ABSTRACT
The Pacific region consists of a multitude of island communities in a vast Ocean. The people and material culture on the various islands and island groups are not homogenous despite the close relationships demonstrated by archaeological, linguistic and ethno-historical research. Monuments have generally been interpreted to be tied to ideology and power and often have an extended biography with use and re-use phases. They could be considered both as part of, and active in, shaping and re-shaping the natural and ideological landscape of groups of people. Monuments, especially the ones that have been interpreted as ceremonial sites, have often been used in the discussion of prehistoric migration and interaction of people in the Pacific region but they also play an important role in current Cultural Heritage Management (CHM) and issues related to World Heritage nominations and community involvements. This volume presents case studies from across the Pacific focusing on the relationship of monuments and people to chronology, ideology, re-use, biography and CHM in a local, regional and global perspective.

Keywords: Archaeology, Monuments, Monumentalism, Chiefdom, Social structure, World Heritage, Pacific, Polynesia, Micronesia, Melanesia, Samoa, Pulemelei mound, Tonga, langi, Rapa Nui (Easter Island), ahu, moai statues, marae, shrine, Palau earthworks, Solomon island, Kuk site, Roi mata site, Nan Madol, Kosrae, Lolong sites, New Zealand pa

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“Life can only be understood backwards; but it must be lived forwards”

*Sören Kirkegaard*
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MONUMENTS AND PEOPLE – AN INTRODUCTION

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Abstract: The Pacific region consists of a multitude of island communities in a vast Ocean. The people and material culture on the various islands and island groups are not homogenous despite the close relationships demonstrated by archaeological, linguistic and ethno-historical research. Monuments have generally been interpreted to be tied to ideology and power and often have an extended biography with use and re-use phases. They could be considered both as part of, and active in, shaping and re-shaping the natural and ideological landscape of groups of people. Monuments, especially the ones that have been interpreted as ceremonial sites, have often been used in the discussion of prehistoric migration and interaction of people in the Pacific region but they also play an important role in current Cultural Heritage Management (CHM) and issues related to World Heritage nominations and community involvements. This volume presents case studies from across the Pacific focussing on the relationship of monuments and people to chronology, ideology, re-use, biography and CHM in a local, regional and global perspective.

PRELUDE - A MONUMENT IS A MONUMENT IS A MONUMENT - IN ARCHAEOLOGY FOR EXAMPLE

Out of monuments, names, words, proverbs, traditions, private record and evidences, fragments of stories, passages of books, and the like, we do save and recover somewhat from the deluge of time.

Sir Francis Bacon

Monuments
In this volume we explore the concept of “monuments” and how the things referred to by that concept are active in human social relationships and the practices which create place. Our idea is to examine standard themes regarding why monuments have been erected and how they have been used or changed over time, but we also discuss the conceptual foundations of the study of monumentalism and
monumental landscapes in this context. We use an array of examples across the Pacific which focuses on practices in the built landscape, especially pertaining to durable sites with special meaning, such as mortuary structures and temples, and we will provide interpretations of how these relate to the natural environment and human cognitive landscape.

Some of the papers in this volume were presented at a session I chaired on "Monuments and People in the Pacific" during the 8th Easter Island and Pacific conference in Santa Rosa during 2012. The book includes eleven papers by archaeologists who have researched monuments in the Pacific in various ways. Since there are obvious differences in research tradition in various parts of the Pacific the papers are grouped under the areas that are labelled Melanesia, Micronesia or Polynesia.

Monuments with special meaning such as mortuary structures and temples have been integral to archaeological research, especially in relation to interpretation of the organisation of prehistoric societies. Many prehistoric monuments are known to have been built to mediate between gods and people but also constructed as a medium for human discourse in time and space (Martinsson-Wallin 1994:134). According to the Oxford paperback dictionary a monument is:

anything (especially a structure) designed or serving to celebrate or commemorate a person or event... or a structure that is preserved because of its historical importance.

Something monumental is, according to the same dictionary, of “massive or permanent importance”. From an anthropological perspective we might add that monuments exist in social space, and create places that focus social activity. Again, according to Oxford, ‘social space’ can be explained as an area/arena where mutual relationships of people who live in an organised community are negotiated, and ‘place’ is explained as a “particular part of space”.

Following these definitions of the concepts, the essence of this volume is that we are exploring physical structures constructed by humans, sometimes of massive, permanent and historical importance, and their association to the arena where communities negotiate their relationships. The authors of the papers, who come from Europe,
Australia, New Zealand and the USA, explore the interplay between material culture, human relations and the environment in various theoretical and methodological ways which relate to their respective research traditions and experiences. As well as the fact that the monuments explored have a relationship to past and present Pacific Islanders they also have an intimate relationship to the researchers who have explored them. Thus, the monuments and people in the Pacific attach to multiple layers of actions, meanings and perspectives.

Traditionally prehistoric monuments have attracted a great deal of attention from archaeologists. Classic accounts such as *Monuments, mobilisation and social organisation in Neolithic Wessex* (Renfrew 1973) and *On the Significance of Monuments* (Bradley 1998), explore prehistoric European monuments and the concept of monuments in time and space alike, but the two scholars use rather different theoretical and methodological approaches. The former is using a processual and the latter postprocessual approach. To some extent their approaches are disparate and incompatible, but they could also be seen as presenting a succession from one perspective to the other, conveying something about the history of archaeological thought.

A close look at the key archaeological literature on prehistoric monuments reveals that some monuments have attracted more attention than others. The Neolithic monuments of Europe, for example Stonehenge (Figure 1), are all-time favourites (Daniel 1941; Childe 1949; Renfrew 1973, 1983, Bradley 1998; Parker Pearson 2000; Fowler and Cummings 2003; Midgley 2008). Of course, the ziggurats of Mesopotamia, the pyramids of Egypt and the Americas, as well as special sites such as the Easter Island (Rapa Nui) monuments, Nan Madol in Micronesia and the Mississippi mounds, have also attracted frequent attention and have been investigated and interpreted in various general and specific ways. I have myself focused my research on monuments for the past 25 years (e.g. monumental sites with religious or ritual connotations) in Polynesia (Rapa Nui and Samoa) and megaliths and Bronze Age cairns on the island of Gotland in the Baltic Sea area.

I, and probably many of my colleagues who lecture in archaeology, enlighten our first year students that one of the features that characterises a ‘civilisation’ or ‘complex society’ is the building of large scale monuments. Complex societies are associated worldwide with
monumental architecture which has made them useful to the study of development of socio-political complexity and socio-cultural change. Both Renfrew (1973, 1976, 1983) and Bradley argue (1998), in line with other archaeological researchers, that there is a link between monuments and domestication. However, Bradley (1998) suggests that it is not straightforward to say that the Neolithisation and monument building are synonymous. He suggests that the change in food production and utilising of resources are not the only driving force which explains the building of monuments. An important issue, according to Bradley, is that the concept of time and the relationship to the ancestors was altered when people changed subsistence patterns from foraging to farming and that this facilitated and required the building of monuments.

To cut an opening in the many layers of research, interpretations and discussion by archaeologists in relation to past monuments and monumental architecture I again move to the all-time favourite theme among archaeologists in the western world, the origin and development of megaliths of Europe. In many ways they have been used as templates when discussing and interpreting why monuments have been erected and how these expressions link to social organisation, kinship and
subsistence. The shift from foraging to farming has been debated in textual form ever since the dawn of the discipline of Archaeology. The discussions were initially based heavily on an evolutionary and/or a cultural historic approach (Lubboc 1865; Nilsson 1866).

Hvarje folkslag har tydligen haft tre eller åtminstone två stadier att genomgå, innan dess egentliga social bildning vidtagit: Vildens, Nomadens, Åkerbrukarens. [Every nation has obviously gone through at least three or two stages before becoming socially educated, namely the stages of the savage, the nomad and the farmer] (translation by the author) (Nilsson 1866:2).

The erection of monuments (mortuary monuments mainly) were considered as a sign of that the “savages” became sedentary with a subsistence base in farming and that they got more civilised.

In early archaeological research the cradle of civilization was placed among the pyramid builders of Egypt or in Mesopotamia. Some early archaeologists considered the megaliths found in Europe to be diffused from, or a product of, more advanced building traditions in the Orient. With the subsequent development of new methods to measure time in archaeology, such as the radiocarbon method, the idea of this pattern of diffusion was contested (Renfrew 1972, 1976). The question of the origins of the megaliths of Europe was thus brought up again since this type of monument proved to be the earliest of its kind in the world (Renfrew 1983). Renfrew, along with others, favoured multiple origins of monumental architecture and thus the question of the function of monuments was raised, and also whether general assumptions could be drawn about societies that build monuments.

How, in fact, should we set about explaining the emergence of building activities of this kind, resulting in the construction of great monuments, by early farming communities – whether in Europe, or India or Polynesia or in north America (Renfrew 1983:6).

Since then, both the date and the exclusive ties between large scale temple and mortuary monuments and farming communities has been contested by, for example, the finding of the large and specialised Göbekli Tepe ritual site in southeast Anatolia (current Turkey). This monumental ritual site is dated to the 10th millennium BC and tied to a
hunter-gatherer society (Smith 2010). This is of course a specialised site which is found in an area where subsequently the earliest farming communities in the world emanated. Wallin and Martinsson-Wallin (n.d.) also discuss that the burial sites of hunter-gatherer communities on the island of Gotland could be interpreted as monumental sites and special places. Using detailed radiocarbon dating (Wallin 2010; Wallin and Martinsson-Wallin n.d.) we have contested prevailing ideas on the internal spatial structure of the mid-neolithic burial grounds that they developed at one end of the site and continue towards the other end of the site. Instead we find clusters of burials of various temporal statuses and it is highly likely that the many post holes found are remains of monuments of perishable materials that have been erected on the sites. These ‘monuments’ probably represented and divided various extended family or corporate decent group clusters from each another.

Present research on monuments has definitely been influenced by Renfrew’s writings and research but phenomenological approaches have subsequently contested the system theories. Bradley (1998:3) argues that the problem with the practice of archaeology (including the study of monuments) is that it is;

> not as objective as fieldworkers would like to believe; nor is it as subjective as theorists often suppose.

However, this statement makes me reflect on what Bradley would think happens if the fieldworker and the theorist is the same person? Kristiansen’s study on megalith burials of Neolithic Europe (1982) discusses the relationship between ideology and monument. He suggested that the monuments are ritualised representations of an extension of production which is controlled by the communal lineage structure. The surplus production for the lineage leaders is transformed into ritual feasting and ancestor worship which is a foundation for the emergence of chiefdom societies. He has also discussed monumental Bronze Age mounds in Jutland in terms of large scale landscape transformation where fertile soil and lands were used to invest into building these burial monuments. This showed, according to him, the centralisation of power to certain individuals who probably controlled the copper, tin and amber trade (Kristiansen 1998).
In a World Archaeology volume on Monuments and the Monumental, Trigger express the opinion that the conspicuous consumption of energy is a symbolic way that power is reinforced and expressed:

What I do claim is that a universally, if implicitly, shared understanding of the significance of energy explains their monumentality (Trigger 1990:128).

In the Pacific area the monumentality and rise of religious authority in pre-contact Hawai‘i, has been discussed by Kolb (1994) in terms of correlates between changes of temple labour investments, sacrificial offerings and political centralisation of a complex chiefdom which undergoes rapid political stratification.

Discussions and comparisons of the relationship between monuments and social complexity has also been discussed by Earle (1997), Blanton et al. (1996) and De Marris et al. (1996) with examples from South America and Polynesia being used to show how monuments function as a materialized ideology to legitimise the powers of the leaders. When discussing and interpreting the relationship of prehistoric monuments and people in West Polynesia, I have together with Clark (2007) suggested a dual-processual approach useful when exploring and explaining social complexity which goes beyond what could be perceived as static social hierarchies, e.g. the band, tribe, chiefdom and state model launched by Service (1962). The dual-processual approach has its roots in neo-evolutionary theory which stresses that a greater degree of centralisation is connected to increasing hierarchical complexity and questions if all hierarchical organisations structure in the same fashion (Feinman 1995, 2000). The dual-processual approach implies that complexity/hierarchy can be based in corporate or network strategies alike. The corporate strategies for example stress group cohesion and a cognitive model of social solidarity. The network model stresses individual leaders controlling the production and exchange of prestige goods (Clark and Martinsson-Wallin 2007:35). These two strategies can, according to Feinman (1995, 2000), and Blanton et al. (1996) operate at the same hierarchical level and could alternate through time. In my interpretation, this can allow for agency and contextual perspectives but structure and process are important as well.
The dual-processual model has also been used by Kolb (2011) when he discusses the genesis of monuments in island societies but here he uses the meta-narrative scale and a comparative method between monuments in the Pacific and in the Mediterranean. He states that the investigation of the pattern of use of monuments in island societies is significant for the study of complex societies throughout the world (ibid 2011:159). Researching and analysing monuments on a number of Pacific and Mediterranean islands with the aid of quantitative data, and theories of productive circumscription and social competition, he concludes that;

The nature of monumental construction is intrinsically linked to island isolation and social circumscription and those who used and built these monuments made logical choices for undertaking social competition and negotiating social consensus (Kolb 2011:159).

It can of course be discussed if there is such a thing as a general ‘nature’ of monumental construction and what ‘logical choices’ are; but the aim of using the dual-processual approach is an effort to incorporate dynamics into explanation of social structure and change. However, when using the meta-narrative scale this approach appears to become static.

The building of large monuments of stone and earth has, as seen above, been intimately tied to the ‘rise of civilisation’, or in other terminology ‘complex hierarchical societies’, since it is usually a labour intensive venture which demands human efforts and subsistence resources as well as specialists and/or institutions who organise the work. This discussion has been loaded with values on the scale inferior-superior, large-small, crude-elaborated and words such as ‘labour intensive’, ‘ruling class’, ‘to commemorate’ and ‘ceremonial-ritual’ have been glued to monumental material expressions with special meanings.

The longevity of monuments - the act of remembering and forgetting
Monuments, especially massive and durable structures tied to mortuary and ritual practices, differ from portable artefacts and other archaeological remains in their spatial permanence and high visibility, and as such can be tied to the public/social arena.
If built of durable materials such as stone and earth they are liable to endure over centuries or millennia if not exposed to deliberate destruction. In this way they ‘speak out’ over a long time and are not just passive backdrops in the landscape. The initial meaning and landscape context of the monument may be lost or may be difficult to understand and their rhetoric may have moved beyond the initial idea/narrative of the site (Hodder 1993). Thus the meaning of monuments has shifted both in the past and the present (Holtorf 1999; Martinsson-Wallin 2004; Martinsson-Wallin et al 2007). This makes monuments, which are often a material expression of ideology, intriguing, challenging and productive to study in terms of understanding the interaction between material culture and the creation of social space and place over time.

Using a narrative perspective, the longevity of monuments can be tied to ideology, identity, power and memory. Prehistoric monuments have for example been suggested as symbols and expressions of power and power relations that are important in the methods of social control used by rulers/elite of the society (Earle 1991, 1997; Kristiansen 1998).

Public monuments can also symbolise something ‘unchangeable’ and conservative, as commemorative forms where the identities of people who ‘belong’ to this monument are embedded, and where rituals are performed. Being a fixed, stable point in the physical and cognitive landscape can be especially important among what Lévi-Strauss denominated “cold societies”, or in other words, traditional kin-based small scale societies.

The remembering and especially forgetting of monuments from the past can be discussed as deliberate acts that are tied to an elaborate network of social habits, values, and ideals, entangled in specific historical trajectories and narratives. According to Halbwacht (1992:40) imagery of collective memory that focuses on particular events and people and their spatial reference points can be called “places of memory”. He also discusses that collective memories (shared images) are reconstructed in the context of the present, and are interdependent with the consideration of power.

Toponyms, or place-names, are rich markers of place-based narratives, events and associations. Here place and the cultural and natural landscape fuse with the built environment and these can be used as mnemonic devices (Basso 1996).
Symbolically loaded sites which integrate memory, history, and ideas have been discussed as lieux de mémoire by Norá (1989). These he describes as;

...the places in which the collective heritage was crystallised, the principal lieux, in all senses of the word, in which collective memory was rooted (Norá 1996: xv).

Memory work in relation to the archaeology of material practices has been discussed in various ways in an edited volume by Mills and Walker (2008). Here remembering and forgetting are presented as two interdependent sides of memory work.

A central paradox of the study of social memory is that memories are made during the process that includes forgetting (Mills 2008:81).

According to Mills (2008:82) there are several forms of forgetting in memory work. Secrecy, for example, in which objects may be kept out of sight, may be thought of as an act of forgetting, but the effect could be the opposite i.e. be remembered for a long period. Other forms of forgetting are through “coping errors” e.g. small unnoticeable and unconscious changes, or active deconstruction of objects that are no longer useful in ritual acts but are too potent to be discharged in any casual way. Yet an active deconstruction of memory is, according to Mills (2008:83), the de-consecration of ritual space as in the removal of architectural elements, burning etc. Halbwachs (1992) states that memory is a social practice and in the process of shaping history it links people and things though time, but there are also processes of transformation, obvious breaks and replacements within a cultural group or through aggressions from other groups that move in as conquerors.

The physical and cognitive relationships between the built environment, landscape and people are complex and tied to an array of historical trajectories. Human agency acts upon shaping and re-shaping the monuments, and monuments are actants that shape and re-shape humans as individuals and collectives, often over a long time perspective (Latour 2005). The initial intention and appearance of monuments with special meaning(s), and the way they changed, were
added to, re-used, and transformed over time, are intimately tied to their specific contexts and relationships.

Since the rise of Archaeology as a scientific discipline and in the present globalised world, the majority of ancient monuments have been alienated from their initial meaning and use. They have become historicised. This is especially true when looking at the idea of, and criteria for, the nomination of Cultural World Heritage sites. There is an over representation of nominations for historicised monuments located in the Western World. According to the World Heritage Convention cultural sites are defined as:

- “monuments: architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science;
- groups of buildings: groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science;
- sites: works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view”.

This has been criticised and opened up for nominations of cultural landscapes and also for nominations of intangible World Heritage which can be more valued than monuments, particularly in many developing countries with a colonial history. In the Pacific context it can be an improvement that intangible values and cultural landscapes have a chance to be nominated and opens up the possibility for more sites to be included alongside the built environment with indigenous and colonial connotations alike. However, the selection of places to be remembered also has the effect that other places are forgotten. As always, the coin has two sides.
MONUMENTS, MONUMENTALITY AND THE LANDSCAPE

The built environment, cultural landscape and the natural landscape in prehistoric small scale traditional societies often have an interdependence and relationship to one another. The natural landscape with its hills and valleys, streams, lakes and oceans and their natural transformations by erosion, shoreline displacements and volcanic eruptions etc., are integrated and physically and mentally transformed by humans and thus become cultural landscapes. Monuments are part of these cultural landscapes, and they are shaped and re-shaped by human agency. The monuments themselves also have an influence on human perception and transition of landscapes in a long time perspective. I have for example elsewhere discussed that the monuments of Rapa Nui, the *ahu*, usually are erected on outcrop landscape features (*puku*) (Martinsson-Wallin 2000). High locations that make the structure even more monumental and outstanding are common in all kinds of ritual/mortuary monuments. In small scale traditional societies monuments with ritual connotations often have relationships to locations thought of as liminal zones, e.g. on the edge of land and water, land and sky, and land and holes/depressions in the ground. Natural places already invested with spiritual qualities could in this way be reinforced and become nodes in a group’s cognitive chart of the landscape and express materialised ideology tied to groups and individuals representing the group. Such sites can form nodes to express identity and belonging as well as to impress others and control, e.g. include and exclude groups and individuals, with the aid of ancestors, gods and spirits. These are thus arenas to mediate among people and among people and the gods.

A good example of this is found in Rapa Nui where the large ceremonial structures are found generally in each extended family’s (corporate decent group) territory, usually placed at the edge of the land and sea often on outcrops (Martinsson-Wallin 2000). Their high wall facades face the sea and according to oral traditions the use of the sea for fishing and passing these monuments was regulated by the high chiefs and surrounded by *tabu* regulations (Métraux 1940; Ayres 1975). The statues that were erected on the platforms, the *moai*, are according to Rapa Nui tradition, part of an ancestral cult and they symbolise dead chiefs who became gods or demi-gods in the afterlife. They are set up on the platforms and faced towards the land (*kainga*) of the corporate
decent group (*mata’a*) (Métrux 1940; Routledge 1917). The statues were made in the quarries of the Rano Raraku cliff and transported to the ceremonial sites on the coast where they were modified with an ‘eye opening’ event. The eye sockets were hollowed out and eyes of coral with pupils of red scoria were inserted (Martinsson-Wallin 1994, 1997, 2000; van Tilburg 1995). When copies of the eyes have been inserted in the statues, the expression of the statues becomes totally different, (and using the phenomenological approach), they seem at the same time to protect and control the land and the people they are gazing upon (Figure 2 and see front cover).

![Figure 2. Copies of eyes are inserted by Alberto Ika in moai statues at excavations in ahu Nau Nau in Anakena in 1987 (Photo: Helene Martinsson-Wallin).](image)

There is a distinctive difference between the view of the monuments as incorporated into the landscape setting and the view of the landscape as backdrop for the monument. There are also distinctions between monuments and monumentality. A landscape or landscape feature can be perceived as monumental and a built environment of large dimensions can have an aura of monumentality. There could also be an interdependence of monument and landscape, where they can reinforce
each other to create the sense of something monumental, overwhelming and grand. The strongest advocate for a phenomenological approach to landscape and monuments in archaeological research is Christopher Tilley with his classic publication *The phenomenology of landscape* (1994). Here he melded ideas from anthropology (c.f. Barth 1975 etc.) with social theory and philosophy (c.f. Heidegger 1927; Merleau-Ponty 1962) to create a new application of cultural relativism for the interpretation of spaces and places. Many words have since been written about space, place and landscape inspired by the phenomenological approach.

Neolithisation, and thus opening up and transformation of the landscape for cultivation, have been discussed (Hodder 1991; Bradley 1998 etc.) in relationship to the rise of complex societies and the construction of monuments. An anthropological study on traditional farming communities in Madagascar by Bloch (1995) recounts that the villagers were, unlike him, not sentimental about cutting down the forest to open up the landscape;

One evening, sitting on a rock side-by-side with an older woman I knew well, indulging in the somewhat sentimental conversations which she much enjoyed, looking from the village to the forest lit up in the reds of the setting sun ..., I thought the moment had come to make her say how much she liked the forest and regretted its passing, and so I asked her once more... After a long reflection she said wistfully that, yes, she liked the forest. ‘Why?’ I asked eagerly. ‘Because you can cut it down’ she replied. (Bloch 1995:64-65)

When open, the landscape can be perceived as more monumental and easier to control. The cutting down of the palm tree forest on Rapa Nui to open up for agriculture is seen as an ecological catastrophe but indeed gave room for fields of sweet potato and made the landscape monumental by reinforcing the monumentality of the ceremonial sites...

Here the agency of culture has been stressed, and includes both the transformation of the natural environment by man but also the material environment built on the landscape. Nominating cultural landscapes as World Heritage sites has been an active strategy for UNESCO especially in the Pacific region, since the sites and transformations of landscapes...
can include the indigenous culture as well as the colonial (Smith and Jones 2005) (Fig. 3)

Cultural landscape as defined by the World Heritage Committee is:

1. "a landscape designed and created intentionally by man"
2. an "organically evolved landscape" which may be a "relic" (or fossil) landscape" or a "continuing landscape"
3. an "associative cultural landscape" which may be valued because of the "religious, artistic or cultural associations of the natural element"

ARCHAEOLOGICAL INVESTIGATION OF MONUMENTS

Practices are what have been/is actually done by repeated actions (habitus). This could be interpreted as intrinsic to, but also beyond the narrative; the why, the when and by whom and for whom. Dating of these discrete node practices is of course a difficult task and in archaeology we use methods belonging to natural science research, such as radiocarbon dating, based on system theories and general laws.

The quantification of material culture became important in archaeological research in the 1970s-80s and the use of the hypothetic-deductive model became standard for any serious archaeologist. In my previous analyses of ceremonial structures in Rapa Nui (Easter Island) I have also used the method of quantification but came to the conclusion that it was very difficult to quantify the structures or structural features to arrive at specific types of monuments since they are complex structures which have been altered and added to over time (Martinsson-Wallin 1994). I thus dismantled the complex structure to singularities and then put them back together again to be compared both between and among their singularities and pluralities within and among other structures on Rapa Nui, with the aid of descriptive and multivariate statistics, yet incorporating qualitative aspects to the analyses (Martinsson-Wallin 1994). I think that contextual approaches are an important means to gain insights to the significance of the material culture studied, in this case monuments with ceremonial connotations. When contemplating my previous research and looking back in the rear view mirror that work lacks the surrounding analysis including the natural, built and cognitive landscape alike. To make an analysis including nature as a medium and culture as the agent is
something that I and Paul Wallin are aiming for in our joint article on Rapa Nui monuments in this volume. In one way the places we discuss can be treated as nodes in a network of social relations and narratives, especially when incorporated in oral traditions and as statements of legacy to various land areas.

The dating of monuments are difficult but dating of excavated monuments on Rapa Nui and Samoa has been discussed extensively by Martinsson-Wallin 1994, 1998, Martinsson-Wallin et al 2007, 2013. Wallin and Solsvik (2006:4) have also developed a model that divides structural history into four phases of activity to be dated when investigating the *marae* structures of Central Polynesia, as follows:

(1) Activity which took place prior to the building of the structure. This could be represented, for example, by cultural layers and clearly defined features located stratigraphically under a wall or courtyard.

(2) Activity carried out during the building of the structure. This is often a rather complex stratigraphic problem, but useful dating samples consist of charcoal, bone etc., that can be tied to the building phase, for example fires inside *ahu* (Martinsson-Wallin et al. 1998:6), sacrifices placed under cornerstones, and possibly branch coral incorporated in the fill of the *ahu*.

(3) Activity that occurred during the use of the structure. This can be represented by dating samples from sacrificial deposits or burials, for example, from behind *ahu* or in pits that can be tied to features of use, re-building or expansion of the structure. Scattered charcoal, coral or other dating material in fill has a quite limited value, since it may have originated in earlier activities and been incorporated in the later building of a feature.

(4) Activity which took place on a site after the structure ceased being used for its original purpose. Dateable material in this context is often problematic. Samples recovered from *marae* surfaces or between courtyard stones could have been deposited at any time, including during archaeological restorations, etc. They generally have very limited value.

Currently there is an intensified discussion going on in Pacific Archaeology about how to handle and use radiocarbon dates and the use of chronometric hygiene, a concept which first was coined by
Spriggs and Anderson (1993). At that time it was ‘anything goes’, and in many cases the radiocarbon dates were interpreted in all kinds of ways with little concern for context or assessments in terms of calibration, the old wood problem, or the marine reservoir effect. Several hundred published dates from the East and South Pacific have recently been re-assessed by Wilmshurst et al. (2011) concerning colonisation events, mainly. This research has changed the dates of colonisation events for these areas to much more recently than previously thought. However, not all Pacific Archaeologists totally agree with this view, I among them, since too rigid use of statistics on radiocarbon dates (e.g. radiocarbon hygiene) means that only statistically significant samples are considered which in the worst case could lose the sight of highly significant synchronic or punctuated events which fall outside the acceptable frames. A way to work statistically with the radiocarbon dates to try to get around this is to use the Bayesian modelling but;

In particular, however much statistical analysis we do, $^{14}$C dates are still reliant on the underlying assumptions on the $^{14}$C method - any problems with the samples, their context, their association with each other, or with the calibration curve, will have implications for the accuracy of our chronologies (Bonk Ramsey 2009:358).

Dating practice and changes in monuments are, as stated above, difficult. Agency and actants are not usually included in the rigid interpretation of radiocarbon dating but a way to try to include them could be to say; - this is what it looks like now; this is the context that it is placed in now; this is the role it plays now, but it has many meanings and perspectives which are incorporated and added into the structure over time, including conscious acts of remembering, adding on, forgetting, and concealing. This shows complexity and a number of activities of various temporal statuses tied to the monuments. Discussion of initial, secondary etc. use is, according to me, tied to concept of agency, context and social and cultural interactivity and it is important to understand what one is trying to date.

To investigate monument building or for that matter settlement sites with archaeological methods is important in its own right. This can be an additional way to understand the dynamics of the rise and change of Polynesian chiefdoms and provide another frame of interpretation as in, for example, the triangulation method which uses linguistics,
archaeology and ethnohistory (co-analysing data of various kinds often of various temporal status.

**MONUMENTS IN THE PACIFIC**

As a colonial memory from the contact era and beyond, the vast Pacific ocean with its *Sea of Islands* (coined by Hauofa 1994) is still divided into three areas labelled; Polynesia, Melanesia and Micronesia (partly problematized by Clark 2003). These areas, and also various islands or island groups in the areas, have different historical trajectories and variable settings for the development and perception of monuments. When European explorers ventured into the Pacific area from around the 18th century onwards, attention was drawn to stone monuments such as *marae; heiau* and *ahu* structures in East Polynesia and *langi* and *tia seu/tia seu lupe* in West Polynesia. The enigmatic stone statues and platforms (*ahu* and *moai*) of Rapa Nui (Easter Island) (Heyerdahl 1952; Flenley and Bahn 2003; Van Tilburg 1995) and the monuments of Nan Madol and similar sites on Kosrae have attracted special attention (Morgan 1988; Rainbird 2004). In the Micronesian area there are also besides shrine monuments of stone, giant stone money in Yap and latte houses (Morgan 1988). In recent years, large earthworks in the Palau group have also attracted attention (Liston 2011, 2013).

In the Melanesian region, monuments are ambiguous and in early writings and accounts a so-called megalithic culture (Riesenfeld 1950:14), was said to belong to stone-using “fairer skin immigrants” (ibid: 75). In other words, the ‘otherness’ of stone monuments in the Melanesian area was thought to be external (ibid). These ideas have been contested but very little research has been carried out in relation to monuments as temples or shrines except in the Solomon Islands (Thomas 2009; Walter et al. 2004,). This subsequent research show that Melanesian monuments are heterogeneous and, for example, in the Solomon Islands the building of shrines and platforms are associated with *topogeny*, which is the projected externalisation of memories that can be lived in as well as thought about (see Thomas this volume). Other than research in the Solomons there has been very little attention to monuments or *places* with ritual connotations. The reason for this might be a rejection of the Western focus on large stone monuments as an expression of a complex society with the ‘invisible’ label, less complex- inferior/more complex-superior etc. (see above). A holistic
research which considers the contextual relationships between people, landscape and things would be a better foundation to understand monumental expressions, whether they include dominant features in relationship to their natural or built surroundings.

