahatua, Ra'ai, Heki'i and Te Pito Kura (Paro).

Close to three hundred ceremonial or burial structures, classed in several distinctive types, are known and recognized as *ahu* on the whole island. Of these, a smaller number are large, complex, raised, rectangular platforms, with or without wings, sloping ramps and associated 'plazas'. Most of these structures supported multi-ton monolithic statues of volcanic tuff. *Ahu* and *moai*, symbols of the prestige and status of a given group, were raised to worship deified ancestors, and are the most conspicuous features of the archaeological landscape.

A typological analysis of radiocarbon-dated structures indicates that the *ahu* and the statues represent an "unbroken chronological progression such as might be expected from the architectural reflection of the activities of a single continuously developing society."³ Based upon these data, the final structure at Ahu Tongariki represents the type of monuments built during the mid- to late part of the *ahu-moai* sequence.

A combination of archaeological data, oral traditions, ethnography, historical documents and other sources, suggest that *ahu* were destroyed and/or significantly modified as the result of profound socio-political and religious changes that occurred in late prehistoric times. These may have been a pan-island revolution triggered by a generalized degradation of the environment, critical maximum levels of population, and a complex set of 'negative' variables that altered the delicate equilibrium of the whole system and resulted in cultural collapse. Several other specialists indicate that most *ahu* and *moai* were seriously altered as a direct consequence of intertribal warfare. Most scholars support the idea that the destruction, toppling of the statues and important changes in function of the ceremonial and religious centers, occurred after AD 1500 and continued well into

the post-contact period. After the toppling of the statues, most of these ruins continued to be used as burial sites, greatly altering the original structure, until the conversion of the population to Catholicism in the second half of the 19th century, when they were deserted.

Europeans first saw Easter Island in 1722. Roggeveen's expedition described some monuments (*ahu*) and statues still standing near his anchorage off the north coast, probably at Hanga Ho'onu. Cook, at Hanga Roa in 1774, and La Pérouse in 1786 gave similar accounts. As stated elsewhere by explorers and visitors during the 18th and early 19th centuries, most *ahu* in other sections of the island looked like "old" ruins and few statues were seen standing. All of them were down by the mid-19th century.

The reduction of the pre-contact population, including the dramatic post-contact depopulation as a consequence of slave raids; introduced diseases in the 1860s; the influence of Catholicism; the installation of European and Chilean settlers in late 19th century; and the concentration of the remaining population on the west coast of the island, all provoked the definitive abandonment of many of the ancient tribal territories, including the Hanga Nui area.

Ahu Tongariki was the largest ceremonial structure ever built on Easter Island. In terms of size, plan and the number of statues, it represents the apogee in the development of the so-called 'image *ahu*', most of which were built in a period of approximately five or six hundred years between ca. AD 1000-1500. This monument is one of the most spectacular expressions of prehistoric megalithic ceremonial architecture in the entire Polynesian cultural area.

With a central platform close to 100 meters long and two lateral extensions, or wings, associated with frontal access ramps, this *ahu* originally had a total length of approximately 220 meters. The average height of the massive seaward wall was four meters and used more than 800 irregular, unworked, crudely fitted basalt blocks.

During its final phase of construction and function as a ceremonial altar, the central platform of Ahu Tongariki supported fifteen monolithic statues of volcanic tuff (*moai*), carved at and transported from the Rano Raraku quarries, about one kilometer to the northwest. These statues had heights that ranged from 5.6 to 8.7 meters. Average weight was over 40 metric tons⁴; the largest statue placed near the central section of the platform weighed 88 metric tons. With the statues erected on top of the platform and crowned by large cylinders of red scoria (*pukao*), the monument had the impressive height of close to fourteen meters.

In 1770 the Spaniards under González circumnavigated the island using small craft and described and mapped several coves

and bays, while looking for safe anchoring and landing places. One of these groups, headed by Lángara, entered Hanga Nui close to the coast and did not describe inhabitants, monuments or erected statues in that bay. If Ahu Tongariki were still functioning as a ceremonial altar, they could not have failed to notice this enormous monument and the gigantic statues that would certainly be visible from a distance. It is reasonable to assume that Ahu Tongariki was in ruins and presumably abandoned by 1770 and probably well before Roggeveen's discovery of the island. The site continued to be used for burial well into the 19th century.

Between ca. 1870 and 1960 the ruined Ahu Tongariki remained relatively intact, although the ranching operations of this century used the area to concentrate sheep, destroying one of the



The landward side of Ahu Tongariki with its 15 fallen *moai* as seen by Katherine Routledge in 1914-15 (*The Mystery of Easter Island*. New York: AMS Press, 1978 reprint).

wings and using other material from the platform to build stone fences. Photographs taken between 1886 and 1960, descriptions, drawings and sketch maps of several scholars and visitors of the island, collected by the authors, show with great detail the state of the ruins at that time. Even in its ruined state Tongariki was fairly well preserved and was one of the most remarkable monuments and complex archaeological sites of the island.

On May 22, 1960 one of the largest recorded earthquakes destroyed most of the central and southern regions of Chile, 3700 kilometers to the east of Easter Island. The earthquake caused a major *tsunami* that crossed the South Pacific Ocean in a few hours and hit the eastern and southeastern coasts of the island. The devastation continued as far away as Japan and Hawai'i.

Various estimates and calculations indicate that a wall of water, over eight meters high, reached Easter Island and entered the low bay of Hanga Nui and the surrounding lowlands to the base of Rano Raraku volcano. It frontally impacted the four-meter high seaward wall of the monument, completely destroying the main platform to *its foundations* and spreading the remains over an area of more than four hectares. Some of the fifteen statues were pushed more than one hundred and fifty meters inland and were broken and covered by thousands of tons of the *ahu* walls and fill. When the water retreated, it had deeply altered or destroyed most of the remaining monument. The *tsunami* left *in situ* only a small portion of the central section of the *ahu* ramp and the fragmentary and obliterated remains of the wall foundations of the main platforms and plaza pavements.

Before this event, the matrix of the ruined and abandoned *ahu* described historically was a very complex and impressive archaeological deposit with a reconstructed calculated volume of 23,000 cubic meters above the post-occupation surface. Like many other monuments of its kind, it suggested the accumulated

evidence of successive construction phases over time. Expansions of former *ahu*, recycling of earlier types of statues and architectural components and other evidence indicate continuous occupation and ceremonial religious, mortuary and sociopolitical activities at the site for approximately 700 to 800 years. In the opinion of several contemporary researchers, this evidence probably encompasses most of the prehistoric evolution of the island's culture.

As a result of the devastating destruction by the *tsunami*, it was reasonable to believe that this great monument was lost forever. Since 1960, many colleagues had the dream of "restoring" the monument, but the complexity, time, effort and cost of such a project labeled the idea as impossible. In 1979, the authors systematically surveyed that section of the island, mapped the

ruins of the area with great detail and also thought that a restoration was not feasible with the means, experience, personal knowledge of the materials and levels of information available at that time.



An early phase of the reconstruction of Ahu Tongariki in 1992. Note the wood frame indicating the location of the *ahu* platform.

In 1991, this situation changed radically, and even though it was not a research priority and other important work was under way, we started to consider the extraordinary possibility of rebuilding Tongariki. The donation, by the Tadano Corporation of funds and equipment, in particular a large, modern crane capable of handling some of the largest statues, allowed serious consideration of this project.

The feasibility of a viable and realistic re-assembly of the ruins was based upon a detailed analysis of late 19th century



Reconstruction of Ahu Tongariki underway in 1993 using the crane donated by Tadano Corporation (photo by R. Morales).

and 1960 source data, the study of the *post-tsunami* ruins. A computer-based reconstruction strategy was designed using precision cartography and geomorphological data, digital analysis, correction of historical photographs and drawings, and three-dimensional modeling.

The main goal of this project was the *reconstruction* of an almost completely destroyed architectural monument. A significant finding of the archaeological work at Tongariki was that the whole *ahu* site and archaeological deposits contained within the matrix of the main structures, most of them by definition secondarily deposited, were completely destroyed to *ground level* by the tsunami of 1960. Sub-surface archaeological deposits were minimal.

The archaeological remains of the structure below the plaza's surface showed a complex sequence of architectural expansion and ubiquitous recycling of structural components of several platforms and pavements and the use of earlier types of statues as foundation building blocks or fill material. Except for a few artifacts, undoubtedly intrusive, very little was found in the trenches that were excavated down to the natural, pre-occupation surface through the massive fill (large rocks) of the *ahu* foundations and the interface of artificially leveled area in front of the *ahu*. Only scant evidence came from a shallow layer (<30 cm) at the interface of the fill and the natural surface, indicating occupation or some human activity before the fill and leveling occurred. These remains pre-date most construction activity in the area. Thus, our current understanding of the chronology of the site, at this time, can only be postulated from dated occupations before the first *ahu* construction and the completed final stage *ahu* placed within the existing dated, typological se-

quence of *ahu* on Easter Island.

We postulate that the remains identified under the foundations of Ahu Tongariki *architecturally* reflect processes of initial fission and territorial expansion of the founding population and a later fusion of sociopolitical units that parallel a significant demographic peak. The monument, as such, is not only the material expression of that process, but also reflects the growing complexity of the sociopolitical organization of one of two major segments of the island's population. Several lineage *ahu* were rebuilt and joined together to form a larger, but irregular, altar, which was subsequently recycled. A larger, well planned, unfinished platform was being built on top to receive fifteen or more statues, as a final expression of the power, importance and size of the group that occupied the area. Ahu Tongariki probably became the sociopolitical and religious center of the eastern confederacy of 'tribes' described in the ethnographic record of this period.

Research at Tongariki between 1992 and 1996 is the largest salvage and *reconstruction* effort carried out in Polynesia. The pertinence and accuracy of the reconstruction of the ruins of the *ahu* and restoration of the fifteen monolithic statues of volcanic tuff (*moai*), documented in historic times, will be reported elsewhere. The condition of *post-tsunami* remains posed serious difficulties to the precise archaeological control of the reconstruction effort. Nevertheless, as is the demonstrated case with most of other monuments of its kind on the island, the whole site is clearly indicative of an 'unbroken cultural progression'. The first human occupation of the area probably occurred ca. AD 900-1000, and pre-dates the first of at least three main *ahu* constructions. The final monument was the result of a major late architectural expansion that was probably unfinished as a result of social unrest that characterized the final stages of Easter Island prehistory.

FOOTNOTES

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³Mulloy and Figueroa, The A Kivi-Vai Teka Complex and its Relationship to Easter Island Architectural Prehistory. APAS, Number 8, 1978:137.

⁴Previous estimations of statue weight were determined by using average values of specific weight for the Rano Raraku tuff and volume calculations. At Tongariki we were able to use a large crane that could lift a whole or parts of large statues and weight them with great precision. The estimated error was in the order of 1%.



The reconstructed Ahu Tongariki with its 15 *moai*. The *moai* lying in the foreground has unopened eyes and, therefore, is assumed to not have been a part of the *ahu* but intended for some other purpose (photo by G. Lee).