Two sites in the Pacific which are nominated World Heritage sites are monumental in various ways: the Roi Mata mound in Vanuatu that became a World Heritage site in 2010; and the ancient extensive agricultural landscape of Kuk in PNG that became a World Heritage site in 2009 (Muke et al. 2007). The latter is a large scale modification of the landscape and has evidence of early horticulture using irrigation techniques, and this raises questions about the interpretation of monumentalism and if such sites really could be included into the terminology of a monument? It is an interesting case of a large scale investment of Neolithisation efforts which did not lead to the building of mortuary monuments or temples of durable materials in this place.

A research focus on monuments in the Pacific islands came with the introduction of anthropology/ethnology and archaeology in the 1920s. Especially the American archaeologist Kenneth Emory devoted time to survey many stone remains in Polynesia, especially the Society Islands, the Tuamotus, the Line Islands and Nihoa and Necker in the Hawai’i Archipelago (Emory 1928, 1933, 1934). Here the shape, features and names of ceremonial sites made of stone were discussed as important material culture used to understand migration patterns in Polynesia. These ceremonial sites, named marae, ahu, heiau and me’ae were important study objects tied to the question of where the Polynesians originated from and how and when these islands were settled. Current research on East and Central Polynesian ceremonial sites point to the fact that the initial monuments on Rapa Nui are more elaborate and date around one century earlier than the ones in Central Polynesia, e.g. the area from where the people who colonised Rapa Nui came from (Martinsson-Wallin et al 2013; Martinsson-Wallin and Crockford 2002).

Thor Heyerdahl, who initiated large scale archaeological research on Rapa Nui in the mid-1950s, thought that the stone statues of Rapa Nui (moai) and the platforms they were standing on (ahu) were of pre-Colombian origin and tied to the prehistoric complex societies of Peru, Ecuador and Colombia. He considered that South-American Indians were the initial colonisers of the East Pacific Islands (Heyerdahl 1952, 1999). This was in opposition to his contemporary peers and
subsequent research of material culture and genetics has not supported the idea of American Indian initial colonisation of East Polynesia, but instead shows evidence for a Polynesian-South American prehistoric contact (Martinsson-Wallin 1994; Storey et al. 2007 Ramirez and Matisoo-Smith 2010; Thorsby 2010 etc.). If and how this interaction has influenced the culture on Rapa Nui and the East Polynesian area, and in what temporal frame, still needs further research efforts.

Monuments in Hawai‘i have been discussed by Kolb (1994) and comparisons between monumental expressions in Hawai‘i and Tonga have been studied by Kirch (1990).

Research on monuments has been used as a comparative tool to provide general theoretical ideas about migration patterns in the Pacific, especially the East Pacific and regional/local developments. Since some monuments still were in use at European contact and traditional history/oral traditions are tied to certain monuments, this can provide type defined names for structures as well as specific place/structure names. Thus the method of triangulation (archaeology/ethnohistory/linguistics) has been used in this research. A phylogenetic approach to explain migration patterns and internal development has been used in Pacific Archaeology. This theoretical model promotes the idea of a common Ancestral Polynesian Society (APS) (Kirch 2002).

According to Kirch and Green (2001) the initial colonisers of Polynesia brought a ready-made cultural and social ‘package’ which evolved differently on various islands due to the landscape settings and environmental limitations. In a broad sense this view seems to be in agreement with current research results but when it comes to the building of monuments on various islands in the Pacific there is, for example, indications that elaborate stone and earth monument building is a slightly earlier phenomenon in the Oceanic rim than in the central parts (Martinsson-Wallin et al. 2013, Liston 2013). The social complexity of many Pacific island societies is in some cases likely to have been more elaborate just before European contact and that contact generated rapid social change (see Meleisea 1985; Kirch 2012 for example). This scenario could be true in many cases but the evidence from Rapa Nui points to a society where the social relations and hierarchies oscillated over time and at least two events of social unrest are indicated by deliberate destruction of statues during two
phases (Martinsson-Wallin 2000:53). The earlier destruction of statues and re-building of the monuments could possibly be explained by external movements and contacts during the 12-13th centuries, but this needs further research. The latter such phase, the so called huri moai phase when the toppling of the large statues occurred during the 17th-18th centuries was probably not triggered by external influences but a combination of internal social and ideological competition and over-exploitation of the environment due to demographic stress. The importance and focus on the tangata manu (bird man) at the end of this restless period, could be interpreted as the society moving towards an even more complex hierarchy than previously had European contact in the 18th century not intervened (Wallin and Martinsson-Wallin 2010).

THE CASE STUDIES – CURRENT RESEARCH ON MONUMENTS AND PEOPLE IN THE PACIFIC

The case studies presented in this volume can be read as presenting research results on monuments tied to specific settings in various islands and island groups, but they can also be read as representing the variety of points of view and research traditions of people working on the archaeology of monuments in the Pacific. Thus this volume seeks to be holistic and explore multi-layered relationships between monuments and people in the Pacific region and the aim is not to present one theoretical standpoint or research design.

Melanesian case studies

The two articles on Melanesian monuments discuss the concept of monumentalism and describe local practices. Timothy Thomas explores the practice of building shrines during the past 700 years in the Solomon Islands (particularly New Georgia). Chris Ballard and Meredith Wilson use examples from two World Heritage sites, the extensive Kuk agricultural site in Papua New Guinea and the Roi Mata domain in Vanuatu to critique the concept of monumentalism in regard to place.

The Solomon Islands shrines

Thomas poses questions about the relationship between platform/shrine building and head hunting and the concept of mana. The usual sense of monumentality as involving large dominant structures is challenged in the shrine structures that are the focus of his
investigation since many are small or at least built of stones that lack megalithic characteristics. But they represent important ancestral monuments, invested with social memory and meaning. Their presence intervenes in inter-human and landscape relationships and how these oscillate on the spatial scale through time. He writes; *The variations we see in ritual monument construction across time and space in the New Georgia group involve transformations in the scale and arrangement of a set of components that persist in all contexts.* There are regional differences but Thomas considers these to be transformations of a common ancestral practice of shrine construction. A raised platform of stone and/or soil seems to be a recurring theme for ceremonial/ritual sites. Since these structures continued to be in use throughout the period of European contact and into the 20th century, there are good ethno-historical accounts of their use and associations. Thomas describes the changing significance of these sites into the post-colonial era, and discusses how they work as material nodes in the production of history. In doing so he argues for the importance of the narrating and the dwelling perspective.

*Monumentalism in Melanesia*

Ballard and Wilson discuss monumentalism using the Kuk agricultural site in Papua New Guinea, a large scale landscape modification which according to them could be seen as monumental, and compare it with the Roi Mata burial site in Vanuatu. It is interesting to note that domestication and intensification of agriculture at the Kuk site did not result in the construction of monuments of stone and soil. In their paper they discuss what monumentalism is and present a critical standpoint of this concept in relation to global and Pacific understandings. In doing so, they raise the issue of colonialism and question the European megaliths as templates for understanding complex social relationships in the past. They also question the long standing ideas of the correlations of monuments with the diffusion of people, in particular questioning Riesenfeld’s study of megalithic culture. Ballard and Wilson draw our attention to “places” that could be monumental or have monumental dimensions on a cognitive level. They also mean that agency plays a part in how society chooses to relate to the monumental, and wish to avoid placing value on this in terms of inferior-superior, or taking it for granted that monuments are tied to domestication and population increase and complex social relations in the Pacific.
Melanesian setting. What is quite obvious when reading the Melanesian cases there are great diversity in this area.

**Micronesian case studies**

Turning to Micronesia there are four papers of which Jolie Liston’s paper discusses her recent archaeological work on the large earthworks of Palau situated in the northwestern rim of Micronesia. The others focus on stone monuments such as the shrines and mortuary structures of Nan Madol on the Island of Pohnpei and the temple of Menka in Kosrae both in eastern Micronesia. When it concerns archaeological research on the famous Nan Madol site, William Ayres is somewhat of a pioneer and he and Katherine Seikel discuss burial practice based on excavations in the small shrines. On the other hand César Esteban who is an astronomer, discusses the orientation and astronomy of monuments and landscape features in relation to oral traditions. Felicia Beardsley gives new insights to shrine like structures found in the jungle of Kosrae and their relationship to oral tradition, landscape features and to Nan Madol.

**Palau earthworks**

The earthworks in Palau’s archipelago are found on the larger of the islands, Babeldoab, and they have long since been seen as natural mounds by the locals. However these are built environments and the landscape has experienced large scale human modification. Liston has over the past ten years devoted her efforts to survey, excavation, dating as well as protection and management of these sites. In her paper she discusses the implication of the large scale re-modelling of the landscape and touches upon their ritual use as well as what these monuments signal in terms of social organisation and intra-island relationships. Her interpretation of the earthworks is that they have ritual and symbolic meaning as well as being important places on the socio-political arena. She states in her conclusion that; They [earthworks] became enduring symbols of spiritual and ideological power to sanction religious authority and the emerging elite. In this way, earthworks promoted social cohesion by renewing ancestral and traditional connections and bonding the community to the land, at the same time they were powerful conduits for institutionalizing belief systems. Over time she sees changes in the earthworks which she ties to changes in socio-political complexity using a dual-processual model of
explanation. Two points of interest are that earthworks in Palau are early forms of monumentality and landscape transformation in the western rim Pacific area and that they also lack oral traditions and are detached from the current inhabitants. This raises questions about acts of obviation and why this has occurred and the implications this has for contemporary cultural heritage management.

**Nan Madol site of Pohnpei**

Turning our gaze to eastern Micronesia, we come to the area that has been called the *Venice of the Pacific*, the ‘city’ of Nan Madol. Here around 100 artificial islands have been constructed of soil with outer walls of basalt prisms and separated by canals situated in the lagoon on the coral reef rim of the southern side of the small island Temwen. This small island is in turn situated off the eastern coast of the island Pohnpei. Oral tradition and ethno-historical records state that this place was a ritual site and the political and ceremonial centre of the Saudeleur dynasty and a settlement for the nobility (Ayres 1990). Numerous speculations have occurred but previous archaeological investigations by Ayres have shown that this area was utilised from around the 8th century, and the megalith building was initiated around the 13th-14th centuries (ibid 1990).

Ayres and Seikel’s paper explores the burial practices at Pohnpei in an effort to understand past cultural behaviour. Using archaeological methods they address what these types of remains and burial practices can reveal about the structure of past Pohnpeian society. Special attention is given to burial practices tied to so-called *lolongs*, which are elaborated tombs. To understand the full set of cultural behaviour the authors argue that it is important to investigate differences in the *lolong* structures on a time-space-social scale and also get evidence from other forms of burial practice and investigate regional variations in tomb construction. They present research based on archaeological survey and excavations to indicate the variations among *lolong* structures. In their conclusion they write that: *A hypothesis addressed here is that the link between burial and lolong architecture as graves provides a basis for archaeologically differentiating the social status of the highest status elements of political communities.*

The other paper in relation to Nan Madol is the one by Esteban and he discusses the orientation and astronomical alignment of the built and natural environment at the site. Here he touches on an issue that is
of a more phenomenological nature even if the methodology relates to the natural sciences. Archaeo-astronomy is a branch that is especially tied to research on stone monuments such as temple grounds, stone circles and mortuary monuments. On the one hand this research is based on the knowledge that in many traditional societies cardinal points, pronounced landscape features, the sun, the moon and stars have been very important in the practice and mindscape of people. On the other hand this type of research can be seen as on the ‘fringe’ of archaeological research depending on its use and there is a danger of over-interpretation and fanciful explanations. Esteban who is an astronomer presents a method of measurement analysis and he discusses probabilities of the importance of cardinal points and alignments to, the sun, moon and certain star constellations in regard to the building of Nan Madol and especially certain important parts of it as burial sites. Esteban bases his study on field work where he has taken measurements of the alignments of walls and mortuary structures. In the interpretation he uses comparative studies including oral traditions and archaeological research on the specific setting of Micronesia – referring, for example, to the intricate sidereal compass of Micronesia which has been vital to the cultures in this area. In his conclusion he states that; The results indicate that a central structure of Nan Madol, Nan Douwas, is fairly well oriented with respect to the cardinal points. We argue that this arrangement has a singular meaning in the framework of the traditional Pohnpeian cosmology. Esteban also suggests that Nan Madol and other landscape features align with the rising of Orion’s belt which is an important star constellation in regard to the sidereal compass of Micronesian societies. The phenomenological aspect of monuments and their relationship with people’s mindscape and the natural and built landscape is part of archaeological research which for example has been discussed extensively by Bradley (1998) and Tilley (1994). This approach is important in the interpretative process but it also has issues. In my opinion this type of interpretative research model requires a milieu approach, which Esteban has tried to aim for. Further studies which incorporate the full set of nature, seascape, skyscape and landscape in relation to people and monuments might be productive in regard to archaeo-astronomy but we should avoid indulging in the mystical and magical realm.
**Menka temple structures at Kosrae**

In the paper by Beardsley, she also investigates sites with ritual connotations but on the nearby island of Kosrae. Here she highlights the temple structure of Menka, which could be seen as the antithesis of monumental in relationship to Nan Madol and the monumental site of Lelhu on Kosrae. Beardsley suggests that upon closer inspection the Menka site is tied to monumental expressions and it has specific relationships to the surrounding landscape. She stresses the importance of understanding the temple remains at Menka in its full context and by doing so she states that this gives a ... powerful message that Menka was a site where the production of a religious narrative and ideological behaviour imposed by an ancient belief system were orchestrated. If, however, one were to view the single compound in the upper temple complex by itself, without the benefit of its surrounding features, it could easily be dismissed as just another simple, small and insignificant site. Here, Beardsley points to the fact that it is important to restrain our own value-loaded ideas that larger stone complexes with ritual connotations were more interesting or significant than smaller ritual stone complexes and the importance of contextual approaches in the research.

**Polynesian case studies**

Many of the islands in Polynesia, especially in the eastern and southern rim, are among the last settled places in the world. On the other hand the islands in western Polynesia such as Tonga and Samoa are among the earliest populated islands in the Polynesian area where the distinct Polynesian culture evolved and probably the core of the Polynesian diaspora. Even if there are strong relationships in culture and language among all Polynesian islands there are also differences especially in monuments with ritual connotations. There are stronger similarities among monuments in the central and eastern Pacific (the so called *ahu-marae* complex) than with west Polynesian monuments. So far, the chronology of *ahu-marae* style monuments shows that the eastern rim islands, especially Rapa Nui (Easter Island) have the earliest and most elaborate monuments (Martinsson-Wallin et al 2013). However, a lot of attention has also been placed on research on monuments with ritual/ceremonial connotations especially on Rapa Nui (Easter Island) featuring giant stone statues and megalithic temple platforms.
There are six papers that discuss monuments in Polynesia. Two papers by Helene Martinsson-Wallin and Geoffrey Clark, respectively, discuss monuments of earth and stone in relation to oral tradition, archaeological excavation, dating and social memory in West Polynesia. Paul Wallin’s paper investigates the changes in ceremonial marae monuments and their relationship to the rise of the war god ‘Oro in the proto-historic Society Islands. Monumentality and ritual behaviour in the South Pacific and the lack of stone monuments there are discussed by Atholl Anderson. In a joint paper by Helene Martinsson-Wallin and Paul Wallin they test the traditional land divisions on Rapa Nui (Easter Island) to provide spatial perspectives on ceremonial complexes. Yet another paper on Rapa Nui monuments by William Ayres, Joan Wozniac and José-Miguel Ramirez discusses the dating of statues, the moai, and the relationship between the statues and ahu monuments and the deliberate destruction of these sites in late prehistory.

West Polynesia
The Tongan langi structures, featuring chiefly burials, are discussed in relation to social memory by Clark. He bases his discussion on long standing engagement in survey and archaeological research on ancient royal tombs of the Tu’i Tonga dynasty at the central place of Lapaha on Tongatapu Island, and explores this in relation to the recorded names of the structures and knowledge about who is buried in the structures. This is done in an effort to understand political change in the Tongan maritime chiefdom. Here he discusses inscribed memory which relates to the structures and how they are built to display a certain political and social agenda and incorporated memory or cultural knowledge that is transmitted by everyday routine. A decline of knowledge of names of the structures and who has been buried in them is seen as synonymous with the decline in tomb construction indicated by archaeological research.

In my paper on the Samoan mound building tradition I explore results from archaeology compared with oral traditions. The focus is on two large mounds; the Pulemelei mound in Savai‘i that was investigated in 2002-2004, and minor excavations in relation to the large Laupule mound in Apia excavated in 2010. In the paper it is discussed that these mounds could have a connection to the Tongan expansion in the 12-13th centuries and that Samoan society was probably more hierarchical in prehistory than after European contact. This is also indicated by the
oral traditions. The paper touches on the lack of management and legal protection of built material culture. In this context I discuss the cultural practice called *fa Samoa*, and that extended family affairs are more important in people's lives than the affairs of the state. Here it is suggested that the prehistoric and historic built environment is stigmatised as pagan in current Samoa and thereby subjected to oblivion and hidden away and destroyed in favour for building large shiny churches.

**South Polynesia**

In the paper by Anderson he discusses why monuments with ritual connotations did not evolve in South Polynesia. Results from archaeological excavations, oral traditions and ethno-historical records are used. Various explanations for why ritual monuments did not occur are explored but Anderson favours; *the widely-accepted proposition that monumentality in various forms, including defensive structures and ritual sites, was a consequence of continuing population growth*. Anderson suggests that the consequence is a weak political integration in South Polynesian societies and this did not support the building of large ritual structures, at least not of durable materials such as stone.

**East Polynesia**

Three papers discuss monuments in the central area of the *ahu-marae* complex, placing their work within longstanding research traditions. The authors argue for new approaches to provide alternative perspectives on social practice and change based on archaeological research and oral traditions.

In Wallin’s study he discusses the changes in building tradition of the *marae* complex in the Society Islands in the light of fashion and zeitgeist tied to the rise of the importance of the war god *'Oro* in late prehistoric times. He discusses how and why practices changed as well as how some practices were upheld, and how this is tied to the socio-cultural sphere where high chiefs played an important part. To invent and control, include or exclude others, through exotic and new fashion is, according to Wallin, a way to exercise power. This power is materialised in large new monuments to honour and worship this strong god.

One of the most enigmatic expressions of materialised ritual activity in the Pacific realm is found on Rapa Nui (Easter Island). The giant
stone statues, the *moai*, and large scale stone platforms, *ahu*, have been discussed since European discovery in the 18th century. Martinsson-Wallin and Wallin discuss monuments and ethno-historical clan territories on Rapa Nui to explore if the general Polynesian senior/junior competition concept can be traced in the monumental architecture of Rapa Nui. They use archaeological data on monuments and also landscape variables in a multivariate statistical correspondence analysis. This shows that status is expressed differently among the prestige monuments in the two main clan districts *Ko-tu’u* and *Hotu-Iti*. They suggest that the distinctions around large *ahu* structures express the tensions within local groups and their belonging to the larger clan group. A detailed analysis based on archaeological research is also done at the local level on the *ahu* structures of Heki’i and Ra’ai in the La Peruous area. Here they also find that senior/junior competition is indicated, and it is on the local level that powerful chiefs could exert their power and express themselves through commanding the labour of the bulk of the population.

The other paper on Rapa Nui by Ayres, Wozniac and Ramírez discusses *moai* at the *ahu* site Uri a urenga te mahina on the south coast. The team have conducted detailed archaeological excavations and restoration work at the structure. They suggest that the context of the statues at *ahu* sites tells us about the logistics of using stone images, the specific functions of statuary and their meaning systems. The meaning attached to *moai* images is thought to be closely associated with the concept of *mana*, which is embodied in the statuary that represented the ancestors of the community, in this case, with the chiefs and religious leaders of the community. Even after the deliberate destruction and toppling of the statues in late prehistory, the statues and statue parts remained active sacred agents. It is apparent that the statues reflect a burial concept parallel to how humans were treated, that is, burial at an *ahu*.

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SHRINES IN THE LANDSCAPE OF NEW GEORGIA

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Abstract: In this paper I examine the role of constructed shrines in the landscape history of the New Georgia region of the Solomon Islands. I trace the emergence and role of shrines in the sociality of prehistoric New Georgia, and examine their dimensions of formal variation connecting these to patterns of social practice. I argue that the agency of shrines was genealogical, and that they were linked together by topogenic relationships across the landscape. Shrines are sites which reveal personal agency to be emplaced, and not simply an expression of autonomous will. Cumulatively through time, practical engagement with such places can be seen to embody a process whereby contemporary action enfolds past endeavour – and this creates a continual movement from Being to Narrative. Consequently, I also examine the role of shrines in contemporary Solomon Islanders debates about the past and its meaning, and discuss shrines as nodes of political conflict in the ongoing production of New Georgian sociocultural landscapes.

INTRODUCTION
The prehistoric monumental architecture of the New Georgia group of the Solomon Islands (Figure 1) is reasonably well documented in comparison to elsewhere in Island Melanesia. Several projects have mapped and analysed sites on many of the main islands in the archipelago, though often these studies have not seen wide dissemination or publication outside grey-literature sources (Chikamori 1967; Wall and Kuschel 1975; Tedder 1976; Miller 1979; Reeve 1986; Nagaoka 1999; Walter and Sheppard 2000; McKenzie 2007).

Amongst the types of site recorded in these studies are stonework fortifications, defensive and boundary walls and enclosures, structural platforms and terracing, wharves and canoe landings, and a variety of ritual sites. The latter are the class of site perhaps most deserving of the appellation ‘monument’. Certainly many other stonework structures are
large and must have involved considerable investment of labour and social coordination – coherent site complexes like the fortification of Nusa Roviana (Thomas et al. 2001), or even the agricultural terracing and water management systems of Kusage (Tedder 1976), involved extensive landscape modification. However, only ritual sites, and particularly ancestral shrines, bring into view historical memory and memorialisation as an important dimension of their social role.

In this paper I focus on the stonework shrines of the region, describing how these vary in form and construction through time and between islands. My goal is to elucidate the role of such sites in ritual practice and wider social life, examining how their form was connected to their function. For the most part these sites are not particularly large, and whilst the best preserved are often complex, formally defined structures, some can appear to observers as little more than diminutive piles of rubble scattered with refuse (e.g. Somerville 1897, and see below). Nevertheless their significance belies their appearance, and the role they played in the structuring of socio-political life in the region presents important challenges to the way we conceive of the

Figure 1. The New Georgia Archipelago, Solomon Islands
monumental. In the following I document how, in practice, ritual sites were linked to create temporal landscapes which memorialised the long term efficacy of social groups. Rather than think of these sites as distinct individual and separate structures of minimal scale, we must think of them instead as nodes in a monumental landscape.

REGIONAL VARIATION AND TRANSFORMATION OF RITUAL SITES

Elsewhere I have argued that the late-prehistoric populations of the New Georgia region were engaged in a ‘community of practice’ focussed on a ritual system linking ancestor veneration and headhunting with political power and social reproduction (Thomas 2009). Despite linguistic diversity (there are 12 distinct languages in the region) and numerous tribal groups that often claim autochthony, people shared a common ground in the basic precepts and practices relevant to social reproduction across the archipelago.

The basic components and workings of this ritual/political system and its embodiment in a landscape of monumental shrines are well understood and have been described in detail in several publications, particularly for the Roviana region (Sheppard et al. 2000; Walter and Sheppard 2001, 2006; Thomas 2009: 122-9). Briefly, the social agency of tribal groups and their leaders (chiefs) depended on the propitiation of the potent spirits of dead ancestors. Through propitiation, spirits could be induced to accompany the living in important endeavours (food production, artefact manufacture, warfare, political and ceremonial activity etc.) making these mana – successful or efficacious. Shrines, housing ancestral skulls and shell valuables, were the focal point of spiritual propitiation, standing as elements of a funerary practice that served to ensure that the potent remains of the dead were embedded in the landscape (Walter et al. 2004). By controlling access to shrines, leaders controlled the ritual life of the community and, by extension, other realms of ritually dependent practice.

Headhunting was the structural inverse of ancestral enshrinement in that one of its effects was to deprive enemy groups of the ability to enshrine the skulls of their own ancestors (and thus the ability to secure and sustain mana). Captured heads were displayed in the rafters of war canoe houses at the water’s edge, in opposition to the skulls of chiefs housed in landward shrines (Walter and Sheppard 2001). In late
prehistory tribal groups came to coalesce around chiefly lineages embodied by men who had achieved fame for their ability to manage and conduct successful headhunting raids against neighbouring islands. Success at taking heads was one of the ingredients of ancestral sanction made manifest as *mana*. Headhunting success promised a state of perpetual efficacy for leader and tribe, and was thus part of a project of constructing local utopias where “living well” (Dureau 2000: 86) meant ancestral spirits joined their descendants in all endeavours: gardens would be bountiful, fish would be caught, enemies would be vanquished, and the tribe would prosper.

In the early days of European incursion, the key material and social components of this ritual/political system were witnessed throughout the New Georgia group (Guppy 1887; Woodford 1890; Somerville 1897; Hocart 1922). The earliest ethnographer in the region, A.M. Hocart, conducted intensive research on Simbo, Roviana, Vella Lavella and Kolombangara in 1908 and documented, often in great detail, similar ritual beliefs and practices on each island (Hocart MSS). But this similarity was not passive: people actively traded magical knowledge, ritual techniques, artefacts and charms, and shrine sequences branched out between islands. More often than not, knowledge of the geographical source of magical things was retained and incorporated into ritual practice (Hviding 2014, and see below). The project of securing and deploying the efficacy of ancestral spirits was thus an archipelago-wide community of practice – a project that people from different islands, regions and backgrounds worked on together (often competitively rather than cooperatively), and which resulted in what we recognize as cultural similarity.

Nevertheless, it is evident that there was some variability in material expression through both time and space – indeed variation and innovation are precisely what facilitated the trade in ritual knowledge. In the following I will give an overview of formal variation in ancestral shrines and associated ritual structures across the New Georgia region. I do so in order to both demonstrate the way in which core beliefs and practices were expressed in different contexts, and, perhaps more importantly, to explore what such transformations reveal about the meaning and social role of these structures.

I begin with the well-documented monumental landscapes of southern New Georgia, where a project known as the New Georgia
Archaeological Survey (Walter and Sheppard 2001) described a sequence of shrine construction dating from 700-100 BP. Walter and Sheppard (2006) refer to this sequence as the Munda Tradition, comprised of an early Bao Period (700-400 BP) and later Roviana Period (400-100 BP) each defined by particular morphological and contextual variations in shrine construction. I use the established temporal sequence to guide a discussion of variation in similar sites further afield.

**Bao Period Shrines**
The earliest dated monumental sites in New Georgia were constructed in the 13th century AD and are located at Bao, an ancestral place in the rainforested interior. Bao is remembered in the oral traditions of the Kazukuru people of western Roviana as the home of their apical ancestors, a place where people lived before migrating to the coast of the mainland and barrier islands of the lagoon. The architectural structures there are held to be shrines housing the spirits of dead ancestors – they consist of a series of 17 raised platforms, faced with basalt slabs and filled with earth and stone cobbles, aligned in linear series along 500 metres of a high ridgeline. These ‘faced platforms’ are the defining site type of Walter and Sheppard’s (2006: 148) Bao Period, and typologically similar structures occur across the mainland interior and in rare clusters on the barrier reef islands. The latter date to the recent end of the period and differ from mainland sites in that they utilise cut coral blocks for facing, although they often have imported basalt uprights.

At Bao, and elsewhere, faced platforms vary in complexity (Nagaoka 1999: 75-85). The simplest forms are square or nearly so, and often have upright corner stones but no other internal components. More often, square platforms have a depression or stone lined cist positioned at centre of the platform. These may have once held ancestral bones, ashes or artefact relics, but none of the sites surveyed had any surviving surface contents, and few have been properly excavated. Square platforms are generally the smallest, having sides 5 to 8 metres long. More complex faced platforms are internally divided or stepped, and such sites always have a cist in the upper area. With internal division or stepping the platforms are stretched into rectangular dimensions, retaining the same width range as square platforms but being up to 25
metres long. Several sites, and in particular the two largest platforms at Bao (Figure 2), have elongate stone pavements extending from the front (typically downslope) edge.

![Diagram](https://example.com/diagram.png)

*Figure 2. Bao Period stone-faced shrine, site 145, Bao, New Georgia.*

An altar-like ‘stone table’, consisting of a massive flat basalt boulder resting upon smaller rocks, is usually positioned in the middle of this pavement. Some of these stone tables have pitted depressions indicating use as a nut cracking anvil, or concave upper surfaces indicating food grinding or pounding activity. Thus these features are probably associated with propitiatory offerings made to the spirits of the shrine.

The rituals associated with these sites are obscure, with some informants suggesting that they were primarily associated with gardens and food productivity in opposition to the warfare focussed shrines of the contact period (Hall 1964: 132). They lack key features associated with these later shrines – including domestic midden, shell valuables, votive artefacts, human crania, and ground ovens. It is thought then, that the Bao Period predates the emergence of the headhunting chiefdoms witnessed at European contact. Nevertheless the layout of features suggests that these shrines are part of the same tradition (see below).

Regional variation in shrine construction during this early period is difficult to address due to paucity of data. Comparable archaeological survey records are available for north New Georgia (Tedder and Barrus
1976), Gatokae (Wall and Kuschel 1975), Kolombangara (Chikamori 1967; Miller 1979), Vella Lavella (McKenzie 2007), Rendova and Tetepare (Thomas 2009). However, it is clear from the typological characteristics and associated artefact assemblages of the sites recorded by these studies that the vast majority post-date the Bao Period. The only secure evidence we have for shrine sites pre-400 BP outside southern New Georgia/Roviana comes from Rendova, although there may be some Tetepare sites of this period based on typological inference.

On Rendova three sites (RDV40, 47, 49) located to the north of Lokuru in the mountain slopes of haforai conform to the basic pattern observed on mainland New Georgia, though vary in the details. Each consists of an elongate earthen platform faced with flat basalt stones, with dimensions ranging from 5-10 m wide and 12-70 m long. They all support one or more upper platforms arranged in series along the basal platform. Very large basalt standing stones are positioned in front of the coastward or down slope end of the platforms. A test excavation at RDV49 recovered datable burnt Canarium nutshell at the foot of the upright, associated with angular chunks of basalt and a large imported chert flake. Radiocarbon dating returned an age of 431±30 BP placing site use at around AD 1450 (Thomas 2009), near the end of the Bao Period.

These sites clearly share some attributes with the Bao Period shrines of New Georgia – they are similarly faced with basalt slabs, have stepped platforms, are isolated from other settlements, lack shell rings and other recent artefact forms, and have a rectangular shape. As at Bao, the shrines are associated with stone paving and peripheral platforms, but are located in an isolated interior location, away from domestic features. But there are some obvious differences – the Rendova sites lack ‘stone tables’, and the New Georgia sites tend to have several standing stones making up the front edge of the platform rather than a single standing stone positioned in front. The Rendova sites are also more elongate than those of New Georgia, and some support several upper platforms. But the parallels are enough to indicate some similarity of practice and age.

On Tetepare a single site (TET 40, Figure 3) shares similar construction with the Bao Period shrines of New Georgia, but unfortunately remains undated. It is a rectangular platform stepped in three sections, with coral and basalt facing.
The front edge of the uppermost tier is defined by massive coral slab uprights and basalt boulders reminiscent of the shrines at Bao. Scattered fragments of clam shell occur on the shrine however – something more commonly associated with Roviana Period sites (see below). A small ring of stones near the front edge of the lowest tier contained a cache of clam shell, and may have been the site of votive offerings. The latter features may be indicative of continuing use of the site beyond the early period, or it may reflect variation in ritual practice on Tetepare. Located near to a cluster of sites at Siokodi, TET 40 is also less isolated than most early sites, and, indeed, is positioned close to the coast.

Other sites on Tetepare are clearly more closely related to the early elongate faced platforms of Rendova than those of mainland New Georgia. Like the Rendova sites these appear to date to the late Bao Period or early Roviana Period. At the southwestern tip of Tetepare, near Kupa point, there is a large monumental complex of platforms surrounded by walls and living surfaces (TET 72). Initially it was thought that this location may have been recently occupied (due to oral tradition), however radiocarbon dates on charcoal from a ground oven within the complex returned an age of 313 +/- 30 BP (WK 24394) which calibrates to AD 1480-1650, straddling the AD 1550 boundary between the Bao and Roviana Periods. At the centre of the site are a series of elongate stepped platforms, some of which are faced with coral slabs. The method of facing varies between platforms: one 8 x 19 m platform is faced with close fitting coral slabs placed on edge, much like the Bao Period barrier reef shrines in Roviana; another 5 x 19 m platform is faced with flat coral stacked horizontally. A large basal platform measuring 11 x 19 m supports dual elongate mounds placed in parallel on top, and these are similarly faced with horizontally stacked flat coral (Thomas 2009: fig 6.9).

Shrines with large basal platforms supporting dual elongate upper tiers arranged in parallel occur elsewhere on Tetepare (e.g. TET 52, 68) and often have upright standing stones positioned in front like the Rendova sites. They differ from the latter by having wider basal platforms, having parallel upper tiers, and by having deposits of shell valuables (albeit rarely, and always a typically older form known as bareke in Roviana). They also occur within more clustered settlement landscapes, and are in far less isolated positions than most early sites.
Again we have no dates closely associated with these sites, but they are probably of similar age to those of Kupa point.

Figure 3. A large stone-faced shrine (TET 40), Tetepare.

In summary, the evidence from New Georgia, Rendova and Tetepare indicates that shrine construction during the 700 – 400 BP period
followed certain region-wide precepts. Each island has evidence for large, well-defined rectangular platforms with stone-faced edging. Stepped tiers, the use of large scale uprights, and stone cobble paving are common attributes. The sites tend to be isolated, and lack artefact assemblages common in the more recent past. However, regional variations are certainly evident by AD 1550 – Tetepare in particular has a divergent tradition of elongate platforms, often with parallel upper tiers. Such differences may be evidence of fluctuation in regional contact and communication patterns, or the direction and nature of such contact. Tetepare was depopulated by the late AD 1700s, most likely as a result of headhunting raids – perhaps suggesting an inability of communities there to sustain collective relations with neighbouring groups (Thomas 2009).

Roviana Period Shrines
On the New Georgia mainland and the barrier reef islands of Roviana lagoon we see the emergence of ethnographically described headhunting chiefdoms post-400 BP. The archaeological landscape grows in density and complexity, with the appearance of numerous architectural features within clustered village settlements. House platforms, walled enclosures, wharves, defensive walls and fortifications all occur in close association with ritual sites (Sheppard et al. 2000). This was a period of ritual efflorescence in which shrines diversified in their associations and uses. Singularly important shrines housing the spirits of chiefs and apical ancestors of tribal groups certainly occur as archetypes (Thomas et al. 2001), but as well we see multiple localised shrines, each one having particular relationships with the people in whose area it lies, the person who constructed it, the ancestor it contains, and the ritual contexts of its use. There are fishing shrines, hunting shrines, garden shrines, warrior shrines, men’s and women’s shrines, voyaging shrines, medical shrines, and so on (Walter et al. 2004; Hocart 1922, 1925). Shrines of this period are platforms constructed of coral rubble and usually contain deposits of human bone and artefacts, including various forms of shell valuables and debris resulting from their manufacture, historic artefacts such as ceramics, trade axes, gun parts and miscellaneous iron items. The platforms are highly variable in shape and size and lack edging or facing stones. They often occur in aggregations of shrines and other structures including walls, wharves
and house platforms. The most important shrines of chiefly ancestors can occur in specialised central locations such as the hill fort on Nusa Roviana (Thomas et al. 2001), but common shrines are placed within village settlements.

Most shrines of this period house the skulls of the dead, or stand-ins in the form of upright stones. Often sheets of flat coral are propped together to form small houses sitting atop the rubble platform. Many sites have the collapsed remnants of these structures scattered over the basal platform. Other, perhaps earlier, sites utilise a stone-lined box or cist in the centre of the platform instead. We know from historical photographs that wooden skull houses, sometimes mounted on posts, were very common by the mid-19th century. Many platforms have indentations or post holes in the coral rubble where such structures once stood. Caches of artefacts and fragments of human bone usually occur within and surrounding these posthole features, suggesting the in situ decay of wooden containing structures.

Votive offerings made at these shrines are evident in the deposition of food waste (pig mandibles, fish bones) and food processing equipment (mortars and pounders) on many sites. More importantly, each shrine typically has a small ground oven consisting of a circle of basalt cobbles, burnt soil and charcoal, set out in front of the cobble platform. These ovens were used during the propitiatory burning of food for the spirits (Hocart 1922: 104). Additionally, numerous broken artefacts are found scattered across the surface of shrine platforms, or deposited in caches under stones or clam shells on the shrine. Many of these may have been the belongings of the dead interred with the skull, but some were smashed on the shrine as offerings (Thomas 2004: 312-5).

Due to high variation in the size and shape of the basal platforms of shrines of the Roviana Period, these attributes are less useful than more general contextual variables for regional comparison using archaeological data. On every island for which survey data exists (see above for references), sites sharing the key characteristics of cobble construction, rich artefact assemblages, skull house structures, and associated votive ovens and deposits, are common. These shrines all occur within complex village settlements, associated with house terraces, enclosures, and defensive structures. On Tetepare however, the trend towards elongate platforms observed for early sites does
appear to continue into the post-400 BP period. Numerous long coral cobble mounds (3 – 5 m wide and up to 20 m long), without facing, have small depressions and skull house structures, usually containing artefact assemblages like those of Roviana. Often these elongate platforms are arranged in linear series, with small spaces in between, effectively forming wall-like arrangements (Figure 4).

Figure 4. Skull shrines (TET 28-29), Tetepare.

Radiocarbon dating of associated ovens puts such sites well within the Roviana Period (Thomas 2009). These sites consequently appear to be a
continuation of the earlier elongate faced and stepped platform tradition on this island, but otherwise share most Roviana Period attributes. Surveys on Vella Lavella (McKenzie 2007) too have revealed some variations – the most notable of which is the used of high sided rectangular or square platforms upon which a very high density and number of skulls are placed. These shrines are known locally as matebangara and are said to represent the collective ancestors of many tribes – something unheard of elsewhere in the region.

Systematic between-island variation during this later period, however, is primarily evident in the construction methods used to build the skull houses resting upon basal platforms. The evidence here is not archaeological but ethnographic and photographic. Hocart describes the construction of skull houses on Simbo:

Cut a miniature house in two along the ridge, take a slice out of the half, wall it on both sides, place a grating between the centre posts as the front, and you have a thatched skull-house. Not only does a skull-house look like a half-house, but it is so in every detail of its construction (Hocart 1922: 103-5)

Most of these houses were made of wooden poles and thatched with sago palm leaves, though corrugated iron was replacing this by the early 1900s (Figure 5). The front of the house was open but for the wooden grille (or ‘grating’), upon which shell valuables were threaded. The skulls inside were thus visible when the shrine was viewed from the front. On Simbo these houses rested directly on the cobble platform.

Hocart also describes another form of wooden skull house as being the Vella Lavella type: “a long box, like a coffin, higher in front than behind, resting on a perpendicular plank, and with the front open” (Hocart 1922: 104).

The Simbo and Vella Lavella skull houses had what is known technically as a ‘shed’ or ‘lean-to’ roof, sloping from the front to the back. As Hocart relates, these were made like one side of the gabled roof houses used by living people.
Figure 5. Skull shrines at Pa Na Gundu, Simbo. Photographer: A.M. Hocart, 1908. Courtesy Cambridge Museum of Archaeology and Anthropology.

Figure 6. Coral slab and wooden thatched skull shrines, Paturo, Roviana. Photographer: A.M. Hocart, 1908. Courtesy Cambridge Museum of Archaeology and Anthropology.
On Vella Lavella these wooden box-like houses were supported on a single central post, or on four posts under each corner, sitting atop a stone platform. Carvings and paintings sometimes decorated the side walls of the house.

In Roviana, on the other hand, the skull houses had a fully gabled roof, and thus more closely resembled the houses of living persons in miniature. Like those of Simbo they were thatched with Sago palm leaves, but they generally sat atop a single post. They were also closed at the front with a decorated wooden door (Figure 6).

Understanding variation
The variations we see in ritual monument construction across time and space in the New Georgia group involve transformations in the scale and arrangement of a set of components that persist in all contexts. Shrines always consist of a platform with a central repository for the deposition of ancestral remains or other embodiment of spiritual potency. The platforms serve to frame and elevate the object of veneration above the ceremonial space in front of the shrine – the latter being marked by votive ovens, anvils, mortars or stone tables, and sometimes delineated with cobble paving. The trend towards elevation is pursued through the addition of upper tiers in the case of Bao Period shrines, and by the creation of house structures upon posts in Roviana Period shrines. What differs, then, is the way in which these components are put together.

Other regions within the Solomon Islands archipelago have shrine forms which share more or less similar components and arrangements, and one way of understanding this regional variation is to consider it as part of phylogenetic population relationships. Perhaps there was once a common ancestral practice of shrine construction from which variants have descended and diverged. If so, the variation described for New Georgia is a local expression of this process. The persistence of population interaction throughout the region during late prehistory puts some stress on such a model however (Thomas 2009). As noted above, magical and ceremonial lore was one object of trade and exchange. It may be that whilst people communicated with each other about the basic precepts of shrine construction and ritual practice, the frequency that neighbours actually witnessed each other’s sacred shrines was low, these being often hidden from communal view. People
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may have known the key components of their neighbour’s ritual sites, but not known how they were put together. Consequently, formal variation was only partially constrained by interaction. Without more data and better coverage it is difficult to go much further in terms of such an analysis. Instead, I consider here how variation related to the function of shrines in social life and participated in local landscape construction. Genealogical metaphors, as we will see, are not inappropriate (Thomas 2009), but I will put them aside for the time being in order to first elucidate the basic parameters of meaning surrounding shrine form.

I argue that in all periods the shrines of the New Georgia region functioned as the dwelling of the spirits, and thus are effectively houses. No domestic house structures dating to the Bao Period have been reliably identified, but later houses were built atop rectangular stone faced platforms similar to those monumentalised in early shrine form. Typically house platforms have a cooking oven or fireplace in the centre – this being a key attribute distinguishing such platforms from early shrines (see Nagaoka 1999, 2011). Roviana Period shrines make this resemblance explicit with the construction of miniature houses utilising identical construction to living houses. Wooden skull shrines, and many of the extant stone skull houses in Roviana, occur in clusters, sometimes within walled enclosures, comprising a kind of diminutive ‘village’.

The explanation for this connection between shrines and houses in the later period is to be found in funeral ceremonies and the rituals of shrine use (Walter et al. 2004) and it may be that this was also the case pre-1500 AD. In brief, funeral ceremonies in the region followed the basic pattern of secondary burial rites described by Hertz (1960 [1907]). The event of death was thought to initiate the formation of a disembodied and disoriented spirit, created as the worldly body of a person rotted away. This spirit contained the potency and will of a living person, but lacking a body and senses was disoriented and free to roam and inhabit whatever surrogate body it could find. Funeral rites sought to safely capture this spirit, give it a new fixed body and home, so that social relations with the ancestor could continue. Otherwise the homeless spirit would haunt the forests for eternity, exacting jealous revenge on its kin (Hocart 1922: 89). This was exactly the fate of headhunting victims, whose violent death and lack of a head prevented spiritual enshrinement.
The enshrinement of the skull was the final step of the funeral rites, being the moment at which the spirit was given a new skin and accepted as a potent ancestor in the land of the dead. This was achieved by the adornment of the skull with shell valuables (the new skin and senses of the spirit) and its placement among the skulls of other kin inside the skull house (Walter et al. 2004: 149-153). Shrines gave spirits a place to dwell, a fixed abode in an otherwise anonymous forest, and they gave kin a means to continue to interact with dead relatives, in a context that mirrored normal village life. Food would be pounded and burnt for the spirits in front of the shrine, and the spirits would be asked to participate in worldly endeavours, and to continue to share with kin the agency and success they had demonstrated in life. Thus, just as funeral ceremonies achieved the transformation of death from a moment of rupture, loss and danger, to an event of creation producing a beautifully potent ancestor, so the form and structure of shrines made the world of the dead visible as a transformed version of the world of the living.

Now, social relations with the dead were not quite like those maintained between living persons. The area around a shrine was a zone of danger and pollution, and most members of the community could not approach. Distance was maintained via the spatial isolation of shrines from domestic contexts (especially in the early period), or by the erection of walls around ritual precincts and by standards of avoidance – women, for example, followed special paths skirting sacred places (Hocart 1922). Food offerings, while provided by kin, were actually burnt for the spirits by a ritual attendant or ‘priest’ whose duties included maintaining the shrine and its contents, and who was also often socially isolated. In the ethnographic period propitiation was not the right of everyone but rather the province of those who held the ritual authority – the owners of the shrine.

Accordingly, the rituals of ancestor propitiation can be seen as transformed versions of normative social relations (gifting and reciprocity) in the same way that skull houses are transformed versions of houses. The distance between the worlds of the living and dead are measured by differences in practice and material form. The latter is perhaps most apparent in the general appearance of late period shrines, which in many ethnographic accounts are described as unkempt and rubbish strewn. Somerville (1897) accurately describes shrines as a:
...small altar, surmounted by curiously shaped coral stones... on it are placed all sorts of useless and broken articles... (1897: 386) [such as] broken tobacco pipes, rusty and worn out trade axe heads, pieces of rusty trade knives, bits of paper, shells, old wine bottles, broken shell rings; in fact anything broken, rusty, and no longer of use in the world of men (1897: 366).

Just as food was burnt for ancestral consumption, so were artefacts smashed in offering – mimicking the fate of the body of a dead person. In this way such shrines express a kind of absence in material form – they memorialise processes of death, decay and loss as an inversion of the complete, unbroken world of the living (Thomas et al. 2001). Looking at a shrine we can imagine the spirits occupying an inverted mirror-world in which everything is small and ruined but great and powerful.

Such an interpretation is most appropriate for the Roviana Period shrines with their miniature houses and smashed artefacts. But the Bao Period shrines achieve distinction too, though here the transformation of scale heads in the opposite direction. Bao Period shrines are larger than common house platforms and utilise massive rocks to delineate their boundaries. It is tempting to see this as a sign that the relationship between people and ancestral spirits during this period involved more reverence and apotheosis. The fact that these shrines tend to be ordered, singular and isolated, might indicate that they were significant at the tribal level, in contrast to the many and diverse hamlet shrines of the more recent past (Thomas et al. 2001: 561-3). I am suggesting here that the kinds of scale transformation that occur in shrine form have some social significance relating to how they compare with the architecture of domestic space – it is not simply random variation on a theme.

An interesting contrast is provided by the case of shrines in the Longgu region of northeastern Guadalcanal. Hogbin (1964: 75) notes that these take the form of an ordinary dwelling, but are palisaded outside and empty within except for a basket on the ridgepole holding the skull of the ancestor, a sleeping mat for the priest, and an internal stone ground oven for burning offerings. In other words, they contain all the same components as New Georgian shrines of the Roviana Period, but transformed in scale and arrangement. Whereas the Roviana shrines shrink the components and separate them in space, the Longgu shrines
enlarge one component (the house) to encompass all the others but the social barrier (the palisade). Bao period shrines enlarge and emphasise a different component (the foundation platform) and use this to create a spatial barrier through imposition.

The existence of a common set of components in each case indicates the persistence of structural function; a core set of ritual practices and understandings governing shrine form. The changes we see are transformations of core forms in terms of scale and topology. We might say each shrine type discussed is a homotopic variant, with different parts variously expanded or compressed as though arranged on a sheet of rubber (Leach 1966: 7). This is of course why Sheppard and Walter (2006) identify Bao Period and Roviana Period shrines as belonging to the Munda Tradition – deploying the concept of an archaeological tradition to convey the sense in which we see a changing lineage of forms emerge over time.

We can, however, go further than simply specifying formal connections between shrine types through time. Because shrines are the dwelling places of ancestral spirits, they are also meaningfully connected in local conception. Throughout New Georgia, shrines do not exist as singular isolated monuments, but rather as nodes within networked lineages spread out across the landscape. Bao Period and Roviana Period shrines are connected in genealogically organised oral tradition.

**SEQUENCES AND TOPOGENIC FORMS**

Today the important shrines of chiefly lineages are curated in oral tradition as sites of ancestral action, and are used to establish use rights over tracts of land. Clusters of skull houses are taken to mark ancestral villages – the places people lived in times past. Most modern villages in the region are large nucleated settlements in coastal locations, but this is a post-colonial pattern. In the past people lived in small hamlet clusters on the coast and along inland ridgelines, scattered throughout tribal territorial estates. Mobility was comparatively high, with settlement relocation a common occurrence. Consequently, tribal landscapes today are understood as being defined by a mosaic of marked places evincing ancestral action and movement. Shrines emplace the ancestral bones and spirits of the dead, and as such are the connecting nodes of this
mosaic – comprising a spatialised genealogical sequence, or topogeny (Fox 1997, Thomas 2009).

The best documented example of shrine topogeny concerns tribal relationships in the Roviana region, and has been related in numerous publications (Aswani 2000; Sheppard et al. 2004; Thomas et al. 2001; Thomas 2009; Schneider 1998). The account connects the shrines located at Bao with more recent coastal sites. As noted above, Bao is considered the ancestral home of the Kazukuru people, and in some accounts their apical ancestors are said to have transformed into the massive upright stones of the shrines there (e.g. Aswani 2000). According to tradition, intermarriage occurred with descendants of a woman named Roviana, before a gradual migration towards the coast (the journey marked by shrines and village remains). This led to the occupation of the barrier reef island of Nusa Roviana and the establishment of Kazukuru villages in the Kindu area of the coastal mainland. In this way a new Kazukuru/Roviana polity was formed. From Bao a sequence of shrines (unsurveyed) descends towards Kindu near Munda and Nusa Roviana, effectively documenting the coastward radiation of the Kaukuru/Roviana polity.

For Roviana people, this coastward movement is crystallised in the person of Ididubangara, an ancestral chief who is said to have abandoned the last shrines of Bao to take up residence on Nusa Roviana some 14 generations ago (Aswani 2000: 46-7). Oral histories of the island associate a shrine there with the arrival of Ididubangara – the site is a series of coral slab platforms incorporating basalt columns and a ‘table stone’ all imported from mainland New Georgia, and placed in a similar arrangement to the shrines at Bao (Sheppard et al. 2000: 33). The topogeny continues on Nusa Roviana with a second series of sacred origin places proceeding down the only ridge on that island. These sites are associated with the immediate descendants of Ididubangara, embedding Kazukuru/Roviana in a new locale. The dislocation is mirrored in oral history with a series of events that created a new beginning, a new focal point of origin. Nine of Ididubangara’s descendants are said to have died while living near the summit of Nusa Roviana, before magically transforming into a class of spirits called mateana. The bodies of the nine dead sank into the earth at the summit of Nusa Roviana leaving their mateana spirits to haunt the skies. The places where they sank were marked by shrines incorporating volcanic
stone imported from the mainland, mirroring the transformation of Kazukuru ancestors into stones at Bao (Thomas et al. 2001), but they are otherwise of Roviana Period style. From the *mateana* shrines further sites proceed down the ridge to a point marked by a shrine known as Olobuki (Figure 3). This is said to have been the place of a chief, Taebangara, a descendant of one of the *mateana*. Soon after his rule the Roviana/Kazukuru polity split into the Kalikoqu, Kokorapa (Nusa Roviana) and Dunde tribal branches, and Odikana, his classificatory sibling, is said to have left Nusa Roviana and formed the Saikile tribe. Subsequent generations ceased use of Olobuki shifting the interment of chiefly skulls to shrines within each new tribal area. Kokorapa, for example, began to use a shrine on the coastal flat of Nusa Roviana, and then later an offshore islet where chiefs are buried today. Conceptually these are branch shrines stemming from the central trunk (*ngati*) embodied by the central Nusa Roviana ridge, and its base or origin at Bao. Effectively then, shrine topogenies materialise the relationships and branching of tribal lineages (Figures 7 & 8).

![Figure 7. Southern New Georgia and Roviana Lagoon. Arrows show movements of Kazukuru-Roviana tribal branches as recounted in oral tradition and described in text.](image)
Differences between persons are experienced as differences between places (cf. Leach 2004: 194). Such narratives are but the largest scale indication of the genealogical character of shrine relationships. In ritual practice sequences of connection between shrines were crucial to their efficacy, and this can be seen quite clearly in ethnographic accounts. Prior to the advent of Christianity tribal groups were constituted as a ritual community focussed on the skull shrines of chiefs. On Nusa Roviana the chiefly shrines of the central ridgeline were used exclusively during ceremonies associated with the preparation and success of headhunting raids (Thomas et al. 2001), mostly because it was chiefs who organised and sponsored raids. Hocart (1931) on the nearby island of Simbo in 1908, recorded these ceremonies at chiefly shrines known as inatungu (in Roviana atungu is the respectful name for the ‘sitting’ or high chief; in Marovo inatungu are the founding spirits of a tribe).

Figure 8. Archaeological landscape of Nusa Roviana. Arrows depict topography of shrines described in the text.
Prior to a raid, warriors would gather at the shrine and make offerings of shell valuables and burnt food to the chiefly spirits in a ceremony known as ‘clubs appear’, chanting:

This is the club, thou the inatunu. Grant me an enemy to slay, and let me club ... be efficacious you spirits. Grant a victim (Hocart 1931: 308).

These ceremonies effectively called forth the efficacy of dead chiefs who had achieved success in their lifetimes, enlisting this in contemporary practice. The clubs (actually steel trade axes in Hocart’s time) embodied the presence of these potent spirits on a raid. In the event of success the entire community would gather and make parcelled offerings of shell rings, puddings and pigs, lacing these along the handle of the weapon. These were then gathered up by the wife of the current chief using another ring, the singe inatungu or sacred ring of the shrine, and given to the successful warrior as compensation for securing a victim. However, the warrior owed the rings to the attendant of the inatungu shrine who had conducted the initial ‘clubs appear’ ceremony, and they were ultimately given back to the spirits of that shrine in recognition of the true source of success: its ancestral spirit (Hocart 1931: 316; Thomas 2004: 272-4).

What these ceremonies make evident is how agency was seen to be guided into efficacy through the maintenance of relationships with the ancestral dead at shrines. A warrior was compensated for his actions, but this was ultimately owed to the influence of the spirits induced to provide success – because his actions encompassed their agency. Now, these spirits were considered potent in this way because as chiefs they had organised and conducted successful raids during their lifetime, and this too was derived from their own relationships with earlier ancestors at shrines. In effect potency was continuously deferred through an ever receding and successively encompassed chain of spirits. This pattern is the fundamental source of the linkages between shrines, the reason why they emerge as a topogenic lineage. Each bangara shrine owed its potency to a previous shrine, and the living effectively affiliated themselves to this lineage during the ritual practices integral to the well-being of the community. The process might be said to be one of a continual grafting of shrines and persons onto the past rather than descent per se.
New shrines could also be set up in branches affiliated with these important originating root lineages. Hocart (n.d[a]: 4), for example, records an instance in which a man of Simbo gave shell rings to a Roviana man in order to acquire the ability to set up a shrine allowing successful hunting with dogs. There is evidence that such transfers were effected by taking ash (from ovens where offerings were burnt) from one shrine and scattering it at a new location where a secondary shrine was to be set up (Hocart 1935: 104; Hall 1964: 133). Such shrines were constructed without the skull of an ancestor but the *tomate* was still held to be responsive by virtue of the gift transaction and ash transferral, and carvings or stones would be set up to embody their presence. The origin of secondary shrines was recognised explicitly during offerings: “one [bonito fishing shrine] was imported from Simbo and still sends its catches to the parent shrine” (Hocart 1935: 109).

In this way efficacious lineages attracted and were supported by lateral affiliations of persons deriving efficacy from the same ancestors. During the ethnographic period there was clearly an efflorescence and diversification of these arrangements, with multiple lineages of bonito fishing shrines, warrior shrines, garden shrines, voyaging shrines, hunting shrines and so on, budding out across the landscape and between islands.

Similar topogenic patterns emerge with other forms of ritual practice, particularly concerning charms. These typically focussed on some relic or artefact bundle often containing ancestral remains (a tooth, a lock of hair), sometimes stored at a shrine, with a long remembered history. In each case the spirits of the charm and often the places it had been used were remembered and invoked. One example is a Roviana charm called *ragomo* (Hocart n.d[b]: 20) consisting of an assemblage of shell rings lashed together into a “pile” inside of which certain unknown objects were concealed. Used to cure wounds and bites, the *ragomo* was said to have originated from a spirit of Santa Isabel called Sovubangara, but Hocart records a narrative listing 69 places in Isabel, Vaghena, Manning Straits and Kolobangara that the charm was subsequently carried to before it passed to ‘Hika’ of Roviana as his “heirloom” (n.d[b]: 21). Hika then taught it to the current owner, Riabule, who appears to have taught it to at least two other living persons (where ‘teaching’ involved a gift of shell valuables from the recipient to the teacher, who then offered them to the spirits of the
charm). The remembrance of such extensive histories was essential to the performance of charms insofar as this involved the recognition of the source of efficacy conveyed: the persons who had held and used the charm in the past, embodied or contained by the valuables bound together.

In some instances these enchainments provided access rights to land and resources as well as the ritual knowledge or capacity of the charm. Another Roviana charm associated with voyaging, called serubule, gave the person who currently held the artefact rights to travel to and use the resources of Vaghena in the Manning Straits, by attachment to the ancestors of the charm that had voyaged there with its aid in the past. In that instance the bones of those ancestors were interred in shrines on Vaghena (Hocart n.d[c]: 20).

Charms and shrines are thus basically scale transformed versions of the same thing – a material container which houses a spirit, whose agency derives from other spirits in an extended sequence. Shrines explicitly embed these enchainments in landscape, though the storage of charms on shrines and recitations of associated places effectively do the same thing. This essential similarity allows us to return to the above discussion about scale transformations in shrine form exemplified in the Bao to Roviana Period transition. If Bao Period shrines are large, monumentally structured, singular, and function as apical ancestral places, and Roviana Period shrines are smaller, variably structured, multiple, and diverse in ancestral association and purpose, then charms continue this trend to the extent that they can be held in the hand and transported. Accompanying the scale transformations there is a gradient of association from shrines as singular places of tribal importance, to themultiplicity of analogous forms in the contact period. As efficacious topogenies branch out into multiple lineages from the singular core, they shrink and diversify in form, their significance becoming the province of particular persons rather than collectives.

One way of thinking about changes in shrine form, then, is to suggest that these track, and perhaps facilitated, a series of shifts in the distribution of ritual practice throughout society. Monumentality transforms from the singular and collective to the many and personal. We see a shift from a focus on the singular place of apical ancestral agency, to the embedding and distribution of spiritual agency across the landscape as a whole. Landscape becomes the monument. The
overarching point is that our perspective on shrines should not be conceived in singular terms – as monuments in isolation from their relationships. Rather shrines monumentalised whole landscapes by functioning as interconnected nodal places in historical and causal relationships.

CONCLUSION – FROM DWELLING TO NARRATING
In contemporary Western culture monuments are commemorative or narrative structures whose extraordinary size conveys the social importance of that which is commemorated, and attempts to preserve this, everlasting. Their agency lies in their ability to call forth memories and images and cast these in a particular light, cemented to place. The monumental landscapes of New Georgia did not emerge according to such concerns, though there are some similarities of operation. Shrines certainly capture the past in the service of the present and future. But this was seen as an ontologically necessary means of reproducing wordly agency, ensuring the continued social engagement of the efficacious dead in the service of future reward. Such monuments were the product of particular forms of ritual practice and an underlying theory of efficacious agency rather than a conscious attempt to memorialise. The production of place and landscape was not the purposeful intent of their construction. In this sense genealogical or topogenic arrangements of shrine sequences were a side effect or by-product emergent from action as a dimension of being.

However, in the Solomon Islands today, in the context of Christian post-colonial society, shrines and their connections are marginalised. Shrine sequences no longer unfold through the years. Instead they appear as a given resource, standing apart from contemporary sociality as signifiers of the pre-Christian past. They feature as markers of land rights, and are deployed in court battles over the ownership of territory and its flow-on benefits (logging and fisheries royalties particularly). Contemporary descendants argue over the meanings and associations of shrines, and over the genealogical criteria by which descendants are recognised (see Schneider 1998; Hviding 1996). Shrines are also sometimes the site of religious demonstrations in which the power of Christianity is held to eclipse pagan ritual, rendering it mute and inert. In other words, shrines now function as monuments in a sense more familiar to Western observers. They are signifiers of narrative – marking
historical events and occurrences in place. The fact that debate occurs over the meaning of what they signify, is but a token of their detachment from practice. They are immobile material objects to which creative persons can attach ideological and political narratives to promote personal and collective agendas.

Rather than regard this change as some kind of corruption of original intent, I would argue that it is enabled by a shift in perspective facilitated by the way shrines sit as a kind of fulcrum point between the past and the future. When shrines were constructed they emplaced an enchained history of successful ancestral action in order to sustain its involvement in future practice. The focus was securely on what the act of enshrinement enabled one to do, in the sense that the resident spirits facilitated efficacious agency for ritual participants. We might call this a ‘dwelling’ perspective (Ingold 2000) in which connected places emerged through goal-oriented daily practice. The alternative perspective focusses instead on shrines as the latest event in a genealogical sequence, and contemporary action as the end-product of a history, or its inheritance. Such a viewpoint is retrospective in that it treats the accumulation of shrines through time as narrative.

The movement from one perspective to another – from dwelling to narrating – is essential to the production of history, and indeed the very flow of our lives as something we live and reflect upon. The shrine landscapes of New Georgia make this process evident when taken as a whole. As shrines turn the temporality of history into the space of landscapes they connect the past with the future in the present. And that, surely, is the primary function of the monumental.

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PACIFIC MONUMENTALISM

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Abstract: This paper calls into question the status of the category of monument in the Pacific, and proposes that the transfer to the Pacific of Western European notions of the form and significance of the monumental has masked a range of local historical possibilities and interpretative opportunities. Monumental constructions in stone have long fascinated Western visitors to the Pacific, inspiring familiar colonial reveries of lost civilisations, nostalgic tropes of cultural degeneration, and elaborate diffusionist narratives centred on megalithism. Drawing on research for two recently inscribed World Heritage cultural landscapes from Melanesia – the Kuk Early Agricultural Site in Papua New Guinea and Chief Roi Mata’s Domain in Vanuatu – we call for a broader frame of reference for Pacific monumentalism. In the place of a conventional archaeological or heritage equation of the monumental with massive and highly visible construction at distinct sites, we suggest that Pacific monumentalism is more often located in the elaboration of cosmologies, which are mapped across entire landscapes or seascapes, and which may or may not incorporate what we commonly define as ‘monuments’.

A MISPLACED MONUMENTALISM?
Western notions of what constitutes the monumental have profoundly structured both the archaeology of the Pacific and global understandings of cultural heritage and World Heritage, to the extent that conventional European definitions of the term have become naturalised, and the monumental taken for a universal category. Consequently, there has been only limited enquiry into Pacific understandings of the monumental, which should surely inform our appreciation of the nature and function of monuments in a Pacific setting. How are we to read the sites we recognize as monuments without importing analytical assumptions about the construction and significance of monuments developed in a largely European context? What might we be missing when we presume that monuments take a highly visible form, on a large scale and in a durable material such as
stone? And how might we learn from Pacific communities in re-casting our understanding of Pacific monumentalism?

Following brief reviews of the culturally specific definition of the monumental in Western thought and heritage practices, and of the application of these templates to the Pacific, we turn to two case studies in Melanesia – the wetland agricultural systems of highland Papua New Guinea, and the site of Chief Roi Mata’s Domain in Vanuatu – to consider how these cultural landscapes, both of which are also World Heritage sites, reflect vernacular forms of monument. The approach, in both cases, has been to relocate individual sites or monuments materially within their wider landscapes, and then to understand those landscapes as the products of cultural and historical practices and forms of knowledge. The outlines of this Pacific monumentalism, which emphasises the contextual roles of the broader landscape and of local cosmologies, are sketched in conclusion.

DEFINING THE MONUMENTAL
Modern deployment of the adjective ‘monumental’ invariably carries the connotation of scale, of something of massive proportion, but this does not accurately reflect the origins of the term in the Latin verb *monere* (‘to remind’) or the noun *monumentum* (‘a monument, memorial structure, statue; votive offering; tomb; memorial record’), neither of which necessarily entails largeness of scale; and nothing is implied about the nature of the materials used, or the prominence or visibility of the memorial object. In this earlier conception, a monument was simply a material object constructed or designated to assist in the recall of memory, whether of people or past events.

Christopher Chippindale’s (2004) social history of attitudes towards Stonehenge illustrates the extent to which current understandings of the monumental are largely a product of the late-seventeenth and eighteenth centuries. Stonehenge and other examples of monumental architecture (preferably in ruins) were recruited to aesthetic notions of the sublime, as expressions of power or divinity that have the capacity to overwhelm the observer. As Europe’s colonial interests expanded, Stonehenge became the archetype for megalithic monuments elsewhere, with analogues being discovered throughout the world. Ruined monuments functioned as ‘allegories for thinking’, in Walter Benjamin’s terms, providing a powerful canvas onto which romantic notions of the
past and of decay could be projected; and, for colonial observers, they offered the additional frisson of past civilisations eclipsed by subsequent degeneration (Leask 2002; Jamroonjamroenpit 2011).

If there is a general contemporary definition of the monumental, it revolves around three basic attributes: scale, permanence and visibility. Monuments, under these terms, are “size made visible” (Holtorf 1996:121), where the scale of the monument and that of the polity responsible for its construction are held to be indexically linked. Given their intended function as trans-temporal memorials, monuments are also deliberately constructed in durable materials, such as stone, to ensure their permanence. In addition, there is an assumption that monuments are intentionally prominent and highly visible, preferably over a long distance and irrespective of the degree to which the internal qualities or activities associated with the monument are visible or accessible to the wider public.

Each of these three attributes is most obviously evident in the form of monumental architecture, and it is scarcely surprising that the majority of cultural World Heritage sites are prominent constructions, such as temples of worship, mausoleums and palaces. Individual monuments, in this sense, enjoy the great advantage of being highly visible as archaeological sites and have come to play a central role in our reconstructions of past societies.

Increase in the complexity of monuments has generally been interpreted in terms of increase in the scale and complexity of society, with changes in the size and form of monuments linked to political evolution and the concentration of power in an elite capable of mobilizing the necessary labour. Put succinctly in an influential paper by Bruce Trigger (1990: 125);

Monumental architecture and personal luxury goods become symbols of power because they are seen as embodiments of large amounts of human energy and hence symbolize the ability of those for whom they were made to control such energy to an unusual degree.

Trigger (1990: 12) could thus write that the ‘ahu of Easter Island perhaps represent in terms of size and quality of workmanship the upper limits of monumental architecture that [egalitarian] societies achieve’, the terms ‘upper’ and ‘achieve’ indicating the direction (and
desirability) of stadial progression; while early civilizations in West Africa and China might also have produced massive constructions, these were made ‘only’ of stamped earth, and not stone (Trigger 1990: 12). In this way, questions and assumptions about political evolution, change in ritual, and demographic transformation condense around monumental sites, investing them with exceptional significance (Bradley 1991: 134).

From at least the 1990s, there has been a growing body of thought that has revised the ways in which we think about monuments, and each of the three attributes of conventional monumentalism has come under scrutiny. A traditional focus on sites has been tempered by the realisation that spheres of activity in the past seldom conform to the arbitrary boundaries of archaeological sites (Darvill 1997: 168). Individual monuments need to be considered within a ceremonial or ritual landscape of other sites, which are often ordered or nested within a hierarchical or sequential series (Dillehay 1990). Questions of the visibility of monuments have been extended through consideration of the ‘visual envelopes’ that surround sites, viewed both from within the site and from without (Cleal et al. 1995: 35); and the entire notion of visibility has been challenged by the proposition that ‘invisible sites’ such as artefact deposits were equally significant within prehistoric ritual landscapes (Fontijn 2007).

Changes in thinking about Stonehenge, important in their own right, are also a useful register of transformations in archaeological and heritage attitudes towards the monumental more generally. An awareness of the broader landscape as a context for the central site at Stonehenge was present from the 1920s (Chippindale 2004: 188), but increasingly evident in the titles of successive investigative projects since the 1990s: the Stonehenge Environs Project (Richards 1990), Stonehenge in its Landscape (Cleal et al. 1995) and the Stonehenge Riverside Project (Parker Pearson 2012). The results of these projects, with their expanded appreciation of the monumental, have been revolutionary for our understanding of Stonehenge not just as one site, albeit the most important one, within a local sacred geography, but also within a constellation of related sites extending over much of southwest England and southern Wales. “No monument is an island entire of itself”, writes Parker Pearson (2012: 314), making the case for a close relationship between Stonehenge and the associated local structures of Durrington Walls, Woodhenge, Bluestonehenge and the Avenue,
amongst others, as well as the probable role of Stonehenge as the omphalos or navel of the world for a much wider region.

The resilience of the stone circles at Stonehenge has served to draw attention away from less durable elements of the cultural landscape. As Chippindale (2004: 216) reminds us, “Stonehenge looks monumental today because its sturdy sarsens have barely been worn down by forty centuries of English weather”. At one time the timber structures we know only from the ground-plans of their rotted posts may have been as ‘grand’. The sarsen edifice both built upon an existing natural, geological feature – the natural ridges aligned on the solstice axis – and elaborated on earlier wooden circles. Indeed, Parker Pearson (2012: 334) argues that Stonehenge “was built to look as if it were made of wood”, as the technology of its construction appears to have mimicked the carpentry of the wooden henges.

These recent changes in archaeological thinking about the monumental have been echoed in developments in heritage practice, most obviously at the level of World Heritage. The introduction of the category of cultural landscape to the Operational Guidelines for the Implementation of the World Heritage Convention in 1992 marked a shift from the identification of sites on predominantly archaeological and architectural criteria to a broader appreciation of cultural differences in the definition of outstanding universal value, more informed by geographical and anthropological approaches to significance (von Droste et al. (eds) 1995; Fowler 2004; Head 2010). In particular, the cultural landscape approach has promoted some rethinking of the relationship between tangible manifestations of heritage and the intangible webs of meaning that endow them with significance. This has been a shift with distinct implications for the Pacific, as Jean-Louis Luxen, Secretary-General of ICOMOS, noted: “The geo-cultural regions that stand to benefit in particular [from the undoing of the distinction between tangible and intangible heritage] are Africa and Oceania, whose physical heritage consists of more humble works in perishable materials, a heritage that the “monumentalist” approach has for too long neglected” (Luxen 2003:2).

Lisa Prosper (2007) has very succinctly outlined some of the key challenges confronting heritage approaches to landscape, each of which has obvious relevance for the Pacific. The first is the need to understand the heritage (or cultural) significance of ‘sustained interactions between
culture and place in which material or morphological forms are largely absent or do not fulfil criteria for designation’, such as archaeological typologies; the second is the requirement that we move beyond ‘a materialist or artefactual framework to adequately accommodate the social heterogeneity and plurality of cultural landscapes’; and the third is the value of appreciating the dynamism of cultural landscapes, in the present as well as in the past. Collectively, these challenges have been substantially addressed at several cultural landscapes in Australia and New Zealand, such as Uluru-Kata Tjuta and Tongariro; as historian Bill Gammage (2006: 164) reminds us of the Tasmanian landscape:

When you go into the bush, or into what Europeans call wilderness, the memory, monuments and memorials of the Tasmanians will be all around you.

MONUMENTALISM IN THE PACIFIC

Prominent stone monuments in the Pacific attracted the attention of European voyagers in the region, and drew inevitable comparisons to Stonehenge: James Cook’s editor contrasted the moai of Easter Island with the sarsens of Stonehenge (John Douglas 1784; cited in Johnson 2003: 125) much as Henry Meade would later describe monuments on Tonga as a “Tongan Stonehenge” (Henry Meade 1870; cited in Chippindale 2004: 130). Early European observers commonly performed two operations in writing about or drawing Pacific monuments: first by treating them as individual subjects for contemplation within a natural environment, thereby excising them from their social landscapes; and secondly by declaring them ‘ancient’ and thus effacing their local cultural significance and denying any connection between the monument-builders and contemporary Pacific communities (Smith 1989[1960]: 71-72; Johnson 2003; Heringman 2013: 43, 69).

This process of decontextualisation was further advanced during the early twentieth century by the proponents of diffusionism, who saw in stone constructions of the Pacific the clear and readily identifiable traces of Egyptian or Near Eastern influence. For scholars such as W.J. Perry, the presence of stonework was sufficient evidence in itself of an ‘archaic civilisation’:
There may be trilithons and dolmens and pyramids of stone [in the Pacific]; but these monuments do not necessarily mean variant cultural influences. They are all stone monuments, and for that reason it can be claimed that they represent one cultural influence (Perry 1923: 475).

Alphonse Riesenfeld’s (1950) massive study of megalithic culture in Melanesia is a monument in its own right to the remorseless logic of diffusionism. Hunting down every trace of stonework in the regional literature, Riesenfeld constructed a narrative in which successive waves of light-skinned, sea-faring and stone-using immigrants colonised Melanesia, leaving everywhere the mark of their presence in stone, to be followed later by darker-skinned ‘races’ who tended to produce poor copies in wood of the original sculpture and architecture in stone.

Diffusionism and megalithism have long waned, but stonework still exerts a powerful pull on Pacific prehistories. As Clark and Martinsson-Wallin explain; “Monumental structures are important archaeological sites because they contain in compressed form details of a culture’s socio-political development” (2007:37).

Their review of Western Polynesian monumental architecture reveals a much more nuanced understanding of monuments and monumental architecture, which are now addressed variously as materializations of ideology, indexes to socio-political transformation, measures of ‘ecologically superfluous behaviour’, or as evidence for complex histories of migration and diffusion of people, materials and ideas. Clark and Martinsson-Wallin make the case for an expanded ‘landscape’ interpretation of monuments, distinguishing between monuments as structures whose purpose is ‘to evoke memory’ and monumental architecture, which potentially includes “all substantial built structures and features in a landscape” (2007:29). A further functional distinction is drawn between monumental architecture related to production, defence and special functions such as rituals, elite enclaves or burials (2007:30).

If Clark and Martinsson-Wallin’s review describes a ‘re-contextualization’ of Pacific monuments within their surrounding landscapes, it also suggests that monuments (and monumental architecture) register ‘in compressed form’ many of the assumptions that continue to underwrite archaeological interpretation about social and cultural processes in the Pacific and their material expressions.
Although much of the archaeological analysis of Pacific monuments continues to focus on the equation of size and scale with rank or authority, it is increasingly apparent that matters such as social structure, dominance or demography cannot simply be ‘read’ from monuments (Burley 1994; Kolb 1994); for example, the sheer scale of early construction of the landscape and waterways at Lapaha in Tonga was considerably greater than that of the subsequent phase of royal tomb construction associated with more elaborate forms of social structure and authority (Clark, Burley and Murray 2008). As these authors demonstrate, to the extent that accounts of the use and significance of Pacific monuments are relatively elaborate and rich, ethnohistoric and oral historical sources have often played a critical role; thus our capacity to identify and interpret the function of chiefly bird-snaring mounds in Tonga and elsewhere in western Polynesia depends almost entirely on ethnohistorical sources (Burley 1996).

Much more could be made of these ethnohistoric sources, however, and of the exceptional access that the Pacific provides to local or vernacular interpretation from living descendant communities. In particular, there is scope for broadening our definitions of the monumental, and for the re-contextualisation of monuments within local cultural understandings as sites or places that connect the seen and the unseen, the tangible and the intangible. Christopher Martinello (2006) illustrates this usefully in his discussion of the Lomipeau, the great double-hulled canoe of the Tongan rulers in the sixteenth century. He argues that the canoe itself was a form of monument, not only in terms of its sheer scale, with all that this implied about the labour of construction and the efficacy of the polity it represented, but also because of its capacity to literally convey or project a sense of that power across the sea.

A LAND WITHOUT MONUMENTS
To further explore some of these arguments, we turn now to a series of case studies from Melanesia, described by Suzanne Küchler as a “land without monuments” (Küchler 1999). Much of the scholarship on Pacific monuments relates specifically to Polynesian and Micronesian sites and to questions of the evolution of systems of chiefly authority. Shifting our attention to the less obviously ‘monumental’ architecture and landscapes of Melanesia forces us to consider how different forms of
authority – both secular and sacred, if such a distinction holds any meaning – are memorialized within Melanesian landscapes. Richard Bradley has observed in European prehistory that; “some societies are studied through their sacred monuments whilst others lack this feature altogether” (1991:135)

This points the way out of this conundrum when he proposes that we treat “places as monuments” (1991: 139). This widening of the aperture for the monumental requires that we address how neutral spaces are made into places, and then places into monuments.

The making of places and monuments also invokes questions of agency, of the ways in which people are mobilised around projects of construction, whether they are led by chiefs, big men or ritual leaders, and whether by coercion or consensus (Valeri 1994: 542; Parker Pearson and Ramilisonina 1998: 323). In this agentive approach to monuments, it is the relationship between people, places and practices that is foregrounded:

If a single explanation for the purpose of the monuments can be put forward, it is that they were arenas which allowed the scattered population to gather and conduct ongoing projects which demanded and gave focus to their gathering (Oswald et al. 2001: 132).

Under these terms, the identification and interpretation of monuments focuses on performance and on places or landscapes as the settings or stages for specific social or cultural practices of heightened significance for a community at large.

We limit our discussion here to the two World Heritage sites of the Kuk Early Agricultural Site, in the Papua New Guinea highlands, and Chief Roi Mata’s Domain in central Vanuatu, as well as their broader regional and cultural contexts, on which we draw to illuminate the scope for an understanding of monuments founded on close ethnographic analogy and ethnohistoric research.

DRAINED LANDSCAPES OF THE NEW GUINEA HIGHLANDS

The Kuk Early Agricultural Site is located in a large, partially drained swamp in the Wahgi Valley of Papua New Guinea’s central highlands, which contains an exceptional historical sequence of phases of use and
abandonment of the wetlands for agriculture (Golson 1977; Denham et al., 2003; Ballard, Denham and Haberle 2013).

Figure 1. Aerial view of a portion of the Kuk Early Agricultural Site exposed through excavation (UNESCO).
Inscribed on the World Heritage List in 2008 as a continuing cultural landscape, in recognition of its unique 10,000-year history of independent plant manipulation and wetland use, the 311-hectare Kuk site is representative of similar systems that extend across the very much larger North Wahgi Swamp (Muke, Denham and Genorupa 2007). Although the massive scale of the agricultural system of which Kuk forms a part might be considered conventionally monumental, this is not evident to the observer on the ground, where the buried drains and ditches can scarcely be discerned, but becomes apparent only from the air or through large-scale excavation (Figure 1).

The remarkable longevity of drainage at Kuk is equally invisible, and has been recovered only through archaeological enquiry, rather than being remembered locally. Although oral histories record the defeat and flight into exile of the Kawelka tribe that occupied the Kuk area in the late nineteenth century, there is no recall of the drainage systems or of use of the wetlands for anything more than hunting, collecting and pasture for domestic pigs. The Kawelka returned only in the 1960s, just as a tea research station was being established at Kuk, leading to the excavation of drainage ditches and the discovery of the archaeological evidence (Ketan 1998). While Kawelka ownership and ongoing use of the Kuk wetlands is not in dispute, the lack of continuity in our understanding of this vast agricultural system has seen the prehistoric sequences of use described almost exclusively in terms of agricultural production and intensification (Golson 1977).

Some 160 km to the west of Kuk there is a very similar wetland drainage system, smaller in scale and shallower in its temporal depth, but with an unbroken history of use over at least the past two centuries and into the present (Powell with Harrison 1982; Wood 1984; Ballard 1995).

Huli-speakers of the Haepugua Basin continue to excavate large drains in order to reclaim wetland areas for cultivation, much as their ancestors have done in the past, providing an opportunity to observe and ask questions about the broader social and cultural contexts and significance of large-scale swamp drainage, matters on which Kuk remains essentially mute. These questions address not just the technologies of wetland production, but also the various functions of ditches and different forms of demand on production, the mobilisation
of labour, and the social and cultural underpinnings of this wholesale transformation and domestication of the landscape.

The largest of seven substantial swamps in the Huli region, Haeapugua Swamp is approximately 9 km² in area, the land currently being divided between nine different clans, with a total population of about 4500 in 1992. The wetland areas at Haeapugua have been cleared and drained sporadically over the past 2500 years, and particularly intensively since the mid-19th century, when almost the entire swamp was brought under drainage; at various points during the period 1959-1992, more than 4 km² or almost half of the wetland area has come either into or out of immediate agricultural production, suggesting considerable ongoing activity in terms of drainage, use and abandonment (Ballard 2001).

Most of the settled area of Huli territory is covered in a dense network of dryland ditches, up to 4 m in depth, which extend unbroken into the swamps as wetland drains; no distinction is made by Huli between wetland drains and dry land ditches, both of which are referred to as gana. In terms of the kinds of functional distinction discussed above for monuments, Huli gana are truly polyvalent, because they serve simultaneously as agricultural and water management features, land boundary markers, defensive barriers in warfare, protection against marauding pigs and corridors for the movement of pig herds, and to demarcate areas devoted to burials or ritual performances. As such, they register, and can be used to interpret change in, a very wide range of social activities, including demands on production for subsistence, the financing of wars and exchanges, and the supply of pigs for ritual sacrifice.

The edifice of the drainage network at Haeapugua is construction on a monumental scale: the best available figures for drain excavation with wooden tools in the New Guinea highlands produce an estimated input of 205,000 person-days for the 205 km of drains in this single swamp, with a total soil displacement of about 512,500 m³ (and these figures do not include comparable areas of ditch excavation in the adjacent dry lands). Local descriptions of the historical mobilisation of Huli labour for drainage are consistent with ethnographic accounts, in which individual ‘big-men’ asserted their claims to wetland areas, and marshalled the necessary male and female labour and other resources, in order to establish substantial gardens dominated by sweet potato, of
which as much as half went towards pig production. Garden productivity on these rich reclaimed soils could be sustained almost indefinitely, but most wetland gardens ultimately returned to swamp once the impetus for this increased production had passed, or the project leader’s ability to maintain the drains had declined. Obviously, in and of itself, the scale of a monumental project is no sure indicator of some ‘stage’ of political evolution.

What makes these Huli wetland landscapes monumental is not just their scale, or longevity, but also the way in which they engage Huli memories. The act of re-excavating or clearing a dryland ditch or wetland drain is itself a form of memory work, usually involving the direct descendants of the male ancestor identified as the original excavator, who are highly conscious of their role in re-asserting an ancestral claim to the land, and of emulating earlier feats of labour. Like the World Heritage-listed Ifugao rice terraces of Luzon, Huli drained and ditched landscapes are “monuments that never ceased being built” (Byrne 2007: 43).

Huli identify a range of additional features in their landscape as monuments that summon up the past. These include the sub-clan, clan and phratry ritual centres known as gebeanda (literally ‘ancestor-house’), which represent the original house-site of a named apical ancestor. Visually, gebeanda are distinguished by groves of hoop pines (Araucaria cunninghamii), which almost invariably mark such sites, and tower above the surrounding canopy like European church spires. The largest of these gebeanda sites, which were controlled by a handful of hereditary ritual leaders and their families, provided access to the very fabric of the Huli cosmos. Straight avenues led through dark groves of hundreds of mature hoop pines to an inner sanctum, often a natural feature such as a hole in the ground or a cave, where ritual leaders sought to influence the fertility of their universe by interacting with a largely subterranean sacred geography. While these sites were highly visible in the Huli landscape, the ritual performances at their core were restricted to all but a few senior men. Closing the circle between cosmology and wetland drains, much of the wetland reclamation of the past two centuries at Haeapugua was apparently geared towards the production of pigs, in an intensifying cycle of elaboration in ritual and ceremonial exchange designed to stem the rise in the depredations of
new epidemics and the steady increase in the frequency and scale of warfare.

Although the *gebeanda* ritual sites and the drainage networks are both visibly material forms of monument, it is important to note that, other than maintaining the avenues in the groves by keeping them free of litter and seedlings, there was little human agency at work in the construction of *gebeanda*, which might in many respects be regarded as ‘natural’ monuments. However, the distinction between ‘natural’ and ‘cultural’ has held no meaning for Huli, whose ancestral genealogies all feature a transition from human to spirit ancestors, and for whom the agency of spirits in the constitution of the landscape and its ritual sites has been as real as that of human ancestors.

**CHIEF ROI MATA’S DOMAIN**

Shortly after the inscription of the cultural landscape of Chief Roi Mata’s Domain in Vanuatu on UNESCO’s World Heritage list in 2008, Meredith Wilson, as the nomination team leader, wrote to a major international fund that addresses the protection of heritage sites. Would they be interested in applications to further develop Vanuatu’s first World Heritage site? The response was swift and terse. They might be interested in supporting World Heritage in the Pacific, but only if it was something properly monumental, such as Nan Madol in Pohnpei.

Nothing could be less monumental in its outward appearance than the central feature of the World Heritage site of Chief Roi Mata’s Domain (CRMD), which consists of two low burial headstones set in a clearing surrounded by scrub on the small coralline island of Artok or Eretoka, off the coast of Efate in central Vanuatu (Figure 2). Instead, the Outstanding Universal Value of CRMD resides equally in the sub-surface archaeological evidence for the burial, the context supplied by the surrounding cultural landscape, and the remarkable oral traditional knowledge of this superficially innocuous site (Ballard and Wilson 2012).

Legends of the paramount chief Roi Mata are told throughout central Vanuatu. Although these legends almost certainly conflate the lives and activities of several different holders of the title, the very last Roi Mata (for no-one has openly claimed the title since) appears to have been an exceptional individual, responsible for settling a long period of
widespread conflict and for establishing the naflak matriclans that continue to structure marriage patterns in contemporary society.

Figure 2. A map of Chief Roi Mata’s Domain.
Resident at Mangaas, on the main island of Efate, this last Roi Mata is said to have died as an old man in Fels Cave, on neighbouring Lelepa Island (Figure 3). His residence at Mangaas was abandoned, never to be resettled again, and his body was transported to the smaller island of Artok, whose residents were displaced so that the entire island could be declared taboo (fenua tapu); there, Roi Mata was reputedly interred in a ceremony that saw as many as 300 people buried alive to accompany him in death.

Guided by local oral traditions from Lelepa, archaeologist José Garanger excavated a series of sites associated with the life and death of this last holder of the chiefly title of Roi Mata, including his residence at Mangaas, Fels Cave, where he died, and the site of his burial on Artok Island (Garanger 1972). Within the limited portion of the burial site opened up by his excavation on Artok, Garanger identified the remains of some 50 individuals, arrayed around a central pit containing the body of an older man and a handful of his immediate retinue. Along with subsequent excavation and re-dating by Matthew Spriggs, Stuart Bedford and Meredith Wilson, Garanger’s enquiries established a close connection between all three sites: the burial, the abandonment of Mangaas, and the phase of rock art in Fels Cave associated with the last Roi Mata all occurred at about AD 1600 [CE]. Although activity at the first two sites was effectively frozen, the traditions about Roi Mata have continued to animate the landscape, and to govern the management of these sites, into the present.

Here it might be said that it is the scale of the burial, relative to population, that marks the site out as monumental. But the ‘monumentality’ of Chief Roi Mata’s Domain is in fact diffused across the landscape, evident in the depth and accuracy of the oral traditions (which actually extend much more deeply into the region’s past), and in the continuing customary practices of management of the sites of Mangaas, Fels Cave and Artok.

The three sites operate as nodes within a web of significance, none of them being capable independently of sustaining the traditions about Roi Mata.

**CONCLUSIONS - PACIFIC MONUMENTALISM**

This paper has set out to disturb the confidence with which we identify ‘monuments’ in the Pacific, and to demonstrate our contention that the
seemingly self-evident identification of what might constitute a Pacific monument reflects historically layered and often tacit Western understandings of the monumental. To the extent that all monuments are organized fundamentally around questions of the production and politics of memory, Pacific understandings of the role and nature of monuments in memory work are surely a fundamental point of departure.

None of the conventional attributes of the monumental – whether scale, permanence or visibility – are necessary qualities of the communal prompts for memory in the case studies described above.

Figure 3. The headstones at Roi Mata’s grave on Artok Island

This observation need not detract at all from the comparative study of Polynesian or Micronesian monuments in stone, but it does imply that mapping the presence or absence of ‘monuments’ in Melanesia might require different kinds of questions and a broader frame of analysis tailored to the ways in which all societies inscribe memory in the landscape.

In particular, the continuities in place of Pacific populations provide us with ethnographic and historical access to wider understandings of significance: of the pitfalls of relying on scale (of construction, of burial etc) as a simple index of social organisation or demography; of the
interplay of the tangible and intangible, or the permanent and the perishable; and of sites as nodes or elements in cosmological networks or circuits of power. In the place of an earlier importation of European models to the interpretation of Pacific monuments, there may now be scope for a reverse flow of insight, from Pacific cultural landscapes back to the analysis of European pasts.

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RITUAL USE OF PALAU’S MONUMENTAL EARTHWORKS AND LEADERSHIP STRATEGIES

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Abstract: Materialization of religious authority through monumental architecture legitimizes the dominant ideology to play an important role in the development of sociopolitical complexity. Ritual behaviour has just been archaeologically identified in the monumental earthwork landscape on Babeldaob, in the Palauan archipelago of western Micronesia. After discussing these new finds, the trajectory of Babeldaob’s sociopolitical transformations is tracked through the leadership strategies expressed in earthwork ritual activity.

INTRODUCTION

The Pacific’s monumental architecture is often the setting for ceremony and ritual activities. Immense structures of stone and earth contain chiefly burials, elevate ritual dances and sporting events, and house temples and shrines. Charged with multiple levels of meaning and value, these highly visible ritual structures are powerful material expressions of ideology. By conveying and imposing the tenets of the political elites upon the population, these monuments and the ceremonies they supported create, structure, and legitimize the hierarchy (DeMarrais et al. 1996). Exploring the ritual use of monumental structures plays a pivotal role in understanding the development of Oceanic socio-political complexity (Kirch 1990; Kolb 1994; Graves and Ladefoged 1995; Clark and Martinsson-Wallin 2007).

Archaeologists have long proposed a physical and symbolic ritual use of monumental earthworks on Palau, the westernmost archipelago in the Caroline Islands of Micronesia (Hijikata 1995; Osborne 1966; Liston and Tuggle 2006; Liston 2007a) (Figure 1). Phear (2007) suggests Palau’s earthworks form a ritual landscape by encompassing elements of ritual and sacred significance used in formalizing land and ancestral associations. These broadly defined ritual uses were largely inferred based on the earthwork’s structural size and distribution as definitive
evidence has not been forthcoming largely due to limited archaeological fieldwork. Recently, tangible ritual functions for some of Palau’s earthwork components were archaeologically identified.

The nature of the socio-political system accompanying Palau’s Earthwork Era is little understood. To explore the larger framework of socio-political development, diachronic distinctions in the ritual use of

Figure 1. Location of Babeldaob in the Palauan archipelago.
earthworks are examined in the interacting but alternative paths to socio-political complexity offered by dual-processualism (Blanton et al. 1996). Variations in the motivations and forms of exclusionary (network) and inclusionary (corporate) political economic strategies are identified with distinctive material and symbolic correlates. Distinguishing between co-existing leadership strategies expressed in earthwork ritual is a heuristic tool for assessing the complexity in changing political economic organization.

**BABELDAOB ISLAND**
The volcanic island of Babeldaob, with a land mass of 313 km$^2$, accounts for about 78 percent of Palau’s land area. Most of the archipelago’s over 380 islands are tectonically uplifted, small coralline limestone islands, locally referred to as the Rock Islands. At 42 km long and from 0.5 to 13.0 km wide, Babeldaob contains the majority of Palau’s earthwork complexes with other earth structures sculpted into the volcanic portions of the three small islands of Oreor, Ngerekebesang, and Malakal.

Just west of the Andesite Line, Babeldaob is divided into three volcanic units dating from the late Eocene through the early Miocene (Corwin et al. 1956). Three low ridge systems split Babeldaob’s along its north-south axis with the largest of these, the Rael Kedam, extending the central length of the island. Rising to a maximum elevation of 213 m, this central mountain area has weathered into well-rounded peaks and small, steep-sided valley systems with narrow ridges. Circling the uplands are lowland hills feeding out to coastal plains formed from the thick clay deposits of weathered andesite, basalt, and dacite. This low undulating terrain is interspersed with limited marine terraces and marshes. Enclosing Babeldaob and nearby islands is a reef system that creates an over 1200 km$^2$ and up to 50 m deep lagoon.

Formed in saprolite derived from the volcanic rock, 80 percent of Babeldaob’s soils are very deep, well drained, and fine textured silty clays that rapidly become saturated and are susceptible to erosion and landslides. These soils support a lowland tropical rainforest dominated by dense strands of volcanic upland forest (60.4% of the total land cover) interspersed with grassland (18.3%) (Cole et al. 1987). Currently, the steeply sloped low bench constricting the majority of the coastal
margin falls to generally wide spans of mangrove forests enclosing 125 km (80%) of Babeldaob’s coastline.

Babeldaob has a tropical maritime climate with slight seasonal variations and a mean annual temperature of 27.6°C. Annual precipitation averages about 360 cm with the highest rainfall, typically about 440 cm, falling in July. The most pronounced seasonal climatic change is the shift in prevailing trade winds that affects rainfall, humidity, tides, currents, sea swells, and marine life (Johannes 1981; Masse 1989). In the Western Pacific Warm Pool and within the Inter-Tropical Convergence Zone (ITCZ), the El Niño/Southern Oscillation and the inter-related changes in the ITCZ significantly impact Palau’s climate and weather (Clark and Reepmeyer 2012).

A MONUMENTAL EARTHWORK LANDSCAPE
Visually impressive and morphologically diverse earth architecture dominates Babeldaob’s topography. The island’s hills and ridgelines were sculpted into an earthwork landscape to create monumentality in the size of individual structures and the extent of modified terrain. With about 60 percent of Babeldaob’s volcanic landscape yet to undergo archaeological survey, an estimated minimum of 64 km² (20.4%) of the island was shaped into earth structures (Liston 2013). As the earthworks were unoccupied at Western contact in the late eighteenth century and largely absent from Palau’s rich body of traditional narratives, understanding the age and a function of the massive structures is reliant on archaeological investigations.

Earthworks are primarily distributed into ten clusters of contiguous modified terrain with each cluster ranging in size from about 8 to 27 km². Integrated into these clusters are earthwork complexes formed from conjoining structural components that include step-terraces, basins, modified ridges, earth platforms, gullies, berms, levelled hilltops, ditches, and crowns or hills shaped into steep-sided and flat-topped forms. Less common structural elements include causeways, saddles, and levelled areas. The individual complexes can be up to 90 m² with their components parts far larger than needed to perform any practical function. Despite the likelihood of expanding laterally over time, many earthworks did not gain monumental status by accretion but were built in one or two dry seasons (Liston 2013).
The wide variation in morphological form of Babeldaob’s earthworks shows they are substantially different in kind than the traditional cultivated landscapes or monumental structures elsewhere in Oceania. Performing multiple simultaneous purposes, Palau’s earth structures supported the full range of community activities in an integrated system in effect from the onset of their construction. They served as foundations for habitation areas and meeting sites; held water management systems, trails, and other infrastructure; accommodated cultivated fields; and contained defensive elements including barriers, sentry posts, signal towers, places of refuge, and boundary markers (Osborne 1966; Lucking 1984; Liston 2007a, 2011). As discussed in the following section they also played significant ceremonial and ritual roles.

Although performing these diverse practical uses, the distributional patterning, magnitude, and elaboration of the earth structures suggest that they were multi-faceted symbols of polity power (Liston and Tuggle 2006; Liston 2007a). The clusters of contiguous modified terrain defined territorial units and integrated socio-political districts, to legitimize corporate claims of land and other resources, create defensible terrain, and symbolically display prestige and power. This display of structures as ideological symbols is implied by the control over the labour needed to construct and maintain the massive structure and by the ability to mobilize, manage, and engineer the construction process.

The chronology of the Earthwork Era, ca. 2400–1100 calBP, indicates that Palau’s earthworks attain monumental proportions in both structural size and extent of modified terrain about 1900 calBP or a little before (Liston 2007a, 2009). This long era is divided into three loosely bounded phases that correspond to the growth, zenith, and decline of earthwork occupation: Early (2400–2150 calBP), Middle (2150–1500 calBP), and Late (1500–1100 calBP). Babeldaob’s earthworks emerged close to a millennium earlier, and were abandoned several centuries before the advent of monumentality on other Oceanic island groups and its re-establishment on Palau in the form of the extensive stone structures of the Stonework Era (ca. 700–150 calBP) (Liston 2009).

Earthwork use was not terminated outright once the earthwork polities were no longer as powerful. Their traditional re-use may have been largely confined to step-terraces supporting near-coastal village
structures and bordering dryland fields and some larger structures functioning as signal towers and boundary markers. Historically, many stonework village graveyards were re-located from clan burial platforms (odesongel) to cemeteries on ancient modified ridges or crowns.

**CROWN EARTHWORKS**

Crowns are Babeldaob’s most distinctive earthworks (Figure 2, Figure 3). The term *crown* originated with Osborne (1966:150‒151), who describes modified hilltops and the adjoining base terrace as “crown and brim” because of their combined hat-like appearance. By elevating and sometimes extending hill sides with fill material or by cutting and levelling the hill’s surface, crowns were sculpted into circles, ovals, rectangles, and squares. Crown faces are cut to rise vertically as much as 10 m, making access to the top difficult and the generally small summit of no more than 20 to 30 m² relatively inaccessible.

A few crowns are solitary structures but most are topographically incorporated into an earthwork complex—not imposed or reworked on it—to form the high point overlooking but separated from the surrounding terraced terrain. Other crowns are lower in the shaped landscape to oversee a specific space. Even then, most crowns stand out prominently on the topography to dominate other structures in the vicinity. Once cleared of historic forest growth, crowns are clearly visible from afar and hence the surrounding population and approaching visitors.

Perhaps a quarter of Babeldaob’s 100 identified crowns are bounded by a ring-ditch, many of which are now infilled. Others are circled by a relatively narrow, ditchless terrace. Some crown summits support earth knobs or embankments that may have been added late in the crown’s use-life. Encompassing a significant portion of at least a third of Palau’s crown summits are shallow depressions bounded by low berms (Figure 4). Crowns with depressions often offer expansive views over lagoon, bay, or river valleys as well as the surrounding earthwork landscape. Slightly larger and more easily accessible depressions are also located off the steep sides of earthwork components, in some step-terraces, and at the base of gullies, some of the latter edging the mangrove forest. Possibly once supporting more stonework, the relatively few stone surface features associated with crowns include pavements, large slabs,
edgings, monoliths, and facings. Cobbles embedded in the sides of crowns suggest some of them may have once been entirely faced perhaps as a stabilizing engineering technique and a symbolic decoration.

Figure 2. Ngerkelalk crown with top half burned, in Aimeliik state (Photo Jolie Liston).

Figure 3. Low circular crown on Ongelwatel in Ngaremengui state (Photo: Jolie Liston).
Crown use is speculated to be associated with symbolic, defensive, and ritual roles (Osborne 1966; Hijikata 1995; Lucking 1984; Liston and Tuggle 2006; Liston 2007a; Phear 2007). Archaeological evidence of some specific crown functions has recently been unearthed (Liston 2013).

**RITUAL IN EARTHWORKS**

As in contemporary Palauan society, ritual was likely an integral daily element of the Earthwork Era population with some form of feasting, ceremony, or custom occurring on terraces alongside the more secular activities. As the stage on which these sacred activities could have taken place, earthworks could acquire traditional significance. Since it is likely that at least some of the earthworks served as a showground for the performance of rituals they can embody memories and meaning to create and configure landscapes and convey the dominant ideology (Phear 2007).

The ritual aspect of some of Babeldaob's earth structures is archaeologically identified by a combination of the prominence of partitioned, difficult to access and confined areas; intentionally hidden prestigious, unique ceramic vessels and caches; the paucity of domestic
midden in contrast to the quantity and variety of atypical and specialized features; and an association with mortuary activity.

**PRESTIGE GOODS**

Prestige goods identify significant socio-political activities or social stratification by reflecting the differential distribution of valued objects. In the Earthwork Era, artefacts distinguished as prestige goods take the form of pottery vessels encountered in specific contexts. Vessels that are intentionally hidden or cached, placed in ceremonial-monumental locations, or associated with mortuary activity are apt to distinguish a pot’s ritual use (Clark and Wright 2007:180‒182). Although the correlation with a specific ritual activity is sometimes unclear, in the majority of cases a ceremonial significance is strongly suggested by their connection to a human burial or special function site and their deliberate concealment. Ritual activity in Babeldaob’s earthworks is often marked by pottery caches and the occurrence of one or two deliberately placed whole pots.

Vessels used in ritual activities might be distinguished from utilitarian ware by special or unique decoration, form, or a finer craftsmanship. Palau’s ritual vessels do not always display unique attributes. Partly due to post-depositional processes, painted and decorated sherds are relatively rare in Earthwork Era deposits. In most instances, the infrequently occurring painted and decorated sherds are unearthed in garbage pits or a secondary context such as construction fill. Painted pottery is linked with elite activities due to the recovery of painted whole vessels in cave and rock shelter burial contexts and painted sherds in prominent crown earthworks (Osborne 1966, 1979; Beardsley and Basilius 2002; Phear 2003). Radiometric dates associated with painted vessels indicate Palauan pots were painted by at least 1800 calBP and that this form of surface decoration continued until close to Western contact (Liston et al. 2011).

None of the vessels recovered with earthwork interments are painted or decorated and they vary in form and quality. It appears unrestricted, shallow oval dishes or plates may be associated with early gravesites in the Ngaraard earthwork district. Oval dishes were a common serving dish in the Stonework Era and their presence in earthwork burial deposits could be a reflection of the contents used as offerings or the contemporaneous prevailing vessel form rather than an
exclusive dedication to ritual events. Some of the pots used as burial furniture display paired suspension holes (Osborne 1966:78; Liston et al. 2011:284–285) showing their use in domestic contexts where they were hung on a wall or post.

Unique pot forms are associated with events interpreted to be ceremonial in nature. The vessel forms unearthed on a low coral-edged rectangle in a step-terrace at the Roismelech crown complex, dated to 2000–1820 calBP (WK-29178, -29179), are not documented in other Palauan pottery assemblages. A deep bowl with bands of raised clay ringing its upper third is a type not yet encountered in the Pacific Islands (C. Sand, pers. communication, 2009). No human remains or burial pits were identified in the Roismelech excavation although the majority of the terrace, including two other rectangular features that may have also supported pottery assemblages, was destroyed before being archaeologically recorded.

A pottery cache on the Sisngebang outcrop crown contained a bowl with a 3 cm tall annular base, the only one of its kind in Palau. The base of Palau's five other documented footed vessels are significantly shorter and made from a clay coil rather than a slab (Osborne 1966, 1979; Liston et al. 2011). Decorated with impressed and incised motifs and brick red paint, the three well-made vessels in the Sisngebang cache were placed face down in the upper fill of a pit feature and appear to have been broken when they were covered with sediment. The cache, dated to 1290–1170 calBP (WK-28521), is likely associated with crown ceremonial activities.

Specific vessel shapes or decorative techniques are not directly linked to ritual acts but highly specialized vessel forms may only be found in ritual contexts (Liston et al. 2011:262–331). Vessels with largely identical morphology, size, and surface treatments are found in both secular and ritual settings. This could signify that in some instances a pot's meaning transformed from secular to ritual or vice-versa. The association of undecorated whole vessels of universal form with some Earthwork Era burials suggests that the display of wealth and prestige may have been emphasized with the vessel's contents or, specifically in pot caches, on the ceremonial activity itself.

CEREMONIAL OR HIGH STATUS CENTRES
The prominent location, small surface area, and patterned distribution
of distinctive crown earthworks are highly suggestive of a specialized function and their importance to the Earthwork Era population. With high vertical slopes and often surrounded by ring-ditches, the difficulty accessing crown summits identifies exclusionary space. It is the significance of prominent locations on the terrain (crowns) and not the sculpted landscape in particular that is expressed in Palau’s oral history and contemporary culture (Liston and Miko 2011). Traditional history identifies higher areas (e.g. the crowns of Roisang, Rois Beketei) as places of magic where demi-gods live or as places of worship or ceremonies (Krämer 1919; Hijikata 1995).

Although the small surface area of most crowns is impractical for habitation, they undoubtedly could have supported a single civic or ceremonial building (Phear 2007:320), perhaps an elite residence. Early ethnographic sources tell of crowns serving as the foundation for high status residences with a few crowns and terraces supporting the homes of high chiefs, magicians, priests, or mediums (Krämer 1917; Hijikata 1995). The immense Ngulitel crown complex is the location of a heavenly village for the gods (Krämer 1929).

The modified ridgeline of Tabelmeduu is archaeologically interpreted as a ceremonial centre or an elite complex (Liston 2008; Tuggle 2011:168–212). Occupied from about 2250 to 1700 calBP, Tabelmeduu rises high above the east and west coasts along Babeldaob’s neck and is surrounded by massive crown earthwork sites. The paucity of domestic midden on Tabelmeduu is not representative of village life or long-term continuous settlement. In contrast, the quantity and variety of atypical and specialized features of potentially ritual association suggests limited and specialized use of the complex.

Caches of exceptionally thin-walled vessels litter the levelled saprolite surface of the narrow ridge and are found inserted into the capping construction fill. A pattern in Tabelmeduu’s vessel interment was noted by Tuggle (2011) after encountering 16 caches, one of which had 20 vessels, in a single earth platform.

Vessels in these ceramic caches appeared to have been placed within another vessel. The deep bowls, most being sufficiently large and robust, may be the pots containing other pots or sherds that were then buried. Deep bowls do not appear in single vessel caches. Ceramic caches in
separate site areas . . . exhibit similar vessel burial patterns (Tuggle 2011:296).

Tabelmeduuu may exhibit evidence of organized craft production in the form of an open-fire pottery kiln (Liston 2008). If so, pottery production may have been highly valued with master potters allotted socially significant areas in which to practice their craft or specialized workshops may have been dedicated to the production of ritual, ceremonial, or elite wares.

**RITUAL CULTIVATION**

Recent excavation identify the *depressions* in many of Palau's crowns and scattered inside earthwork complexes as basins, now in-filled by erosion, processes of decay, and deliberate covering (Liston 2013). The small size and largely inaccessible placement on a conspicuous elevated structure of basins in crowns is suggestive of ceremonial cultivation plots.

A 6 m long and 0.6 m deep basin was built on construction fill in the 9 m high Ngedelchong crown (Liston 2013). Later crown re-modelling removed the berms that likely bounded the basin to create a substantially deeper feature. The crown provides an unobstructed view over the Ngermeskang watershed and its adjoining vast earthwork district. A radiocarbon assay on charcoal collected in the basin’s waterlogged deposits dates the feature’s use to at least 2000 years ago. This is concurrent with an unidentified long-term activity occurring adjacent to the basin that may represent multiple human burial events. The duration of basin use is indeterminable. It was filled with construction material to level and cover the crown and prepare for site re-occupation or a change in function at least 300 years ago and probably much earlier.

The summit of the prominent 18 m high basalt outcrop of Sisngebang also contains a basin (Liston 2013). Sisngebang, north of the narrow passage between the lagoon and Ngeremeduu Bay, the largest estuary in Micronesia, offers a commanding uninterrupted view of western Babeldaob (Figure 5). The roughly 12 by 35 m summit was modified into three equitably distributed sections formed by a bermed basin on the west and two terraces in the centre and to the east. The c. 9 by 12 m basin is rimmed by a U-shaped berm currently measuring 0.6 m high
and 1.5 m wide. The remaining side is bounded by a 0.9 m rise to the central terrace.

The Sisngebang basin was constructed by removing the A and B horizons and levelling the underlying *saprolite* to slope slightly to the east. A carefully fashioned stone retaining wall, currently 30 cm high, potentially lines the base of the entire feature. In the basin, pits, or ditches, about 75 cm in diameter and 35 cm deep were cut through the saprolite to bedrock. The pits are filled with a dark, gravelly, moist silty clay loam containing frequent charcoal chunks and few pottery shards. This same dark, moist sediment is found in a deeply buried, truncated deposit resting on bedrock on the central terrace. Although only the edge of the latter deposit was exposed, it likely formed a basin or pit in the centre of the outcrop.

*Figure 5. Sisngebang crown complex overlooking entrance into Ngeremeduu Bay in Ngaremlengui state.*

Use of the central pit-like feature is radiometrically dated to 1740–1560 calBP (WK-28520) with charcoal samples collected in the basin’s pits producing a calibrated combined date range of 1385–1080 BP (WK-28522, WK-28523). Concurrent with activity in the basin was the
placement of a cache of unique decorated, painted, and annular based vessels on the summit's central terrace. There is no evidence of mortuary activity and the cache may be related to ritual activity in the basin. The basin was intentionally in-filled by at least 1100 calBP. The nature of the fine textured silty clay makes the basins interspersed throughout the earthworks ineffective water catchments. It is more likely they were cultivation ponds, a variant of the wet-field terraces found in Southeast Asia. As cultivation ponds, they are the forerunners of Palau's complex pondfield systems. Supporting mixed gardening, these pondfields are dominated by taro (*kukau, Colocasia esculenta*) that, in addition to being traditional Palau's dietary staple crop, plays a vital role in the economic, social, and ceremonial aspects of ethnographic and contemporary Palauan culture (McCutcheon 1981).

Hijikata (1993) describes depressions on crowns as ponds or fields, and implies that this may have been one of their functions. According to traditional history, a basin in Ngardmau's Ngkisikil era ReDioll crown holds a continuously producing taro patch while the place names of a few basined crowns (e.g., Meklechel a Beab 'taro swamp of the rats') suggest horticulture.

Tests conducted in Babeldaob's four excavated basins (Phear 2007; Liston 2008, 2013) produced no evidence for their horticultural use but the acidic soils preclude identification of cultivars or special soil amendments. Although some crown depressions are currently waterlogged with swamp taxa growing in rich organic soil (e.g., Uluang, Disechir ar Turang), the floor of most are dry except during extended periods of rain (e.g., Oratelruul, Ngameduu, Ngermelkii). Gleyed and ironstone deposits identify standing water in those basins carved into the crowns of Ngameduu (Phear 2007) and Ngedelchong (Liston 2013).

Presided over by priests or high-ranking individuals and in view of the population below and neighbouring communities, ritual events in the crown basins could be associated with expressions of gratitude, petitions to the gods, or fertility rites. The limited quantity of cultigens, medicinal plants, or ornamentals produced may have been dedicated to ceremonial or ritual events or reserved for consumption or use by the upper class. The larger, more accessible inland basins are potentially communal cultivation plots that supplied commoners or groups of high-status individuals with agricultural products.
RITUAL CONSTRUCTION
There is growing evidence that the act of constructing some of Babeldaob’s earthworks was associated with ritual or ceremony (Liston 2008, 2013; Tuggle 2011). Ritual is suggested by the whole pots, pottery caches, and other significant objects that were deliberately inserted beneath and in earthwork fill simultaneous with the building event. Traditional history equates some earthwork construction, such as the Roismelech crown complex (Hijikata 1996:76–78), is linked to the gods. The extensive archaeological remains on the modified ridge of Tabelmeduu appear to almost exclusively represent ritual construction activities. Cut into the saprolite underlying one of the ridgeline’s earth platforms are pottery caches and a deep rock-filled pit containing an elongated stone (Figure 6).

Figure 6. Whole pots and rock-filled pit on basal soil under earth platform construction fill, Tabelmeduu ridge, Ngaraard state (Photo: Jolie Liston).
A pair of complete vessels, one upturned over the other, was placed in the basal construction fill before being capped by a small rock mound and additional fill material (Liston 2008). Within the platform’s construction fill are numerous intentionally placed whole and partial pots. As described above, among and under the ridgeline’s other earth platforms are dense distributions of ceramic caches (Tuggle 2011).

The number of ceramic caches and primary vessels exposed in a single excavation trench through an earth platform on the slope of the Toimeduu Triple Crown complex led Tuggle (2011:168) to speculate, “if this is a representative sample of the entire feature, then about 130 primary vessels were placed in the earth platform.” Dated to about 2000 calBP, the stratigraphic column contained only construction matrices, and no evidence of occupation. Tuggle notes that:

...there is no obvious practical purpose for the construction of the fill layers on the slope. This does not significantly expand the surface area of the earth platform. It is possible that slope construction was specifically to serve as a means to bury the ceramic caches (Tuggle 2011:168).

At Roismelech, an altar dated to ca. 2000–1820 calBP lies under a deep, high step-terrace adjacent to a ring-ditch bordering a crown (Liston 2009, 2013). Overlying an intact occupational layer, the altar’s construction sequence involved preparing the coral-edged, small earth platform, capping it with a bed of broken sherds to support three unique whole pots, covering the feature with an impermeable clay layer, and finally adding a fill layer to raise the entire terrace by 3.8 m. Lacking evidence of occupation or site abandonment, the sequence appears to represent a single event suggesting that the altar is directly related to building the step-terrace. Although considered unlikely, the altar could be a burial marker and have no relationship to the ensuing earthwork construction.

Clearly not rubbish or pot breaks, the whole pots, alters, stone filled pits, and pot caches distributed under and throughout the fill material are directly linked to construction of Tabelmeduu, Toimeduu, and Roismelech and highly suggestive of ceremony or ritual. The ceremony accompanying the construction process may have been related to the act of building the monument or to the planned or eventual uses of the complex. Given the arduous and carefully engineered building process,
the vessels and their contents may be offerings to the gods to petition for the successful construction and long-term stability of the earth structure. The offerings might be in honour of the elite who were financing construction of their tomb, house site, or political arena. Alternatively, the caches and vessels and the accompanying construction of an earthwork component could be a marker memorializing a significant event such as the investiture of a new chief, a war victory, or a formal alliance.

**BURIAL PRACTICES**

Since the 1920s, when the Japanese administration mandated burial of Babeldaob’s dead in cemeteries rather than clan burial platforms (*odesongel*), many village graveyards are located on ancient modified ridges or crowns. Long before their use as historic cemeteries, traditional history and archaeological investigations indicate earthworks were used for gravesites.

Oral history relates that graves of demi-gods and the elite are found in a variety of earthwork components. Tuker crown in Oreor contains the grave of Chelebuul (poverty), a descendant of the giant clam Latmikaik (Krämer 1926) while Omsangel, a crown in Airai, is the burial place of the mother of the demigod Dilmalk (Parmentier 1987; Liston 2007b). The knoll on Aimeliik’s Oltangelmad crown is said to contain the remains of an ancient high chief of Ngerkeai village (Olsudong et al. 1998). Step-terraces in Ngaremlengui and Ngchesar are gravesites for the giant Ngalekdmeuang (Hijikata 1996) and children of the mythic figure of Chuab (Parmentier 1987).

Due to Babeldaob’s acidic soils rapidly deteriorating perishable items, human skeletal elements are very rarely encountered in earthworks. As surface indicators of upland gravesites are poorly defined, earthwork burials are identified by burial pits sometimes capped with clay, sea sponge mats, and often buried rock features; and their occasional association with burial goods, most often pottery vessels. Since distinctions in rank of interred individuals are identified by the relative size or elaboration of the tomb or the display of personal wealth in the accompanying burial furniture, crown burials or those with grave goods are thought to mark elite graves.

The practice of earthworks serving mortuary functions began by at least 2000 calBP as evidenced by the structured burial set unearthed
from deep in an upper tier of the Rois step-terrace complex (Tuggle 2007: 313–345). The three definite and six possible individual graves are orientated east-west and they, along with three whole vessels, were interred from the same surface, although probably buried in two events. A clay layer, dated to ca. 1700 calBP, intentionally capping the burial pits is likely representative of a ceremonial closing of the graveyard.

About 200 north of Rois is the Mesesuiuil earthwork complex where it appears human burials were placed next to a small habitation area with a combined calibrated date range of 2010‒1610 BP (Liston and Rieth 2011). The interments are identified by a series of east-west orientated pits some covered by small paving now covered in sediment. The nearby step-terraced slope of Toimeduu, radiometrically dated to roughly 1950–1700 calBP, unearthed a copious amount of whole pots and three spherical basalt cobbles laid next to a square paving too small to be associated with a structure. Although no certain burial pits or human skeletal material were encountered, the lack of household midden and the context of the surrounding landscape suggest the site is a graveyard.

A 2.5 m high and roughly 4.5 m in diameter earth knob was constructed on top of the pre-existing immense Roisingang crown complex between 1530–1060 calBP (Tuggle 2011: 218–227). The knob covers one and possibly two pits faced (or capped) with basalt and coral cobbles and slabs. Tuggle (2011) interprets the knob as probably marking the burial of high-ranking individual(s).

Equally as prominent as the Roisingang crown is the Sisngebang outcrop crown. Human burials, identifiable by burial pits, almost entirely decomposed teeth, and grave goods in the form of whole pots, were unearthed in the berm crossing the outcrop’s central section (Liston 2013). Due to the relatively thin matrix available for subsurface burials, it is likely the berm was intentionally constructed to hold the burials. As demonstrated by disturbance to the burial furniture during subsequent interments, the berm served as a burial area over a period of time. Occurring by at least 1180‒980 calBP, the berm burials, may have been the last structured activity on Sisngebang outcrop’s, first modified over 600 years earlier.

A red matrix underlying one Sisngebang individual demonstrates the burial was accompanied by ritual activity. The matrix could be staining from a dyed mat wrapped around or under the body or from a
substance, such as turmeric, applied to the body prior to burial. The ritual application of a red “paint” on the deceased’s face and chest is noted by Miklouho-Maclay who visited Palau in 1876 (Parmentier and Kopnina-Geyer 1996:89). A half-century later Hijikata describes close relatives preparing a body for burial by putting:

a little *reng* (turmeric) on the deceased’s lips after chewing it a little bit at a time. Then they purify the body with fragment water called bechochod, created by boiling the leaves of *meradel* (orange) and *bekersiu* (a type of lemon). This is followed by putting *cheluch* (coconut oil) and *reng* on the body until it is absorbed (Hijikata 1993:257).

The ritual use of turmeric is widespread in Oceania and Southeast Asia and, in Palau, symbolizes the family’s great love and affection for the deceased (Palau Society of Historians 1995:42).

**LEADERSHIP STRATEGIES IN EARTHWORK RITUAL**

In this section, leadership strategies expressed in Earthwork Era ritual activities are placed in a temporal framework to explore transformations in leadership strategies and socio-political complexity. An elite or ceremonial centre containing evidence of craft specialization was established on Tabelmeduu ridgeline early in the Earthwork Era, by at least 2250 calBP, and continued until possibly 1700 calBP. The nature of the activity on Tabelmeduu is not clearly defined and could include elements of burial preparation, warfare or defensive positioning, political aggrandization, and elite sanctioned pursuits (Tuggle 2011). Regardless, the presence of a centralized area for significant activity inside an earthwork polity demonstrates some form of authority structure perhaps based on weakly differentiated inherited power.

By ca. 2100 calBP, whole pots, ceramic caches, and other ritually significant objects were deliberately inserted beneath and in earthwork fill simultaneously with the construction event, suggesting their ritual interment. In some instances, earthwork components appear to have been constructed specifically for the ceremonial activity.

Neighbouring kin-based cooperatives could have constructed the first large-scale step-terrace complexes and other earthwork structures. Organizing, financing and managing the workforce needed for these
public works may have become the responsibility of the leader(s) of the host group who recognized the strategic advantage in reinforcing their socio-political position by sponsoring the neighbouring community. If this was case, the accompanying ritual activities and feasting not only helped obtain communal labour but publicly expressed the host community’s wealth to the visitors and became an opportunity to acquire prestige and solidify reciprocal relationships (Hayden and Villeneuve 2011).

The accompanying construction rites were likely viewed by or participated in by the gathered workforce. Alliance in this common goal of the ritually permeated monumental construction process promotes collective thought and cohesion, and memorializes in physical form the shared experience (Tilley 1994; Pauketat and Alt 2005; Phear 2007). As Palau’s earthworks had multiple simultaneous practical and symbolic functions, this communal act of ritual and construction would be a significant factor in enhancing social solidarity and creating shared memories but is unlikely to have been the fundamental objective of their creation as suggested for other monumental structures (cf. Pauketat 2000; Joyce 2004; Pauketat and Alt 2005; Kolb 2011).

These multi-faceted monumental construction events express corporate leadership strategies. The ritual vessel deposition may represent communal offerings to construction gods, although the ritual behaviour could be in honour of the individual financing the earthwork structure. Once built, these structures remained on the landscape to memorialize participation in the shared experience and reinforce community tradition. Ultimately it identifies the monumental structures as a significant component of the landscape and a symbol of the larger socio-political unit, regardless of whether on the community or the polity scale.

Cultivation basins on the restricted space of high crowns beginning about 2000 years ago are a strong indicator that ritual and ceremony were intertwined with the economic production system. Ritualization of cultivation may be related to the substantial effort required to produce crops in the acidic soils and sloping terrain and demonstrate a vulnerability to environmental perturbations.

The prevalence of ritual cultivation in specially constructed basins on crown summits, suggests this was a common Earthwork Era ritual performance. The large number and scattered distribution of crown
cultivation basins may demonstrate a lack of political centralization and indicate rival kin groups using corporate power strategies. Similarly, if used for rituals related to fertility and renewal of the subsistence economy, the highly visible crown cultivation basins could integrate groups and enhance social relations. Contrary to enabling visibility to bond the community, these rituals on crown summits may signify network leadership strategies of exclusion and monumentality. If the harvests were reserved for consumption or use by the elite their status in society would be reinforced or legitimized.

Earthwork interments are found in small structured communal burial sets on low step-terraces by about 2000 calBP. The communal burial areas are associated with a few grave goods that are not identified as connected with a particular grave, although they may be. Whether the primary purpose of these relatively unobtrusive earthwork components was specifically for cemeteries or whether gravesites were incorporated into the households dispersed throughout the area is not known.

Mortuary activity on particular earth structures may have been prohibited to all but members of a specific kin-group or restricted to the upper class. Corporate leadership strategies would be evident if the structured communal graveyards identify an emphasis on kin groups or specific lineages rather than individual leaders.

Ceremonial cultivation on crown summits ended apparently in the Late Phase of the Earthwork Era. In some cases, structured high-status burials accompanied by ceremony supplanted ritual cultivation basins. In other cases, crowns with basins, or the ritual behaviour itself, may have simply been abandoned. An intentional termination of the rite is identified in the deliberate infilling of some basins and suggests there was no longer a need for the associated ceremony.

Until the nature of ceremonial cultivation is understood, the reason for its termination will remain elusive. The cessation of ritual cultivation may be due to a combination of expunging older traditions, reacting to a crisis that the rituals were not addressing, or needing the highly visible crown summits for other activities, such as high-status interments. Or it might signal the transformation of the subsistence regime from a dependence on dryland to wetland field systems. Always a component of the Palauan subsistence economy, the wetlands might have reached the critical stage of expansion where wetland taro production could
support the population and produce adequate surplus and prestige goods.

The Late Phase displays distinct signs of personal aggrandization implying chiefdoms may have gained hegemonic control. This aggrandization is evident in the elaborate formal interments on prominent crown summits. The crowns are clearly visible from the lagoon and across large portions of Babeldaob to symbolically represent the occupant's power and prestige. These prominent locations may have also been chosen to renew traditional and ancestral connections with the past (Phear 2007). The location of the burials and the accompaniment of burial furniture and ritual activity strongly suggest elite grave sites.

Potentially identifying personal aggrandization, a network leadership strategy, is the iconographic symbolism found in the monolithic carved stone faces (klidm). Although without a clear timeframe, the klidm transformed from abstract to more realistic features showing individual actors (Van Tilburg 1991). This final manifestation may represent elites publicly advertising their status or exploits to the population.

This shift to the use of the crown summits from ritualized cultivation basins to individual burial sites may indicate disintegration in social cohesion with increasing social conflict. It is significant that crown burial sites occur simultaneously with the modelled decline of the interior earthwork districts that is largely based on radiometric data (Liston 2009).

CONCLUSION
All of Palau's earthworks may contain some element of ritual that is associated with their creation while specific structures may have been instilled with a highly ritualized or sacred meaning from their inception. As stages for ritual performances the earthworks were inscribed with cultural meaning. They became enduring symbols of spiritual and ideological power to sanction religious authority and the emerging elite. In this way, earthworks promoted social cohesion by renewing ancestral and traditional connections and bonding the community to the land, at the same time they were powerful conduits for institutionalizing belief systems.

Ritual behaviour is identified in the archaeological record almost simultaneous with the creation of Babeldaob's monumental earthwork
landscape. In the Early Phase of the Earthwork Era, some modified ridgelines were reserved for ceremonial or high-status activity areas and ritual is linked to construction of the more massive structures. The nature of the construction-ritual relationship is unclear and could relate to the actual construction event, the occasion that led to building the structure, or its intended function. The Middle Phase saw a substantial increase in the extent, forms, and function of earthwork architecture. Ritual associated with construction and the ceremonial/elite centres continued while ritual cultivation basins in crown summits and structured communal burial sets on step-terraces make their first appearance. The changes in ritual earth architecture in the Late Phase include the cessation of ritual crown cultivation areas and some prominent crowns acquiring individual formal interments. At this same time, iconography may begin to depict political figures.

Although the ritual use of Babeldaob’s earthworks appear to reflect temporal transformations in leadership strategies, these changes are not yet clear. It appears that through time corporate strategies begin to mingle with network strategies to finally culminate in clear personal aggrandization. Multiple small groups are suggested by the large number of ritual cultivation basins while the massive earthworks constructed far larger than needed for any mundane use suggests these groups competed for prestige. Despite the lack of adequate data to identify bounded or hierarchically organized groups inside the larger earthwork polities, this trajectory of socio-political complexity could explain the vast extent of earthworks so early in the cultural sequence. Inside each polity there may be multiple nucleated religious or political centres or central villages. This model of Earthwork Era political development requires substantially more archaeological investigations before it can elaborated upon and confirmed.

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BURIAL PRACTISES IN THE ARCHAEOLOGICAL RECORD ON POHNPEI, EASTERN MICRONESIA

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Abstract: Mortuary architecture and burial practices observed archaeologically offer numerous avenues for improved understanding of past cultural behaviour. On Pohnpei, Eastern Caroline Islands, a wide range of mortuary contexts have been found. Among these, elaborate stone tombs (lolong) are the most useful to archaeologically document the relationships of social and political structure to burial practices. Non-tomb burial contexts are less well understood compared to the lolong, but examining variation in mortuary practices is essential to provide information about prehistory, socio-politics, and ritual change on Pohnpei. Analyses of lolong suggest that they are clan burial places and that architectural variations denote differences in status (Ayres 1990; Ayres and Scheller 2002; Seikel 2011). Evidence from material – a key marker of status – increases after approximately AD 1300, suggesting expansion of regional relationships in stone acquisition. Evidence now available allows consideration of regional variation in tomb construction styles, dates of use, and spatial context within communities.

INTRODUCTION

Burial practices observed archaeologically offer numerous avenues for improved understanding of past cultural behaviour (see: for overview, Chesson 2001; for review, Chapman 2003; and specific applications, Valentin and Clark 2013). This paper considers archaeologically documented mortuary practices on the island of Pohnpei in the Eastern Caroline Islands (Figure 1) of the western Pacific and examines changes in burial architecture extending back almost 1000 years. Burial patterns for Eastern Micronesia in general are useful for related perspectives and ethnographic records are examined for models of how burial ritual and social practice might be reflected archaeologically.

Burial architecture represents perhaps the most distinctive and complex site form found on Pohnpei, and, along with diverse associated
burial goods, understanding its inception and development is significant for interpreting the entire archaeological record for the island.

One critical question for understanding past social and political organization in Pohnpei, an island with a high degree of chiefly ranking historically, is the relationship of burial features, especially a kind of tomb architecture called *lolong* (Pohnpeian), to individual and social group status. Evidence of how social status differences were marked through burial practices during the period from approximately AD 1200 to the 1800s is one significant result of this research. A second question concerns how the varying size of burial monuments relates to population size or density of communities at the regional level within
chiefdoms. We can archaeologically document certain aspects of architectural change associated with burial, especially for the *lolong* tomb structures on Pohnpei, and so we can provide some answers to these two questions. While the chronological picture has yet to be fully elaborated, it does appear that *lolong* construction declines in late prehistoric times at a point when feasting practices and meeting house (*nahs*) construction are expanding, thus suggesting a shift in how status marking was accomplished through ritual. The significance of variation in burial architecture and practice cannot be understood, we think, without considering the settlement pattern and community context. The basic hypothesis is that there is a direct relationship between the complexity of the *lolong* as burial places and the social status of high ranking members of the Pohnpeian political community, as reflected in their clan affiliations. Complexity is examined in terms of monumental construction characteristics, grave goods, ritual activity, and broader settlement context.

**WIDER CONTEXT FOR ISLAND BURIAL PRACTICES**
Much writing about islands has tried to establish the distinctiveness of cultural creations in such habitats (e.g.; Rainbird 2007; Ayres 2013). However, at least for the Pacific Islands, little has been offered as systematic analysis of the archaeological record of burial practice that illustrates a special insular character. Is anything distinctive about human burial practices and evidence of these as found on Oceanic islands? For small islands, abrupt demographic changes resulting in abandonment and subsequent re-colonization represent one such pattern (Bevan et al. 2008). While this pattern is not known for Pohnpei, it is known for coral atolls in the region and would have an impact on mortuary data. In most areas within the Pacific's “Remote Oceania”—except for outside of the Eastern Carolines and West Polynesia (Cordy 1993; Martinsson-Wallin 2007; Clark et al. 2008)—burial in discrete, architectural-monument tombs is not characteristic. In the Pohnpei case, we argue that the tomb-related burial practices intensified over a short time period in ways that reinforced trends towards political centralization and marking social status differences. Documenting such a pattern within the region noted may serve as a useful body of data to address more general questions of socio-political development and intensified social inequality.
Major island-related factors include variations among insular types, such as high volcanic islands compared to low coral atolls; the diversity-restricted, often spatially-compressed, micro-environments; and the small overall population sizes – but high densities – typical of island environments. These factors differentially affect selection of burial locations and resulting bone preservation. The Eastern Caroline high island societies contrast with those on numerous coral atolls in the area who rarely used tombs made of earth or stone, but rather interred their dead in graves dug into the coral sand matrix of the islets. These have been archaeologically recorded on Ahnd Atoll near Pohnpei (Ayres et al. 1981) and on other Caroline Island atolls, such as Lamotrek (Sinoto 1984), Ulithi (Descantes 1999), and Fais (Intoh and Leach 1985), and in the Marshall Islands (Weisler 2000). Conditions for preservation of bone and conservation of burial evidence differ greatly between the two island types. In coral environments, human skeletal material is typically well preserved, but not in acid-rich high island sediments (Weisler 2000, 2001). In the tropical Pacific overall, hot, humid climates, soil characteristics and the dominance of coastal environments are particularly important factors. The emphasis on coastal settlement influenced how and where people were buried as well as the taphonomy and preservation of those interred in such environments. Other issues include the special significance of physical remains representing ancestors, the active use of skeletal remains in ritual, and the close connection between known burial contexts and contemporary island residents. For Pohnpei, these factors have meant that very little human skeletal material is available for analysis.

BURIAL COMPLEXES AND SOCIAL STATUS DIFFERENTIATION
Considerable research on burial in the Pacific Islands provides insight into the complex relationships of mortuary practice, especially monumental tomb construction, and social and political status (for example, Kirch 1980; Ayres 1990; Athens 2007; Bath and Athens 1990; 2002; Kolb 1999). Archaeologists have long viewed variation in mortuary architecture, especially that of a monumental scale requiring a large labour force, as an important indicator not only of burial practices and ideology, but also of differing social and political status (e.g. David
1992; Graves 1986; Kirch 1980; Saxe 1970; Seikel 2011). Both the issue of developing political complexity and the archaeological means to identify local and regional processes of decision making and exchange have been examined with this in mind. Successfully addressing these issues requires chronological control over the variation in forms; this is not particularly good anywhere in Micronesia, but evidence for Pohnpei is developed below.

This paper concerns in particular burial practices and their relationship to monumental stone constructions and the development of social rank differentiation on Pohnpei. We review evidence for past burial practices, including the physical expressions of burial (tombs, grave goods) as well as the interpretations made from these data regarding the conceptual and societal position of individuals involved in burial ritual in early Pohnpeian society.

Pohnpei and Kosrae, another small island located 250 km to the east, are the two high islands in eastern Micronesia where political centralization and complex social ranking appeared in prehistoric times. Kosrae represents a highly stratified society on the smallest of the eastern Micronesian high islands; the only other is the set of small high islands in Chuuk lagoon covering only 96 sq km (see Beardsley 2005; Peoples 1993 for a comparison). Size comparisons are useful because total population size and density are considered to be factors in hierarchy and centralization (see, Cordy 1986), and it has been argued that complexity of burial function is correlated with complexity of social and political structure. After Kosrae, Pohnpei represents the next highest degree of centralization (ethnohistorically), in this case on a larger island of approximately 300 sq km. On both islands, social status was marked by house platform size and ritual feasting. These two features, as well as stone tombs constructed in sizes to reflect the relative status of the localized kin group possessing a certain land area, were also features of the pre-contact social system.

The archaeological remains of burial structures, including lolong, vary considerably in magnitude and in distribution, but models based on oral history and ethnography can help to clarify the systems of meaning behind stone burial monument construction (Mauricio 1987). These models also help to establish the connection between stone monuments and social and political status differences in some cases. However, because Pohnpeians today are mostly unfamiliar with the ritual,
symbolism, and function of *lolong* and other early burial practices, ethnographic methods and ethnoarchaeology are of limited use. Still what is available offers some possibilities for formulating testable hypotheses about the tombs and their significance.

**RESEARCH ON BURIAL PRACTICES AND SOCIAL AND IDEOLOGICAL VARIABLES**

Archaeologists have often used burial practice and its associated features and architecture to discuss social status differences and ideological systems. Saxe (1970) and Binford (1971) in early, influential studies examined HRAF ethnographic data and concluded that there was a cross-cultural correlation among grave site attributes, the grave site symbols, and the person’s status within the community. While others (e.g., Parker Pearson 1982) have questioned the universality of these correlations, archaeological data are generally consistent with these determinations.

Carr (1995) subsequently expanded Binford’s cross-cultural database to include additional burial traits. He determined the most common associations observed cross-culturally between particular mortuary practices, and his conclusion that some mortuary practices reflect social factors more often than philosophical-religious ones and vice versa is useful for archaeological application, although defining some of the variables is problematic. Funeral celebrations, body position, and arrangement of grave furniture are among the practices that more commonly reflect beliefs. The practices that more often are related to social factors include 1) the number of burial types, 2) location within cemeteries, 3) number of individuals per grave, and 4) overall energy expenditure (Carr 1995). To these, we would add location within the larger landscape.

With regard to diversity of burial types, Carr’s item 1, above, a wide range of burial types is known on Pohnpei (see Table 1). These range from ethnographically-reported burial at sea, in which a canoe bearing the person’s body is set adrift in the ocean, basic graves and burial platforms, to massive and elaborate stone tomb constructions (*lolong*). Oral traditions and ethnographic reports link these variants to social status differences (Hambruch 1932, 1936; Riesenberg 1968). As well, there is some evidence for chronologically-related burial types.
The variable of location within burial complexes (cemeteries), number 2 above, is significant in Pohnpei. While there are no known cemeteries with multiple, separate individual graves known from the prehistoric period (but see Hambruch 1936: II:89-96) several tomb chambers were occasionally constructed within the precincts of a single lolong enclosing wall. One such example is Karian at the site of Nan Madol, which has multiple burial chambers within a single enclosure. The relative positions of crypts within the enclosure reflect differences in status, according to oral traditions (A. Marquez, pers. comm).

With regard to the number of individuals per grave (item 3 above), evidence from Pohnpei, specifically Nan Madol, shows that multiple interments are standard for lolong. Age and sex differences are represented in tomb contents as well. Statistical tests run on demographic burial data show that there was no significant difference in age or sex profiles (see Seikel 2011). This suggests that status was ascribed at least to some degree and supports the proposition that lolong functioned as clan burial structures.

The fourth item above, one relating social status to overall energy expenditure for burial practices, including grave goods, is suitable for study on Pohnpei. Architecturally, all lolong are substantial constructions, even the smallest ones consist of approximately 25 to 30 cu meters of basalt with a mass of approximately 70 to 85 metric tons. The largest stone tomb construction, Nan Douwas, at Nan Madol is close to 8,000 cu meters volume, representing 20,000 metric tons of basalt stone and coral. Thus, this aspect of mortuary practice provides good comparative data for further analysis.

These four dimensions, among others, are significant to understanding both socio-political structure and variation in burial practices on Pohnpei. Although the evidence is meaningful and suggestive of status relationships, individual status cannot always be interpreted directly from mortuary practice. In some cases, burial ritual highlights the deceased's kin group and those allied with it by marriage rather than the individual per se, as in David's (1992) discussion of the Mandara. One hypothesis examined here is that lolong on Pohnpei represent status differences among localized clans holding significant leadership roles in the society at varying geopolitical levels.
Specific Mortuary Practice on Pohnpei
A range of burial forms have been identified on Pohnpei, the stone tombs (lolong) being the best known archaeologically (see Table 1 here). Most known burial evidence falls into the Nan Madol Phase, AD 1100 to 1600. The basic tomb complex of stonework historically identified as a lolong on Pohnpei includes an above-ground stone platform with a burial chamber, an enclosing wall with an entryway, and, in some cases, additional architectural features. The other types include interment in stone platforms with no enclosing wall (pehi or other named references), earth mounds (uluhl), sub house-floor pits, and simple sub-surface interment in graves. However, because most of these forms are rare or have not been studied in detail, the most informative archaeologically are the stone constructions containing burial vaults, grave goods, and variation in architectural detail. These provide the basis for examining chronological and functional differentiation based on a variety of attributes.

Overview, Definition and Characteristics of lolong
Based on ethnographic data (Hambruch 1936; Riesenberg 1968; Fischer and Fischer 1957) and recorded oral traditions (e.g., Bernart 1977; A. Marquez, pers. comm.), lolong are identifiable as clan tombs, but also as graves for specific title holders in the chiefly system (Saxe et al. 1980:80). A general term for grave or cemetery in Pohnpeian is sousou. This differentiates non-status burials from tombs of the lolong type, in which burial vaults were reserved for matrilineal clan members of high status. The term lolong in Pohnpei cannot be specifically translated today, but the meaning relates to “protected, keeping safe from,” and refers primarily to the function of the enclosing wall which protects what is inside (E. Eperiam, pers. comm.; A. Marquez, pers comm.). Oral traditions also suggest that some lolong walls served as a kind of fortification, at least in the early historic period, and they had a pole and thatch structure on the main platform (A. Marquez, pers. comm.).

Classification of Lolong Architectural Layouts and Variants
Several variants of the basic lolong form are recognizable in the archaeological record, as seen in Table 1 below
Table 1. Classification of Burial Types on Pohnpei, Eastern Caroline Islands*.

<table>
<thead>
<tr>
<th>Pohnpei Archaeological Site Types Related to Mortuary Practice</th>
<th>Functional Labels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Descriptive Attributes</strong></td>
<td><strong>Labels</strong></td>
</tr>
<tr>
<td><strong>Non-Architectural Sites:</strong></td>
<td></td>
</tr>
<tr>
<td>A. Burial at sea, in canoes</td>
<td></td>
</tr>
<tr>
<td>B. Sub-surface Interments (in soil)</td>
<td></td>
</tr>
<tr>
<td><strong>I. Stone Architectural Sites</strong></td>
<td></td>
</tr>
<tr>
<td>A. Stone Platforms with crypts (stylized, typically using columnar basalt)</td>
<td>Lolong/Tomb</td>
</tr>
<tr>
<td>1. Single isolated platforms</td>
<td>Lolong/Tomb</td>
</tr>
<tr>
<td>2. Platform(s) enclosed by a single stone wall:</td>
<td>Lolong/Tomb</td>
</tr>
<tr>
<td>a) Single detached platform</td>
<td>Lolong/Tomb</td>
</tr>
<tr>
<td>b) Single platform attached to wall</td>
<td>Lolong/Tomb</td>
</tr>
<tr>
<td>c) Double detached platforms</td>
<td>Lolong/Tomb</td>
</tr>
<tr>
<td>d) Double platforms attached to wall</td>
<td>Lolong/Tomb</td>
</tr>
<tr>
<td>3. Structure similar to 2 but with a second enclosing wall; sub-types a.-d.</td>
<td>Lolong/Tomb</td>
</tr>
<tr>
<td>4. Complex structure with platforms in more than one section</td>
<td>Lolong/Tomb</td>
</tr>
<tr>
<td>B. Stone Platforms (<em>Pwukoar-takai, Ketipar, Koasokok Takai</em>)</td>
<td></td>
</tr>
<tr>
<td>1. Rectangular platform with central crypts</td>
<td>Burial/Pehi</td>
</tr>
<tr>
<td>a) Single rectangular narrow crypt</td>
<td>&quot;</td>
</tr>
<tr>
<td>b) Double rectangular narrow crypt</td>
<td>&quot;</td>
</tr>
<tr>
<td>2. House platform, sub-floor</td>
<td>Mwohnihm</td>
</tr>
<tr>
<td><strong>D. Mounds (<em>Uluhi</em>)</strong></td>
<td></td>
</tr>
<tr>
<td>a) Truncated rectangular mounds with stone-facing on the four sides</td>
<td>Graves/Historic</td>
</tr>
<tr>
<td>b) Mounds with rounded cross-section; no stone-facing features</td>
<td>Graves-some cases</td>
</tr>
</tbody>
</table>

(*after Ayres and Mauricio 1997; Davidson 1967).
These typically have stone platforms with vaults using stylized layouts of columnar basalt. The number and positioning of the chambers vary as follows:

*Type IA1* is a single isolated vault. These are rare and do not have an enclosing wall, and are also recognizable as *pehi* (see category B in Table 1). However, the platform is stylized.

![Figure 2. Model of a tomb floor plan, Pohnpei.](image-url)
Type IA2 is the classic lolong with one or more platforms enclosed by a single stone wall (Figure 2). Subtype “a” has a single detached tomb platform within the enclosing wall, and is the most common. Sites showing this format include, for example, Site PoB7-39 or B7-10, Awak. Subtype “b” shows a single platform attached to the enclosing wall. The tomb platform is built into one corner or side of the enclosing wall; an example of this is Site PoB7-2, Awak. Subtype “c” has double detached platforms fitted into a large enclosure. For example, PoC3-1-KAR, Nan Madol, shows this subtype. Subtype “d” displays double tomb platforms attached to the enclosing wall; while rare, this version is seen in the nested Peinkitel tomb (PoC3-1-PEK), Nan Madol, where two lolong outer walls are attached to the inner wall of the massive enclosure.

Type IA3 is a structure similar to IA2, but with a second enclosing wall. Structures of this complexity are rare and the only known example is PoC3-1-NDA, Nan Madol. Sub-types “a” through “d” reflect the possible variants within a double enclosing wall.

Type IA4 represents the most complex structure with vaults in more than one section. This is seen in what Hambruch (1932) identified as cemeteries, for example in Lohd, but these have not been recorded elsewhere.

Basic Plan
As noted above, the basic tomb complex of stonework historically and archaeologically identified as a lolong includes a tomb platform, an enclosing wall often with a constructed entryway, and in certain cases other internal architectural features.

Tomb platform
Tomb platforms range from approximately 2.5 by 2.5 m to 8 by 8 m in plan and stand from 0.50 to 2 m high. In the most common forms, the tomb platform’s retaining walls are constructed primarily from prismatic columnar basalt rocks of varying sizes; typically ones on the order of 1.5 to 2 meters in length and 25 to 35 cm in diameter represent the dominant building blocks. Their size depends to some extent on local availability of stone, but the columns are selected and placed to provide the most impressive retaining wall surface, especially at corners. Construction using columnar basalt is of the style called "header and stretcher," in which alternating rows of columns are placed first lengthwise along the wall edge and the next row of typically smaller
columns is placed at right angles to form the base for the superimposed tier of long columns as well as to anchor the wall pieces and the rubble fill forming the core of the platform (Figure 3). The platform fill is basalt cobbles and boulders.

![Figure 3. Temwen, Pohnpei. View of the wall construction of a remodeled and damaged lolong platform, Site PoC3-5. One section of the original header-stretcher wall work is visible on the right side of illustration. Length is 4 m and the height is 1 m (field drawing: D. Stanzak).](image)

Burials in the stone platform were placed in crypts approximately 2.0-2.5 m long by 1 to 1.5 m wide. Burials – which are thought to be extended because of the tomb chamber shape and the associated grave goods – were positioned on the tomb floor which occasionally has internal stone alignments forming dividers. As discussed below with regard to a specific tomb layout at Site PoB7-44, the dividers separate areas of activity preserving discrete accumulations of bone; these typically represent secondary burial or multiple interments in the same chamber.

Grave goods as portable artefacts are extensive and represent a range of raw materials, marine shell, stone, and bone, in cases where preservation is good. Artefacts associated with lolong include shell beads, armbands, chest pendants, whale teeth, worked bone, shell adzes, and pearl shell fishing lure shanks. The Smithsonian expedition in the 1960s uncovered over 20,000 shell beads and ornaments from the main tomb chamber at Nan Douwas. These artefacts were recovered after
hundreds of other items had already been taken from this location by earlier visitors and other researchers (e.g. Christian 1899; Hambruch 1911; Kubary 1874; plus see Intoh 1998). The artefacts associated with these contexts constitute the burial goods and ritual offerings associated with the individuals buried in a given tomb.

**Enclosing wall**
The enclosing wall is typically made of columnar rock forming a rectangular enclosure often approximately 15 by 20 m in dimensions, and as much as 61 by 140 m if one considers the largest enclosing wall at Peinkitel (PEK) as one *lolong*. Free-standing enclosing walls with header-stretcher faces on both sides are often 1 to 1.5 meters wide, and wall heights are typically 1.5 to 2 m, although some are as low as 1 m and as high as 8 m. The free-standing wall is core-filled with basalt rocks of cobble and small boulder size and varying amounts of coral, depending in part on how close to the coast the structure is located. Some enclosing walls for *lolong* structures within the Nan Madol complex are entirely of coral with little or no basalt stone facing (PoC3-1-PWI-Fea 29; ANG-Fea 7).

**Entryway**
Each *lolong* typically has one or more constructed entryways which are formed with header and stretcher construction forming the sides of the doorway (Figure 4). These may be found in the end or the side of the enclosure, or both. Nan Douwas has small, low rectangular openings or entryways in its enclosing walls in addition to the primary entries, a unique feature. Entryways are found in the oldest known structures and also the most recent, so some persistence of architectural and functional form is represented.

In some cases it appears that a constructed entryway was placed in one side of the tomb platform, itself, that is, leading into the tomb burial chamber (for example, the main tomb at Nan Douwas, Nan Madol). This would seem to indicate that the builders expected to re-use the tomb over time. However, in many cases destruction and collapse of the tomb architecture makes it difficult to confirm if there was a constructed entryway built into the original. Disturbed tombs often have an incomplete set of stone columns spanning the roof of the original burial chamber and the platform end where the original entryway was located.
Interior cists and ancillary architectural features
In addition to the main tomb platform, many lolong have ancillary stone enclosures, small, box-like enclosures, pavements and platforms built in between the main tomb platform and the enclosing walls. Burials and ritual objects such as shell trumpets (sowi, Charonia sp.) have been observed in these and their function as supplemental burial locations and as ritual storage areas seems well supported.

Size and nature of stone building material
Significant variation in stone building materials exists, to some extent this is attributable to what materials were available; however, transport of columnar rock establishes this as a status-associated aspect of construction. Columnar rock—one of the key indicators of the burial complex—was imported to virtually all lolong construction sites. The major contrasts are in the amount of columnar basalt used. Some tombs utilize columnar basalt for all major architectural parts (walls, platforms) and only some limited construction is done with stream cobbles. In others, the enclosing walls may be made almost entirely of non-columnar rock, and columns are used only in the tomb platform, or
the corners of structures alone may be marked with larger columns positioned to highlight their length and mass. For example, site PoB7-2 in Awak has small boulders and columns in the walls (11.5 by 12 m or 138 sq. m), but a large column of 2.5 m length serves as a capstone for the southwest corner (Ayres and Haun, 1980).

**Location and orientation of tomb chambers within the main platform**

Archaeological and osteological data establish that the chambers included in platforms within the lolong enclosure were used for multiple burials, and thus were used for burial over several generations. Analysis indicates that adults and sub-adults of both sexes are represented in human skeletal material in tomb chambers. This reinforces the ascribed nature of the status that allowed, or required, certain individuals to be buried within the structures (see Ayres and Haun 1980; Ayres 1990; Seikel 2011; Owsley, personal communication).

The burial chambers within the tomb platform vary considerably and may reflect remodelling as well as the plans set out at the time of original construction. One rectangular vault positioned lengthwise in the platform is most common; however, two parallel vaults, or two chambers perpendicular to one another, and combinations of larger and smaller tomb niches containing skeletal material have been observed. Supplemental platforms, including possible burial structures, built within the main enclosing wall represent further variables in the known structural and spatial patterns.

The presence of multiple tomb structures within enclosing walls represents another complicating aspect for interpreting the architectural remains of lolong. The standard is one enclosed tomb platform with one or two vaults, but in some larger enclosures, especially at Nan Madol, several platforms are found within a large stone-walled area. In some cases, for example, the 50 by 70 m enclosing wall of Nan Douwas (NDA) and the 140 by 60 m one at Pein Kitel (PEK), these represent nested tomb enclosures, that is, multiple lolong within a larger enclosing wall.

**A SPECIFIC EXAMPLE: LOLONG SITE PO-B7-44**

Aspects of lolong architecture are best discussed using a concrete example from site survey. This serves to show unique construction arrangements as well as to illuminate the considerable variability of
Pohnpeian architecture and modifications in a single structure through time. In Awak Valley, a compact settlement area on Pohnpei’s north coast, archaeological survey has documented several hundred sites, including ten lolong in various states of preservation (Ayres and Haun 1980; Ayres et al. 1981; Ayres 1990). Mostly, these lie in an arc at mid-elevation within the valley and each may have been associated with one

Figure 5. Plan of Site PoB7-44, a lolong in Awak section, Uh District, showing enclosing wall and tomb platform (Mapping: William S. Ayres).
of the primary land-holding units (*paliensapw*) in the valley. These *paliensapw* together form a larger politically-bounded unit, a *kousapw*, set up as a chiefly administrative unit. However, these structures pre-date the historically-known land use divisions in Awak and their distribution is not isometric with present-day land boundaries. On the other hand, they are positioned with regard to the scale of *paliensapw* landholdings.

Investigations in Awak provide considerable evidence about past mortuary practice and specific observations about architectural features, associated artefacts, and layouts for several *lolong*, including Site PoB7-44 (Figure 5). The site lies on sloping terrain on the valley’s east side and approximately 300 m from the coast. The original enclosing wall (Feature 1) encompasses an area of 235 sq m. It varies from only 20 to 80 cm in height because many stones were re-cycled for historic fence building; however the original wall alignments are well preserved. The platform stands approximately 100 cm above the level area within the tomb enclosing wall. A single stone column extends across the open main tomb chamber; it remains in place and thus indicates the original tomb height. It and several others found on and around the platform are derived from the tomb roof which originally consisted of 8 to 10 columns placed in parallel across the top. The remaining wall height at the south end of the main chamber is 108 cm from the surface to the interior paved surface. Careful clearing and examining of the chambers in the platform allowed for confirmation of the remaining contents.

No articulated skeletal remains were observed, but several concentrations of small bone fragments were recorded. The fragments were located primarily in sediments 5 to 10 cm above the chamber floor. Concentrations designated 1-6 were observed in the two tomb chambers (Figure 6). Five of these were in the main north-south oriented tomb chamber and they contained a variety of identifiable, but poorly preserved bones. This chamber is approximately 2.5 m long and varies from 50 to 60 cm wide. Concentration 1 (C1 in Figure 6) showed a fragmentary *femur, tibia, humerus*, other unidentified long bones, a clavicle, and several cranial fragments (teeth, frontal, mandible). The concentration adjacent, No. 2, preserved two fragments of humerus, other unidentified long bones, a mandibular fragment, a clavicle, and cranial bones (parietal, occipital, and other).
Concentration 3, located north of C2, showed a femur and four cranial bones (parietal, occipital). Concentration 4, located inside a border made of long, flattish stones placed on edge, contained several cranial bones (parietal, frontal, occipital), unidentified long bone fragments, and...
A fish dentary. Concentration 5 at the south end of the chamber provided one occipital bone fragment and four other cranial fragments. This was located at the edge of a section of pavement made of flat stream cobbles measuring 12 to 15 cm across. The northern section of the chamber floor evidently was not paved. A sub-pavement probe disclosed only one small nodule of coral, a material transported to the structure.

Concentration 6 was observed in a rectangular cist in the platform fill measuring approximately 100 by 60 cm. This was possibly for secondary burial. The bone deposit of unidentifiable pieces was clustered between a substantial N-S wall inside the tomb fill and a low border of rocks standing on edge some 60 cm away. Two dog teeth and a poorly preserved marine shell (spider conch, *Lambis lambis*; Pohnpeian *lahng*) also were found on the floor of this chamber.

A complicating factor for analysis of bone preservation and of spatial layout is the purposeful destruction of skeletal remains in tombs by enemies, as reported by Hambruch (1936:II:153). As noted, the original enclosing wall for B7-44 has been substantially dismantled for building stone fences in the historic period. As well, the tomb chambers were opened and the covering columnar pieces removed at some point in the past. Despite the tomb disturbance and the deteriorated condition of the bone it is clear that each concentration in Site B7-44 is not necessarily indicative of a single individual; the minimum number of individuals in the tomb is eight. Age and sex was not determined because of the fragmentary nature of the remains. Thus, multiple burials were positioned both in the main chamber and the side cist. Overall, the main tomb chamber was sufficiently large for several burial placements, extended or flexed, but the arrangements of bone concentrations and the floor features consisting of pavements and rock-defined enclosures break up the floor in a manner suggesting that with re-use, some older bones were deposited in small depressions to move them out of the way but to keep them protected within the tomb.

This structure is thought to be relatively early in the developmental sequence for burial structures. It is assumed that the enclosing wall and the tomb platform are contemporaneous, but no independent dating is available. A radiocarbon sample of sediment taken from under a rock at the tomb floor level was analysed (see Figure 6), and this provided a date of cal. AD 1178-1445 at 2 s.d. (calibrated; the original reading is
GaK 7641, 650 +/- 100 BP; Ayres et al. 1981). While the date may be questioned in that it is derived from bone collagen, it provides an estimated age for construction and early use of the tomb chambers that probably falls into the 13th century.

**VARIATION AMONG LOLONG**

*Lolong* enclosures are typically rectangular in shape, and in no case are the four sides equal. They vary in dimensions around the island and at Nan Madol. The tomb complex on Nan Douwas at Nan Madol has a trapezoidal-shaped enclosing wall on the islet edge, but the inner enclosing wall for the main tomb is more nearly square (Figure 7).

The burial platform is commonly centred within the enclosure. Occasionally, the tomb platform is built up against the enclosing wall, either on a side, in a corner of the wall, or in one rare case, extending between two side walls to occupy one end of the enclosure (PoC3-1-ANG 1). Variation in platform location may be related to the presence of other burial platforms in the overall enclosure (PoC3-1 KAR), construction considerations, or specific attributes of the clan or individual buried in the *lolong*. According to oral accounts (A. Marques), tomb platforms constructed against their enclosing walls display bravery or a lack of fear in having one’s tomb disturbed. In most cases the height of the tomb is lower than that of the surrounding wall, and in this way, the interior of the tomb is protected by the enclosing wall. This supports the concept that the deceased were to be left undisturbed by intruders.

There is no systematic pattern in where the entryway is located, but the tendency is to have it at one of the narrow ends of the enclosing wall. Entryways vary in width and in some cases there are two entryways into the enclosure. In one rare example, Karian at Nan Madol, a lintel-like set of columns spans the top of the entryway, making it more like a doorway approximately 1.8 meters high. The construction of lintels in *lolong* entryways is not common, but structural collapse may make it difficult to identify these.

The style of entryway is only one consideration, as the entryway also provides a facing orientation for each *lolong*. A comparison of *lolong* at Nan Madol finds that, where an entryway is identifiable, it is often located in the southwest side of the enclosing wall (see Seikel 2011).
Unfortunately, ethnography and oral tradition do not suggest the possible meaning of these orientations, but a broader comparative study of lolong orientation in archaeological contexts is underway.

Figure 7. Plan of Awak site B7-32, a lolong with a centered, double-burial chamber in the platform. (William S. Ayres).
Table 2. Pohnpei Tomb (Lolong) Sample Showing Dimensions and other Size Attributes (Awak samples compared to Nan Madol and related ones).

Note: Order Reflects Increasing W/L Ratio (that is, enclosures becoming more square for each of the two sample sets):

<table>
<thead>
<tr>
<th>Site*</th>
<th>Type</th>
<th>L. (m)</th>
<th>W. (m)</th>
<th>W/L Ratio</th>
<th>Area Enclosed</th>
<th>Platform Area</th>
<th>Plat/Enc Area Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWAK</td>
<td>IA2a</td>
<td>19</td>
<td>15</td>
<td>0.79</td>
<td>285</td>
<td>28</td>
<td>0.10</td>
</tr>
<tr>
<td>PoB7-39</td>
<td>IA2a</td>
<td>10.5</td>
<td>8.5</td>
<td>0.81</td>
<td>89</td>
<td>25</td>
<td>0.28</td>
</tr>
<tr>
<td>PoB7-10</td>
<td>IA2a</td>
<td>11</td>
<td>10</td>
<td>0.91</td>
<td>110</td>
<td>28</td>
<td>0.25</td>
</tr>
<tr>
<td>PoB7-44</td>
<td>IA2a</td>
<td>23</td>
<td>21</td>
<td>0.91</td>
<td>483</td>
<td>28</td>
<td>0.06</td>
</tr>
<tr>
<td>PoB7-02</td>
<td>IA2a</td>
<td>12</td>
<td>11.5</td>
<td>0.96</td>
<td>138</td>
<td>19</td>
<td>0.14</td>
</tr>
<tr>
<td>NAN MADOL AREA</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
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<td>PoC3-1-</td>
<td>IA4</td>
<td>70</td>
<td>50</td>
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<td>3,500</td>
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<td>0.03</td>
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<tr>
<td>NDA</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PoC3-</td>
<td>IA2a</td>
<td>20.3</td>
<td>14.9</td>
<td>0.73</td>
<td>302</td>
<td>43.6</td>
<td>0.14</td>
</tr>
<tr>
<td>Pein</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Mesehl</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>PoC3-</td>
<td>IA3b</td>
<td>29.0</td>
<td>22.6</td>
<td>0.78</td>
<td>655</td>
<td>77.6</td>
<td>0.12</td>
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<tr>
<td>Small Is.-Large Enc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PoC3-</td>
<td>IA2a</td>
<td>12.8</td>
<td>10.8</td>
<td>0.84</td>
<td>138</td>
<td>20.4</td>
<td>0.15</td>
</tr>
<tr>
<td>Peipas Island</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>PoC3-</td>
<td>IA2b</td>
<td>13.8</td>
<td>13.0</td>
<td>0.94</td>
<td>179</td>
<td>77.6</td>
<td>0.43</td>
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<tr>
<td>Small Is. Lolong</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NDA is Nan Douwas Islet and tomb at the Nan Madol site, PoC3-1; Small Island large enclosure refers to a large lolong on that island near Nan Madol; Peipas Island lolong is on the SW side of Temwen Island (Saxe et al. 1980); and Small Island lolong refers to a smaller tomb within the larger enclosure.

To facilitate comparisons, Table 2 indicates that the range of length to width ratios for lolong enclosures are very similar for the samples from Awak and the Nan Madol area, even including the massive Nan Douwas tomb complex. However, overall, platforms tend to be larger in the Nan Madol area.

Based on the architectural layouts provided by detailed mapping, lolong orientation, either in the alignment of the axes or in the facing direction, is usually distinguishable. The bearing (from magnetic north)
of the diagonal extending through the northernmost corner of the enclosure represents one such measure of orientation. Information in Table 3 shows considerable variation but several enclosures fall around 5-12 deg, another set near 20-25 deg, and two at 40-50 deg. The range of orientation angles for these enclosures shows that only in the Nan Madol area are some enclosure diagonals oriented as much as 45 degrees East of magnetic North.

Table 3. Pohnpei Tomb (Lolong) Sample Showing Size and Orientation Attributes (Awak samples compared to Nan Madol ones).

Note: Order Reflects Increasing Orientation Angle (that is, enclosure diagonal shifting to the E from magnetic N (for each of the two sample sets):

<table>
<thead>
<tr>
<th>Site*</th>
<th>Type</th>
<th>W/L Ratio</th>
<th>Plat/Enc Area Ratio</th>
<th>Tot Vol</th>
<th>Mass</th>
<th>Corner Angles</th>
<th>Orientation Diagonal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AWAK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PoB7-39</td>
<td>IA2a</td>
<td>0.79</td>
<td>0.10</td>
<td>145</td>
<td>392</td>
<td>34,56</td>
<td>3</td>
</tr>
<tr>
<td>PoB7-10</td>
<td>IA2a</td>
<td>0.91</td>
<td>0.25</td>
<td>70</td>
<td>189</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>PoB7-44</td>
<td>IA2a</td>
<td>0.91</td>
<td>0.06</td>
<td>141</td>
<td>381</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>PoB7-02</td>
<td>IA2a</td>
<td>0.96</td>
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<td>IA4</td>
<td>0.71</td>
<td>0.03</td>
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<td>21,6</td>
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<td>44</td>
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*NDA is Nan Douwas Islet and tomb at the Nan Madol site, PoC3-1; Small Island large enclosure refers to a large lolong on that island near Nan Madol; Peipas Island lolong is on the SW side of Temwen Island (Saxe et al. 1980); and Small Island lolong refers to a smaller tomb within the larger enclosure.
Analysis of a larger sample may show some consistency around the island in this regard; however, at present no overall pattern beyond this is observable.

Table 3 shows that interior corner angles for the enclosure are similar in Awak and the Nan Madol area tombs (see Saxe et al. 1980 for discussion of 3-4-5 triangular relationships). As well, the data indicate overlapping size ranges and construction volumes between the two areas. Although the underlying architectural style is the same, the larger structures by far are located in Nan Madol.

One Awak tomb, shown in tables 2 and 3, Site B7-39, Pein Keren, does show the attributes of some Nan Madol area tombs, angles of near 34 and 56 degrees, a W/L ratio of 0.79 and extensive use of columnar basalt in construction (see also Ayres 2002). It is likely that as a pattern associated with Nan Madol, Pein Keren represents one of the latest of the Awak tombs and as such it replicates the Nan Madol pattern most specifically; that is, the shape is determined by Nan Madol planners or by the accepted pattern at Nan Madol. This tomb is thought to post-date Site B7-44 discussed above. Its current condition, status, and importance in contemporary political relationships also support this interpretation.

**REGIONAL OR STYLISTIC VARIATION**

Regional or temporal patterns of stylistic variation are recognizable in some cases based on the attributes listed above. Examples from all parts of the island are available, but in some cases these do not represent results of extensive surveys so the distributional and contextual data are incomplete.

One regional aspect that can be considered is variation in construction style or material types. Strict header-stretcher style constructions are most common at Nan Madol, while basalt boulder constructions, incorporating some header-stretcher components or columnar basalt facing, are more common on the main island (e.g. PoC3-5, Temwen). The whole range of construction types exist at Nan Madol, though coral rubble is substituted for basalt boulders in some structures (e.g. PoC3-1-ANG1, and LPK2). Based on the present sample, it appears that boulder and rubble wall construction is likely due to the proximity of the sites to sources of cobbles and boulders and to coral in coastal locations. Many *lolong* on the main island incorporate small pieces of
coral in the platform or wall construction. The ritual significance of this has been considered, and it is noteworthy that the lolong constructed almost entirely of coral within Nan Madol are in the so-called “priestly” sections of the eastern seawall set of artificial islets, for example, Angeir (PoC3-1-ANG), Lukepenkarian (LPK) and Pahnwi (PWI).

The sites primarily built with boulders and rubble fill may possibly date to a different time frame than those constructed in the header-stretcher style using columnar basalt. However, it is more likely that material and stylistic variation may be linked to the relative status of the clan or group affiliated with the lolong, thus, the materials used signal status.

EVIDENCE OF REMODELING OR RE-USE
Evidence of remodeling and re-use is present in some sites, including the main tomb, Nan Douwas, at Nan Madol, but more detailed analysis of individual structures is required to explore this further. Historic period wall construction and re-cycling of stone is a major problem for interpreting evidence of pre-contact structural modifications.

Recycling of building materials is most clear in post-tomb use. Primarily, this reflects re-use of stone, especially at Nan Madol, but also in Awak sites where incomplete wall alignments, missing columns and broken walls document stone removal for use in building elsewhere. At Nan Madol, one of the better examples concerns the tomb Pein Kitel (PoC3-1-PEK) and adjacent islets like Pahndipap. Stone columns were removed from an early islet-enclosing wall at Pahndipap (PoC3-1-PDI), and re-used for construction of what is considered the later, massive tomb enclosure of Pein Kitel. Prepared stone-transport paths between the Pahndipap and Peinkitel support this interpretation. At a later point, probably after AD 1500-1600, stone columns were recycled from the main tomb wall of Pein Kitel to build several stone platforms, apparently residential. At least two major stages of recycling are represented here, then, indicating the importance of examining lolong remains from the standpoint of the taphonomy of construction and deconstruction. Reuse and recycling may have implications for geochemical sourcing studies, stone acquisition in labour investment, and related functional issues for all Pohnpeian architectural remains.
EVIDENCE OF RITUAL ACTIVITIES RELATED TO LOLONG

Burial Goods, Interment
The fundamental activity documented in these archaeological structures is human burial. This is identifiable as interments in extended position within the central grave chamber. Extensive disturbance from both natural processes and cultural practices means, however, that no undisturbed burial locations are observable today. That is, the tombs have been broken into and vegetation growth has changed the floor areas of the tombs. Awak site B7-44, described above provides perhaps the best example we have of internal layout of architecture and remains within the tomb chambers. Certainly, a variety of ritual activities took place in the context of lolong, either within the enclosing wall or in adjacent areas.

Kava (Sakau, Piper mythysticum) Use
The aspect of ritual that is most clearly documented archaeologically is kava preparation and use. The use of kava in association with the lolong is documented by the presence of stone slabs (peitehl) for pounding preparation; this implies other associated ritual, but the specifics are not known. Historically, and today, kava is prepared regularly at meeting houses (nahs) on Pohnpei and the archaeological markers are identical. The stones are located often in front of the lolong's main entrance, or inside the enclosure. Small paved areas, stone alignments, and stone hammers (moahl) are sometimes found in association with the kava-stones.

Coral and Other Non-local Materials
The practice of incorporating small quantities of coral in the architectural fill of the lolong, as noted above with regard to building materials, is one aspect of probable ritual use of marine material. While little ethnographic detail exists, material from the sea was purposefully buried or incorporated into the stonework of these structures, presumably for symbolic purposes. Often, these coral pieces are not readily visible because they were placed inside the core of the walls. Other marine associations are documented in the presence of marine shell. Bivalves, especially pondylus (Spondylidae) and Tridacna (Tridacnidae), as well as Conus (Conidae) shells were important for
producing shell ornaments, and their association with graves, especially in the Nan Madol context.

**Food Remains and Artifactual Associations:**
Some shellfish, and also bone remains (dog, turtle, bird), represent food remains found inside enclosures and in tomb chambers. Gastropods such as the spider conch, *Lambis lambis* (*lahng*), and bivalve clams such as *Anadara* spp. (*lipwei*) and *Gafrarjum tumidum* (*kemei*) represent food remains from contemporaneous, or, possibly, later, usage. Shell scatters occur within *lolong* tomb enclosures but these are relatively rare, being known primarily from Nan Madol. Preservation of shell in non-coraline environments, such as on the main island of Pohnpei, is poor and so the record seems to be quite incomplete. Mammal and marine food remains are also found in tomb chambers. These include dog, turtle, fish, especially of recognized status feasting species such as the *kemeik* (humphead parrotfish, *Bulbometopon muricatus*), and bird or chicken. While not numerous, they are a consistent attribute of sediments at or near tomb chamber floors.

Artifacts found within the tomb enclosure are quite limited, but do provide some indications of activities associated with burial practice. These include shell artifacts of the types typically found in the larger site area. The main artifact associations with *lolong* come from the burial chamber in the form of grave goods. These are best known from Nan Madol contexts due to good preservation resulting from the coral sand matrix of the archaeological deposits; this preserves shell and bone well; however, some artifactual evidence is available from mainland sites as well. Because stone tools are rare in Pohnpei in general, these are not typical grave marking artifacts. Instead, when preserved, shell ornaments represent the most direct evidence of burial practices. Extensive use of shell disk beads was common for marking high social and political status. These beads were attached to chiefly girdles worn around the waist and also were used as neck pendant strings and ear ornaments. At some of the highest status tombs (i.e., Nan Douwas), thousands of disk beads made from *Conus*, *Strombus* (Strombidae), and *Tridacna* (Tridacnidae) have been recorded. A major set of grave offerings consists of *Conus* and *Tridacna* shell rings or bands (Figure 8); these are found in most burial contexts where shell is preserved. Some of these were large enough to use as arm bands but most were bangles
for ears, necklaces, or other pendant ornaments. Ornaments and tools made of pearl shell represent another significant grave offering. These include pendants, trolling lure shanks, and fishhooks. The lure shanks have been identified by Hambruch (1936:II: 39) as a kind of money or exchange valuable.

**TIME FRAME FOR LOLONG USE**

The chronology for lolong use is not yet well documented, but there are a few radiocarbon dates directly associated with burial contexts. Because these structures contain burials, in recent years field investigations that might disturb grave contents or other ritual aspects of the lolong have been limited because of local residents’ concerns. Wallin and Solsvik (2010) have reviewed issues about radiocarbon sample provenance and architectural contexts for marae in East Polynesia, and differentiate dating materials associated with pre-construction, construction and use, and post-use activities. It is essential
to make these same distinctions when assessing dated samples from *lolong*.

At present, the oldest known structures date to approximately AD 1200 at both Nan Madol and in Awak, the local-level chiefdom on the island’s north coast as discussed above. The dating of architectural units underlying tomb structures (as at Nan Madol) shows primarily details about when the islets were constructed, not necessarily when the tomb itself was actually built. However, dates from islet fill under or near *lolong* at Nan Madol support the time frame set by the Awak and recently-dated Temwen structures. Three directly-dated *lolong*, from Awak and Temwen Island (PoB7-44, PoC3-5, PoC3-8), provide the basic information and place *lolong* construction and use between approximately AD 1200 and 1650. Thus, this burial practice begins near the start of the Nan Madol Phase (Ayres 1990). The use-life of the *lolong* constructions probably extends into the 18th or 19th centuries; however, the time frame for the latest *lolong* construction is difficult to establish given available evidence. There is no specific written reference to new *lolong* being built during the 19th century, although old constructions were most likely used well into the historic period. In sum, the time frame for construction and use of *lolong* as active religious and burial locations appears to fall into the last 800 to 1000 years while Pohnpei’s society was experiencing its greatest social differentiation and chiefdom expansion.

**SETTLEMENT PATTERNS AND INCORPORATION OF BURIAL MONUMENTS INTO COMMUNITY SETTLEMENTS**

There are few other archaeologically-visible structures that can be associated functionally with *lolong*, however, the burial platforms and enclosures were part of a larger residential and agricultural settlement. Survey in Awak shows that *lolong* were part of a residential complex consisting of chiefly residence area, sleeping houses, communal cooking structures, a boat house-meeting house, and food preparation and storage areas (Ayres and Haun 1980; Ayres et al. 1981) (Figure 9). The late prehistoric to early historic pattern is certainly the best known; however, the configuration of *lolong* and residential settlement can be identified in archaeological site survey results, especially from Awak as discussed above, over a longer time frame.
Oral tradition provides the best evidence for the model that the lolong tombs were built by and used by localized lineages of clans (dipw or sou) that have wide island distribution (Riesenber 1968). Supporting archaeological data establish that the tombs can be placed chronologically and spatially into settlement areas or farmsteads that are comparable to extended hamlet communities. In some areas, a localized sub-clan (sou) and chiefly ownership represent associations with specific lolong structures (A. Marquez, pers comm.). The principles of matrilineal clan exogamy and avunculocal post-marital residence apply historically. Fischer and Fischer (1957:132) argue that while this pattern was not uniform in the later historic period for Pohnpei, it existed in earlier times. For status-related clan burials, males, females, and children would be buried in the same tomb. Residents of a particular area who did not belong to the dominant local clan, primarily wives, would have been buried in their own clan tombs elsewhere. Lower status individuals would be interred in other burial contexts. A

Figure 9. Model of a residential complex, Pohnpei, including burial architecture as part of the larger settlement unit for the meseni en keinek residential area.
basic question affecting archaeological interpretations is whether there would be more than one lolong in use at any given time in a community. The lack of any long-standing clan residential unity – if clan exogamy was practiced as it was historically – means that communities must have included multiple clan members, typically dominated by one clan which built and maintained the main stone monument to clan status, the lolong. This suggests that multiple lolong would be in use at any one time within a land-holding area such as a kousapw.

Relation to Other Status-Related Architecture
A late prehistoric meeting house complex, the nahs, a building with a U-shaped floor plan, is often archaeologically identifiable when stone foundations were used. This structure became the dominant marker of social and status activity in late prehistoric times for Pohnpeian society. Oral history suggests that some kind of meeting house structure was in use during the time period when lolong were an integral part of tomb burial complex on the island, but its form and details remain unclear. All known meeting houses of nahs form date to the post-Nan Madol phase. This appears to have developed as an architectural feature in the formal U-shaped plan sometime after the 16th century, and thus they largely post-date the lolong. Early, but still visible, nahs constructions and ones currently in use are often found in close proximity to lolong and document an important connection. Historically, as today, the relationship of the nahs to burial practice was that it served as a place for funeral feasting, and this may have shifted some functions away from the lolong to the nahs.

Role in the Larger Community
Clan structure on Pohnpei is integrally tied to the lolong and its uses. The burial architecture was created, maintained, and used by the clan or a localized subgroup of a clan having island-wide distribution. Understanding the practice recorded historically and ethnographically makes the proliferation of lolong more understandable. For example, there are at least ten lolong of varying expected ages in small Awak valley, approximately 1.5 sq km; these are distributed within existing land-holding units, paliensapw, mostly at lower elevations, but also higher ones within the valley. The paliensapw are in turn embedded in the larger kousapw unit.
CONCLUSIONS

Burial Types, Variation, and Significance
A description and classification of the burial patterns of Pohnpei (see Table 1), including site data from Awak and Nan Madol illustrating mortuary practice extending back many generations, has been provided. A characterization of Pohnpeian mortuary practice shows the significance of the lolong burial and tomb complex. Despite the difficulties of dating Pohnpeian architectural sites, the limited preservation of human skeletal material and offerings, and the small sample size of recorded mortuary sites, ritual burial centres show a clear connection to status in the complex-ranked Pohnpeian society. Especially within Awak and to some extent, Tewmen Island, the position of mortuary sites within larger settlements and landscapes can be documented archaeologically from field surveys within extended family landholdings (paliensapw). The patterns identified here can be tested against more robust regional data as these become available.

Lolong as an Evolving Mortuary Complex
Among the burial features, the lolong stands out architecturally; its long duration of use and its significance for marking social difference and political power make it of special interest. The absence of stone tombs known prior to the era of major Nan Madol construction, from approximately AD 1200 to the late prehistoric period, helps define the significant time frame. Based on this evidence and the later connections architecturally between Nan Madol and mainland settlements, we conclude that the first wall-enclosed platform tombs were associated with the rise of political complexity and hierarchy. Variation in tomb types, including ones that show an unenclosed burial platform may be an older form, provides a hypothetical sequence for mortuary status-evolution throughout the Sau Deleur Period (AD 1100-1500) and later.

Social Organization, Including Kinship Associations
Pohnpeian mortuary practice and its associated architecture show some aspects of ideological systems typical of islands. Features of mortuary practice that we think reflect aspects of insularity include rapid florescence of building styles, including replication of basic mortuary models and associated grave goods.
The significance of mortuary sites in relationship to kinship entities on the island, especially clans, has been established from oral traditions for the historic period. The limited evidence from the archaeological record—primarily from distributions and spatial configurations within structures—provides some basis for an association with a particular level of clan membership. Kin groups (tracing descent from a common ancestor) within larger matrilineal clans are the most likely entities responsible for building and maintaining tombs. Still, the scale of these in terms of size and geographical or settlement scope cannot be determined at present.

A hypothesis addressed here is that there is a link between burial and lolong architecture as graves provides a basis for archaeologically differentiating the social status in the kin group as the highest status elements of political communities. Support is provided for the specific hypothesis that tombs represent status differences among localized clans holding significant leadership roles in the society at varying geopolitical levels. Political communities on Pohnpei are at the level of district (wehi) and subunit called kousapw. It is argued that kousapw or paliensapw level tombs are not only smaller than those of wehi level, but also show different architectural and building styles.

Many details about mortuary beliefs important to Pohnpeians in the past cannot be recognized in the archaeological record. However, the practices that reflect earlier social factors and ideology include a number that have an archaeological signature. With regard to the range of burial types, the tomb layout of grave platform with enclosing wall is a late period status mortuary marker found throughout the island, but these occur at different scales and show different building styles, especially the amount of megalithic materials and columnar basalt included. The latter is considered a key indicator of status. The number of interments per mortuary feature is difficult to ascertain because of preservation issues, as well as processes of secondary burial. Site distributions show that mortuary structures were an integral part of the larger settlement structure.

The overall energy expenditure, including significant relative differences, shows differences from regional level tombs compared to district-level, wehi, ones, and the amount of burial goods also varies as an indicator of funerary expenditure. This is shown most clearly at major constructions like Nan Douwas and Peinkitel at Nan Madol.
compared to less monumental structures examined from Awak to document distributions of the same burial architecture (Ayres et al. 1981; Ayres 2002). It is not just construction volume that is recognizably different as a measure of investment in burial; regional and local-level structures show greater use of locally-available stone and less columnar and megalithic boulder-size rock (Ayres and Scheller 2002; Seikel 2011).

The Pohnpei Pattern in Comparative Regional Perspective

Comparisons with other Eastern Caroline burial complexes and those in West Polynesia provide an important perspective on the derivation and meaning of mortuary complexes on Pohnpei (see Riesenberg 1968 regarding such connections to Pohnpei). The comparisons suggest a broader regional pattern of status burial architecture and ritual, both involving high labour investment in stepped tomb constructions. The greatest similarities are certainly with Kosrae, the only other high island to the east within Micronesia. At least three kinds of architectural compounds in the Lelu center and other sites on Kosrae (Cordy 1983, 1993; Beardsley 2005) have comparable arrangements, and the scale is similar at Nan Madol. In particular, the mortuary remains that include truncated stepped-pyramidal tombs with central vaults (with some of these up to 3 m high) are a key element of burial-related ritual and status marking. Columnar volcanic rock was available on Kosrae and was used extensively in tomb and other ritual construction, but not as systematically as on Pohnpei.

The pattern of stepped tombs is also evident in Polynesia, especially West Polynesia. The use of stone walls to define ritually sacred precincts is noted as well. However, the East Polynesian pattern of architectural elaboration of marae ritual centres and walled enclosures with a constructed stone altar platform has no Micronesian parallel. Elaboration of carved stone for tomb construction in the Tongan case represents a different development; in Samoa and in eastern Micronesia, construction stone was typically not shaped.

The cognate generic name for tombs, such as Tongan langi and Pohnpeian lolong, documents a shared ancestry or suggest more recent interaction. The underlying term, *lahng is an old one that appears in Proto-Oceanic (Bender et al. 2003) and reflects a mortuary meaning. Overall, a significant aspect of high-status mortuary ritual on Pohnpei is
linked to the stepped-pyramid tomb burial complex and this indicates broader West Polynesia-Eastern Carolines connections.

The most visible mortuary remains in Pohnpei, and the most archaeologically-known ones, reflect the evolution over a period of several centuries of a basic stepped platform tomb with a protective wall enclosure. These were created in megalithic scale paralleling the centralization of political authority and the ritual elaboration of status feasting throughout the island. Some of the best evidence for this process comes from Awak and from Nan Madol. Early models for tomb design were later translated into ones with a more diverse set of ritual features, including using columnar stone as a display building material, incorporating ritual materials such as coral, and adding specialized activity areas to the complex. The Pohnpei pattern is best understood as part of a broader development encompassing Eastern Micronesia and West Polynesia.

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ORIENTATIONS AND ASTRONOMY IN PREHISTORIC MONUMENTAL TOMBS OF NAN MADOL (POHNPEI, MICRONESIA)

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Abstract: In this paper the orientations of stone burial monuments in two archaeological sites on the island of Pohnpei (Federated States of Micronesia), Nan Madol and Sapwtakai, are analysed. The results are discussed in the light of oral and archaeological information available about the history and religion of the traditional Pohnpeian culture and archaeoastronomical studies from other areas of the Pacific.

NAN MADOL AND THE PREHISTORY OF POHNPEI

Pohnpei (formerly Ponape) is a mountainous island with a land area of 330 square kilometres, the largest of the Federated States of Micronesia. The annual rainfall is one of the highest in the world allowing for 42 streams or large tributaries and extremely dense vegetation. There is an outer barrier reef averaging about four kilometres from shore that encircles Pohnpei almost completely. The first evidence of human settlement on the island is from the first century BC, but it was not until 800 years ago (about AD 1200) that the extraordinary megalithic architecture – so representative of the prehistory of the island – was developed. Following Ayres (1990: 189), the Nan Madol culture-historical phase extends from AD 1000 to 1500. In that epoch an island-wide centralized political system was developed under the Saudeleur hegemony, and the chiefs took up residence at the megalithic city of Nan Madol. The evidence for this form of government comes from oral traditions as well as interpretation of archaeological remains (Bath and Athens 1990). Nan Madol is located at the southeast of Pohnpei, between the shore of the small Temwen Island and the tidal fringing reef (see Figure 1). According to legends (Hambruch 1936: 61; Bernart 1977: 27; Hadley 1980: 3), two men, Ohlosihpa and Ohlosohpa, the
commanders of a large voyaging party from Katau Peidi (Downwind or Western Katau), were the builders of Nan Madol. The archaeological remains indicate that the decline of Nan Madol began about AD 1650, and that it was not inhabited at the first reported visits of Europeans during the first half of the nineteenth century (Figure 1).

In oral traditions the fall of the city is explained by the arrival of another immigrant: Isohkelekel (Hambruch 1936: 67; Bernart 1977: 73; Hadley 1980: 41), and according to traditional history he was a man of divine origin who commanded a seafaring expedition of 333 warriors from Katau Peidak (Upwind or Eastern Katau). This party defeated the last chief of the Saudeleur dynasty and Isohkelekel established a feudal regime dividing the island in five kingdoms, which coincide approximately with the modern municipalities of the island. Most Micronesian scholars have assumed that Katau Peidak is the island of
Kosrae, situated several hundred kilometres to the east of Pohnpei. However, Goodenough (1986), using linguistic and textual evidence, has proposed that this name is related to a mythological place located in the sky world, which is also intimately linked with the terrestrial world in traditional Pohnpeian lore.

Nan Madol is the most impressive archaeological site in Micronesia and one of the largest of all Oceania. It occupies an area of about 720,000 m² and consists of 92 artificial rectangular islets separated by numerous canals whose depth depends on the tides (see Figure 2).

Many of the islets are surrounded by artificially constructed perimeter walls of massive natural prismatic basalt stones that are commonly laid onto huge boulders of the same material. The fringing reef that includes Nan Madol and the island of Na, just off the southeast of Pohnpei in the Madolehnimw municipality, is called Sounahleng or ‘Reef-in-Heaven’. 
Most of the islets of the site were used for domestic and administrative purposes but others were dedicated to burial or religious matters. Nan Madol was divided in two areas separated by a central waterway. The southwest half was called Madol Pah, the lower town, where the royal dwellings and the ceremonial and administrative enclosures were located. The northeast part, the upper town, was called Madol Powe and contained the priests’ dwellings and the main mortuary enclosures (Figure 2).

Most of the islets, especially those of Madol Pah, are arranged along a well-defined southwest-northeast axis, which is approximately parallel to the southeast shore of Temwen island. The islet of Nan Douwas is the best-preserved and most magnificent stone enclosure of the site (see Figure 3). In traditional history it is recounted that this is the burial place of the Saudeleur and, subsequently used as burial place of the rulers of the chiefdom of Madolehnim: the Nahnmwarki. Nan Douwas is located at the northeast edge of Madol Powe, just at the border of the reef. In general the islets in this part of the city are oriented more easterly, with Nan Douwas, in particular, being closely aligned to the cardinal points – a fact previously noted by Hambruch (1936: 35) and Morgan (1988: 68).

Esteban (2002-03) carried out a preliminary study of the orientations of the islets of Nan Madol based on detailed topographic maps of the area, finding some possible relations with relevant directional points of the sidereal compass of the traditional navigators of the Caroline Islands (see Goodenough 1953: 5-24; Gladwin 1970: 148-160). To be able obtain more detailed observation of the orientation of the islets of Nan Madol and in particular the islet of Nan Douwas a field work survey was carried out in 2006. This aimed to provide a deeper understanding of the relationship of this site and the surrounding landscape/seascape to oral accounts of ritual practices and celestial phenomenon.

Many cultures of the past, including for example those of the European Neolithic (e.g. Ruggles 1999) or pre-Hispanic Mesoamerica (e.g. Aveni 1980), aligned their religious and/or funereal monuments with respect to the cardinal axes or directions of particular astronomical meaning. This may be interpreted as an intention of bringing celestial order to human monuments perhaps with the aim of reinforcing their sacred character (See Krupp 1983: 231-258). In the case of the pre-
European cultures of some archipelagos of the Pacific, there is evidence of customs of systematic orientation of ceremonial enclosures. These
customs seem to be related to the rising or setting of the sun or certain stars (see Liller 2000b; Esteban 2008; Ruggles 2010). Orientation toward celestial bodies may be motivated by several reasons such as their religious or calendric importance or their use for navigation.

ARCHAEOASTRONOMICAL FIELDWORK AND ANALYSIS

Fieldwork on Pohnpei was carried out in April 2006 with the assistance of the Pohnpeian archaeologist Dr. Rufino Mauricio and personnel of the Department of Lands and Natural Resources of the Pohnpei State. This department kindly provided transport and guiding to the archaeological sites. A portable theodolite, a high-precision magnetic compass, a global positioning system (GPS) device, and a digital camera were used to carry out these investigations.

We visited the megalithic archaeological sites of Nan Madol and Sapwtakai (see Figure 1), where we obtained data on the orientations of several mortuary structures. We had hoped to investigate additional stone platforms in the municipality of Kitti – in the south of the island – as well as those of Panpei, Salapwuk, Diadi, Kiti Rock or Alauso (all of them not too far from Sapwtakai, see Morgan 1988: 81-82) but due to lack of time and the fact that the sites are completely overgrown and embedded in dense vegetation, it was difficult to carry out detailed archaeoastronomical investigations at all sites.

At Nan Douwas, we made observations and collected data on the azimuth of each of the four external perimeter walls, the four internal walls and the four sides of the central tomb (see detailed description of the complex in Morgan 1988:68-70). Table 1 shows the value of the perpendicular to the azimuth observed for each wall. When analysing the bearings given in Table 1 it is apparent that the island of Nan Douwas is almost precisely oriented along the cardinal points. In fact, the mean deviation with respect to the cardinal points of the imposing external walls of the compound is only of about 4°, whilst for the internal walls and the sides of the central tomb it is of 3° and 5°, respectively. However, the northern and southern external walls of Nan Douwas show an even higher degree of alignment to the cardinal points (only 1.5° offset). In particular, the southern wall is perfectly oriented East-West. The average azimuth of the north and south external walls of Nan Douwas is 1.3° ± 2.0°.
Table 1: Orientations (in sexagesimal degrees) of the main architectural features of the compounds measured at Nan Madol. The error of the azimuths is ±1°.

<table>
<thead>
<tr>
<th>Compound</th>
<th>Feature</th>
<th>Wall</th>
<th>Azimuth (°)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nan Douwas</td>
<td>External walls</td>
<td>East</td>
<td>72.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>North</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>South</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td></td>
<td>West</td>
<td>276</td>
</tr>
<tr>
<td></td>
<td>Inner walls</td>
<td>East</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td></td>
<td>North</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>South</td>
<td>183.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>West</td>
<td>272</td>
</tr>
<tr>
<td></td>
<td>Sides of the central tomb</td>
<td>East</td>
<td>93.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>North</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>South</td>
<td>184.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>West</td>
<td>277</td>
</tr>
<tr>
<td>Karian</td>
<td>External walls</td>
<td>West</td>
<td>231.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>North</td>
<td>325</td>
</tr>
</tbody>
</table>

Karian is another mortuary structure that is remarkably well built and is located in the easternmost point of Nan Madol, just on the border of the reef and about 200 metres to the southeast of Nan Douwas (see Figure 2). Its dimensions are 936 m² (see a detailed description in Morgan 1988: 70-74). Due to the dense vegetation, observations could only be carried out in relation to the western and northern walls of the structure. The value of the perpendicular to the azimuth measured for each wall was observed and with these data it was shown that the orientation of Karian coincides with that of the main external wall that surrounds the city at the south and defines the general orientation of most of the structures of Nan Madol, especially those of Madol Pah. (Table 1)

The fieldwork at Pohnpei also included a visit to the archaeological site of Sapwtkai, which is located on the top of a hill about 200 meters above sea level in the municipality of Kitti, in the southwest quadrant of the island. Sapwtkai was occupied continuously from AD 1250 to 1850 (Bath 1984) and was an important regional political centre contemporary to Nan Madol. The site consists of a number of stone structures and platforms surrounded by a defensive wall along the perimeter (see plans in Bath 1984; figure 26, and Morgan 1988: 83),
except along the southeast side, where the hill falls off steeply toward a
gorge. At the centre of the southern half of the site is a large mortuary
platform containing two crypts. The orientation of the main tomb of
Sapwtakai differ about $9^\circ$ from that of the orientation of Nan Douwas. If
our magnetic declination were correct, this would imply that the
orientation of the platform with respect to the north indicated in the
maps of Bath (1984, Figure 26) and Morgan (1988: 83) is not accurate.
In fact, based on those maps, Esteban (2002-2003) suggested that the
orientations of the tombs of Sapwtakai and Nan Douwas were almost
coincident. It is clear that further detailed survey and mapping at the
site have to be carried out after an extensive clearing of vegetation to
obtain detailed data to make well-founded conclusions.

In addition to obtaining data on the orientations of the walls of the
mortuary structures of Nan Madol we also analysed features that were
visible from them. Kirch (2000: 186) indicates that all the tombs at Nan
Madol, except what has been interpreted as the burial site of the
legendary hero Isonkellek, are located at the seaward border of the city,
along the southeast main wall mostly.

This suggests that a clear vision and relationship to the ocean or the
southeast quadrant of the horizon could have been relevant for
mortuary ritual/practices. Consequently an effort was made to obtain
observations on the precise position of topographic elements that are
visible from each structure. There are several small reef islands located
to the east of Nan Madol (see Figure 2), from north to south they are
Nahpali, Mwahu, Na, Pweliko and Nahkapw. We observed the azimuth of
the tips of each island from each structure and calculated the celestial
deciliation of the celestial object that rises at each of those points. All
these data are included in Table 2. The declinations have been
calculated assuming that the height of the horizon is $0^\circ$, although we
have included the effect of atmospheric refraction (see Ruggles 1999:
23). The uncertainty of the values given in Table 2 is estimated to be on
the order of $1^\circ$.

At Nan Douwas, we observed the horizon from the centre of the top
of the western wall (see Figure 4). Two interesting results were
obtained. The first one is that the zone of the eastern horizon toward the
structure aligns with the channel between the islands of Pweliko and
Nahkapw, the angular width of that channel is only about $4^\circ$. The mean
orientation of the north and south external walls of Nan Douwas (1.3° ± 2.0°) aligns almost perfectly with the northernmost tip of Nahkapw.

Table 2: Azimuth and declination of the edges of the profiles of the nearby reef islands seen from the mortuary megalithic compounds of Nan Douwas and Karian (Nan Madol).

<table>
<thead>
<tr>
<th>Compound (backsight)</th>
<th>Horizon feature (foresight)</th>
<th>Azimuth (°)</th>
<th>Declination (°)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nan Douwas</td>
<td>Nahpali, north edge</td>
<td>47.5</td>
<td>+42.0</td>
</tr>
<tr>
<td></td>
<td>Mwahu, south edge</td>
<td>57.0</td>
<td>+32.7</td>
</tr>
<tr>
<td></td>
<td>Na, north edge</td>
<td>65.5</td>
<td>+24.2</td>
</tr>
<tr>
<td></td>
<td>Pweliko, south edge</td>
<td>84.5</td>
<td>+5.4</td>
</tr>
<tr>
<td></td>
<td>Nahkapw, north edge</td>
<td>88.5</td>
<td>+1.4</td>
</tr>
<tr>
<td></td>
<td>Nahkapw, south edge</td>
<td>101.5</td>
<td>-11.5</td>
</tr>
<tr>
<td>Karian</td>
<td>Nahpali, north edge</td>
<td>43.0</td>
<td>+46.5</td>
</tr>
<tr>
<td></td>
<td>Mwahu, south edge</td>
<td>52.5</td>
<td>+37.1</td>
</tr>
<tr>
<td></td>
<td>Nahkapw, south edge</td>
<td>90</td>
<td>-0.1</td>
</tr>
</tbody>
</table>

This point is not far from the position of the sunrise at the equinoxes, where the sun has a declination of 0°. The angular offset between the north tip of Nahkapw and the rising point of the sun at the equinoxes is somewhat less than three solar diameters.

Another important result is that the north tip of the island of Na almost aligns with the sunrise at the June solstice, another singular point of the annual cycle of the Sun, which corresponds to a declination of 23.5° for the reference date of AD 1200 (Figure 4).

The astronomical equinox is an abstract and sophisticated concept that only has sense in the framework of Mathematical Astronomy (Ruggles 1997, 1999: 150-151). The equinoxes are defined as the two moments of the year when the sun passes the celestial equator at a declination of 0°. Unlike the solstices – which are the extreme positions in the annual path of the sun on the celestial sphere – the equinoxes are not marked in any special way at sunrise or sunset. It is difficult to argue

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1 The apparent mean solar diameter is about 0.5°.
that such a concept could be of any practical use to a culture that appears to have had a limited knowledge in mathematics and geometry. We suggest that the apparent equinocial markers may be related to the so-called temporal mid-point between the solstices. This is a far more practical concept than equinox because it is not based on an abstract and geometrical concept. The principle of defining this temporal mid-point is based on counting the number of days between the precise moments of both solstices – June and December, which can be determined from direct observation – and then dividing by two (e.g. 183).

Figure 4: View of the oceanic horizon seen from the top of the western wall of Nan Douwas. From north to south we can see the nearby reef islets of Nahpali, Mwahu, Na, Pweliko and Nahkapw. Mwahu and Nahkapw are practically hidden behind the vegetation that grows over the external contention wall of Nan Douwas complex built on the reef. The continuous-line arrows indicate the points where the sunrise at the June solstice and equinoxes take place. The dashed-line arrow indicates the rising point of the Pleiades at AD 1200. The small circle over the horizon between Pweliko and Nahkapw represents the size of the solar disk. Delta Orionis, the northernmost star of the Orion’s Belt, had its rising point somewhat less than three solar diameters to the south – right – of the rising point of the sun at the equinoxes at AD 1200. Pleiades and Orion’s Belt were two important asterisms for the ancient Pohnpeians. Pweliko is considered a sacred place with a singular funerary meaning in the Pohnpeian myths (image: César Esteban).
Another way to define this mid-point is to divide the total duration of the solar year from one of the solstices – June or December – in four equal parts. These four parts determined by solstices and temporal mid-points would still correspond to the four seasons at intermediate latitudes. This is the basis of Alexander Thom’s prehistoric solar calendar (Thom 1967, chapter 9). The particular relevance of the division of four for the Pohnpeians is discussed further below.

Figure 5: Enlargement of part of the horizon shown in Figure 4 where the north tip of Nahkapw Island is now visible. The continuous-line arrow indicates the point where the sunrise at the equinoxes takes place. The dashed-line arrows indicate the south and north extreme of the possible positions of the sunrise at the temporal mid-point between the solstices (TMPS). Those extremes depend on the equinox considered and the solstice taken as starting point (see text). The sun symbol indicates the size of the solar disk. (image: César Esteban).

One would think that the temporal mid-point between the solstices should coincide with the equinox, but this is not the case because the distance between the sun and the earth – and therefore the earth’s orbital velocity – is not constant along the year. The difference of dates between the temporal mid-points and the equinoxes is rather small. The mid-points occur between one and three days before (or after) the
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September equinox (March equinox) depending on the way the year is divided. Esteban has previously discussed this problem (2003), and suggested that if an astronomical marker is intended to mark the temporal mid-points between the solstices, it should point to declinations slightly above 0°, (between +0.2° and +1.3°). As we can see, with this new definition, the north tip of Nahkapw aligns rather well with the sunrise at the temporal mid-points (see Figure 5). Thus, when the general concept of equinox is referred to in the remaining part of the paper we include the possibility of the astronomical relationship to the temporal mid-point between the solstices (Figure 5).

From Karian, the declination corresponding to the south tip of the small nearby island of Nahkapw – at about 700 metres distant – aligns almost exactly with the point where the sunrise at or near the equinoxes takes place. It was observed that, from the two most outstanding mortuary structures of Nan Madol, the sunrise at the equinoxes is indicated approximately by the two sides of the same island, the north side in the case of Nan Douwas and the south one in the case of Karian.

DISCUSSION OF THE RESULTS IN A CULTURAL CONTEXT

References about cult practices and solar observations can be found around the world and also in the ethnohistory of Pacific communities in Polynesia (e.g. Esteban 2002-2003, 2008). There is a certain amount of work devoted to the analysis of orientations of religious stone platforms in several Polynesian archipelagos. In Easter Island, Liller (1989) found that, while most ritual platforms (ahu) with or without moai were oriented with their long axis parallel to the adjacent coast, those that did not follow this rule were mostly oriented toward the sunrise at the equinoxes. Liller (2000a) also found that a set of ritual platforms (heiau) on Necker Island (Hawaii) have a selective orientation toward the sunrise at the equinoxes or December solstice. Also in Hawaii, Kirch (2004a) found that a large sample of heiau at Kahikinui area (Maui Island) show three types of orientations: east (equinox), north and east-northeast (June solstice or rising of the Pleiades). These three directions show a clear relation with the attributes of three of the main deities of the ancient Hawaiian pantheon. In French Polynesia, Liller (2000b) found that although the orientation of most ceremonial structures (marae) is defined by the topography of the land, there are some individual cases with what appears to be some astronomical relation.
For example, the impressive *marae* Taputapuatea (Rai’atea Island), arguably the most important of all in Central-East Polynesia, is oriented approximately east-west, like some other of the most important *marae* of the Society Islands. It is also noted that the largest prehistoric stone structure throughout Polynesia, the Pulemelei platform on the island of Savai’i (Independent Samoa), had walkways on to the platform oriented east-west (Esteban 2002-2003; Martinsson-Wallin et al 2007).

To date, the only example of solar observations collected in ethnographic records and confirmed by archaeology in Polynesia is that reported by Kirch (2004b) in Atituiti (Mangareva Island, French Polynesia). At this site, a huge stone structure also oriented to the cardinal points was used as an observation platform. Such investigations indicate that alignment to cardinal points, celestial phenomenon, the sea and various landscape features have been important in relation to ceremonial and mortuary structures in Polynesia, but we lack archaeoastronomical information for Micronesia.

Nan Madol literally means “in the space between things” (Petersen 1995: 111). Oral histories about the creation of Nan Madol indicate that the place of construction was carefully selected. It is also told that the two original builders, *Ohlosihpa* and *Ohlosohpa* considered several locations before they decided to build on the reef of southeast Temwen Island, exactly at the easternmost point of Pohnpei. They consecrated Nan Madol to *Pwongen Sahpw*, a god of agriculture (Dobbin 2011: 88).

To consider basaltic structures as sacred is a rather common concept in Micronesia, and especially on Pohnpei were the natural basalt prisms that make up many of the structures are considered abodes of the spirits (Goodenough 1986). Hadley (1980: 5) accounts that the founders of Nan Madol erected a rock – called *Peirahni* – oriented to the cardinal points to organize the alignment of the city. As we have seen above, the walls of the royal mortuary structure of Nan Douwas is aligned to the cardinal points and it is located at the eastern edge of the city of Nan Madol, which in turn is located at the eastern tip of Pohnpei. Although the orientation of the city seems to follow rather closely the orientation of the coastline of Temwen Island – as with monuments in other areas of the Pacific – we consider that the location of Nan Douwas and its orientation to celestial phenomenon are relevant elements that have to be considered to understand the meaning of the monument.
Orientation along the cardinal points does not seem to be a unique feature of Nan Douwas in Pohnpei. Ayres and Mauricio (1997: 48-56) report this particular orientation in some ritual mounds and graves in the Salapwk area, which are considered as the most ancient sacred place of Pohnpei. Traditional Pohnpeian cosmology considers that the vault of the sky is divided into four zones corresponding to the cardinal points, and that these points are held by four beings that are on or below the horizon (Hambruch and Eilers 1936: 156; Dobbin 2011: 233). This Pohnpeian myth may be related to a rather central theme of the Marshallese religion about the gods of the cardinal directions, the four post-men that held up the heavens (Krämer and Nevermann 1938). Knappe (1888) writes that these Marshallese gods of the cardinal directions were invoked for weather observations, but later descriptions by Erdland (1914: 182) describe their relation with crop rituals (see discussion by Dobbin 2011: 134). In fact, as Goodenough (1983: 73) remarks, some oral historians have claimed the Marshalls as the homeland of the Pohnpeian clans, and indeed some of the Pohnpeian clan names are the same as those in the Marshalls.

According to oral traditions the structure of the cosmos for the ancient Pohnpeians – similarly to other places in East Micronesia – had four basic parts: (a) a layered sky world; (b) the land – Pohnpei; (c) the sea; and (d) the world under the sea, the residence of the spirits after death that joins the sky at the horizon (Dobbin 2011: 75). Pohnpeian high gods dwell in the sky, in the sea or in the world under the sea (Dobbin 2011: 78). Like most other islands of Micronesia, the deceased faced a trial before entering paradise (Mauricio 1993: 346-351). This trial occurs when the soul crosses Kankapir, the swinging bridge. Hambruch and Eilers (1936: 116-117) write that after crossing the bridge:

The soul that makes progress is cast over to the place, Puileko [Pweliko], from which he cannot return until he is completely decayed. In such a fashion the deceased arrive at the other world, Paset [Pahnsed].

Dobbin (2011: 79) comments that Pweliko: “could either be a transitory place or a place where evil spirits remain permanently confined”.

As the abode of the condemned, Pweliko was imagined as “dark, cold, and dirty” (Hambruch and Eilers 1936: 115). Whether the soul is permanently condemned or is allowed to pass on to Pahnsed – the
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underwater paradise where feasts are celebrated as they are in this world – depends on the outcome of the trial at the swinging bridge. Dobbin (2011: 75) physically locates Pweliko in the Wene chiefdom. Panholzer and Mauricio (2003) are more precise and indicate that it is an islet just east of Temwen Island, that is, at the east of Nan Madol. Moreover, Fischer, Riesenberg and Whiting (1977) mention that Pweliko is an islet immediately south of Na, and Mauricio (personal communication) indicates that this is considered a sacred area (see Figure 2). In fact, the 1:25,000 map of the south half of Pohnpei Island published in 1993 by the United States Department of Interior Geological Survey, names the south part of Na as Pweliko. As commented above, Nan Douwas is oriented to the channel between Pweliko and Nahkapw and, therefore, this royal mortuary structure is not only facing to the general direction of the sunrise near the equinoxes but also to Pweliko, the mythical transit place for the souls of the deceased. There are very few explicit references about the importance of the sun in the Pohnpeian religion. Some oral traditions say that the royal family and the chiefs of the island were somehow connected or have some affinity with the sun and the moon (Hambruch 1932: 19). In fact the name for sun was the same as king (Sau) in ancient Pohnpeian (Christian 1899: 80). Also the name of the reef area around Nan Madol, Sounahleng – literally sun-in-heaven – indicates some relation with the sun (Petersen 1995: 115). Silten, a traditional Pohnpeian historian, remarks that Nan Madol site was chosen – among other things – because it faced the sunrise. In fact, in his description of the site of Deleur – that apparently was the previous name of Nan Madol area – Silten tells that:

Deleur is a country on the east side of Pohnpei, good and glorious to live in. It has channels to the sea; there are many little islands on the exterior. The sun shines on it first and also the moon (Petersen 1995: 26).

These references reinforce the interpretation of our observations of the relations between the monuments, the sun and topographic features report here, as well as the prevalence of the easterly orientations of the monuments that we are considering in our discussion. The orientation of Nan Douwas towards the sunrise at or near equinoxes may also relate to the calendar. The traditional Pohnpeian calendar had two seasons, a rainy and a dry one, called Rahk and Isol,
respectively. Eastlick (1995), states that the division between both seasons was in March and September, which are the months when the equinoxes take place. However, the anthropologist Riesenberg (1968: 78-85) indicates that his informants do not agree on the dates for the beginning of the seasons and that they could change in different parts of the island. If Eastlick is correct and that same calendar scheme was also used in Saudeleur's times, the importance of the sunrise at equinoxes could be related to rituals dedicated to the change of seasons and the fertility of the land. In fact, this is a rather likely possibility taking into account that, as it was said before, the founders of Nan Madol consecrated this carefully selected place to Pwongen Sahpw, a god of agriculture (Dobbin 2011: 88).

Apart from the solar interpretation of the orientation of Nan Douwas, that we have made detailed observations of (see above) there is another hypothesis of this site’s relationship to stars. In oral traditions it is indicated that the ancient Pohnpeians were skilled observers of the stars (Christian 1899: 72; Hambruch 1932: 42-43) and especially the priests, who knew the secrets of the passage of time and could anticipate the right day for celebrations (Hambruch and Eilers, 1936:230). Ward Goodenough studied the traditional astronomy of Micronesia finding that the calendars were based on sidereal months that began with the heliacal rising of particular stars2 (Goodenough 1953: 10). Eastlick (1995) indicates that the traditional Pohnpeian calendar had 10 months. Each of these months was 36 or 37 days long and shared its name with a bright star or asterism prominent during that month. Those periods of time were closely tied to the crop cycle, especially to the tribute feasts for the yam and breadfruit. These references indicate that the priests – or the persons in charge of establishing the calendar – should carry out continuous and careful observations of the position of celestial bodies. In this sense, it seems reasonable to suppose that the religious and/or calendric importance of certain stars might be used to define directions of ritual importance to align religious buildings as has been claimed, for example, in the case of some marae of the Society Islands (Cruchet 2013).

One of the most important groups of stars – asterisms – for ancient Pacific cultures was Orion’s Belt. This conspicuous group is composed of

2 The heliacal rising of a celestial body is its first appearance in the east just before dawn. This occurs once during the year.
three stars: Delta, Epsilon and Zeta Orionis and had declinations of –1.2°, –2.1° and –8.7° at the reference year AD 1200, the most probable date of initial construction of Nan Madol. The projection of this area of the sky on the horizon is somewhat to the south of the channel defined between Pweliko and Nahkapw islands, but occupies part of Nahkapw. The azimuth of the northern tip of this island is rather close – less than three solar diameters – to the rising point of Delta Orionis, the northernmost star of the Orion’s Belt. In the case of the mortuary structure of Karian, the relation is slightly more accurate, the southern tip of Nahkapw is only about two solar diameters to the north of the rising point of Delta Orionis. In the last centuries, the rising position of Delta Orionis has been – and still is – very near to that of the sun at the equinoxes. Orion’s Belt was an important asterism in the traditional navigation system of the Micronesians. The rising and setting points of this star group are two of the 32 directions of the sidereal compass of the navigators. Attending to Lewis (1994: 103) the rising point of Orion’s Belt indicates the position of the east. In the reference year of AD 1200, the heliacal rising of Orion’s Belt happened only 7 days after the June solstice (between June 27th and 28th).

The most important and worshiped asterism for the Pohnpeians was the Pleiades that were called Mwariker (Bernart 1977: 96). It can be noted that the rising point of the Pleiades on the horizon is not far from the position of the sunrise at the June solstice. The declination of the group is between +21.1° and +21.7°, about 3° to the south – six solar diameters – of the sunrise at June solstice, which occurs at the northern tip of Na Island seen from Nan Douwas (see figures 2 and 4). In addition, its heliacal rising at AD 1200 was between May 30th and June 1st, just about 20 or 21 days before the June solstice. The heliacal risings of the Pleiades and Orion’s Belt differ only by about 28 or 29 days, exactly one lunar phase period. As in the case of Orion’s Belt, the rising and setting points of the Pleiades are one of the sidereal compass directions of the Micronesian navigators. According to Goodenough (1953: 10) the Pleiades also gives its name to one of the months of the year and its heliacal rising coincides with the beginning of the rainy season in the nearby islands of Chuuk, as well as with the beginning of the harvest of the breadfruit tree.

The Pleiades were very important also for old Polynesian cultures. Its name in Proto-Polynesian was Mataliki, and its heliacal rising and
setting marked the beginning of the seasons in many Polynesian calendars (Kirch and Green 2001: 260-271). The two asterisms: Pleiades and Orion’s Belt are also precisely the main stellar groups in Easter Island. They are markers of agricultural activities and important ceremonies of the traditional calendar. Attending to this Edwards and Belmonte (2004) have proposed that orientations of ceremonial platforms in Easter Island that have been claimed to be connected with the equinoxes and June solstice may be instead related to the rising and setting points of those asterisms.

As commented above, the orientation of the walls of Karian aligns with the general orientation of the external southern wall of Nan Madol and with the main axis of the whole city. To the east, the azimuth of this orientation is $53^\circ \pm 2^\circ$, the corresponding declination is $+36^\circ \pm 2^\circ$. As is indicated in Table 2, the projection of this line on the eastern horizon coincides to the south tip of Mwahu Island. The only bright star that approximately fits that point of the horizon for AD 1200 is Vega (Alpha Lyrae, $\delta = +38.3^\circ$). This very bright star is another point of the sidereal compass, the immediate one to the north of the Pleiades. However, the perpendicular to the long axis of Karian and Nan Madol toward the south – with an azimuth of $143^\circ \pm 2^\circ$ and corresponding to $\delta = +53^\circ \pm 2^\circ$ – is roughly pointing to another very important asterism: the Southern Cross. For AD 1200, Alpha, Beta and Gamma Crucis were at $\delta = -58.4^\circ, -55.3^\circ$ and $-52.6^\circ$, respectively (see Figure 3). The rising, setting and culmination points of this constellation were elements of the sidereal compass that indicated the south direction.

The two astronomical interpretations for the orientation of Nan Douwas: solar and stellar, seem to be plausible and not necessarily exclusive. The solar relations may have a ritual meaning and the stellar ones – less precise – may be also related to calendric purposes. This possibility seems to be supported by Goodenough's statement that in Micronesia; “native astronomers are aware of the year in a solar as well as a sidereal sense” (Goodenough 1953: 28).

As we have seen the particular orientation of Nan Douwas has a third level of interpretation: its additional relation with the mythical transit place of Pweliko. This relation integrates its mortuary dimension with the celestial meaning of Nan Madol, reinforcing the singularity and symbolism of this magnificent monument.
CONCLUSIONS
This paper presents an archaeoastronomical analysis of the orientations of burial stone enclosures in two archaeological sites of Pohnpei Island: Nan Madol and Sapwtakai. The results indicate that a central structure of Nan Madol, Nan Douwas, is fairly well oriented with respect to the cardinal points. We argue that this arrangement has a singular meaning in the framework of the traditional Pohnpeian cosmology. Towards the eastern horizon, Nan Douwas is facing a narrow channel between two nearby islets, Pweliko and Nahkapw. The sunrise at the equinoxes or the temporal mid-point between the solstices occurs at the north tip of Nahkapw. In oral histories it is recounted that immediately south of Na there is a sacred place called Pweliko, interpreted as a mythical transit place for the souls of the deceased in the ancient Pohnpeian mythology. This place is precisely the zone of the horizon where Nan Douwas is facing toward the east. According to Eastlick (1995), the division between the rainy and the dry seasons of the traditional calendar was in March and September, which coincides roughly with the equinoxes. It is suggested here that the placement and orientation of Nan Douwas were carefully planned and may have a rich ritual and mortuary – and even perhaps calendric – symbolism. Another possible astronomical marker over the eastern horizon of Nan Douwas is the north tip on Na islet. This topographic feature coincides with the point where the sun rises at the June solstice.

Another way of interpreting the orientations and horizon markers found in Nan Douwas is suggested by attending to the rising positions of some relevant group of stars or asterisms at the date of the construction of Nan Madol around AD 1200. The general orientation of the monument aligns with the rising of the stars of Orion’s Belt, a very important asterism in the entire Pacific. This is also an element of the sidereal compass of the traditional Micronesian navigators and an indicator of the east direction. On the other hand the north tip of Na islet may be related with the rising point of the Pleiades, according to oral traditions the most important asterism in ancient Pohnpei, although the precision of the orientation is not precise. As in other places of the Pacific, the heliacal rising of this group of stars probably has a calendric purpose. We consider that the solar and stellar interpretations for the orientation of Nan Douwas are both plausible but not necessarily excluding each other or other interpretations. The ancient builders may
have considered several kinds of celestial or landscape relations of the site. Additional studies of the built environment in relation to landscape/seascape features, celestial phenomenon and critical evaluation of oral tradition will provide further insights into the meaning of Nan Madol and related structures.

Karian, the second monumental tomb studied in Nan Madol, also shows a possible astronomical relation. Although its orientation follows the pattern of the rest of the city – which could be oriented to the rising point of the Southern Cross – the analysis of its eastern horizon indicates that the south tip of Nahkapw islet coincides with the point where the sunrise at the equinoxes – or the rising of the Orion’s Belt – takes place.

For the large mortuary platform at Sapwtakai we obtain rather uncertain data concerning its orientation. The only possible – but inconclusive – astronomical relationship we have found for this monument is that its minor axis may be pointing to the setting point of the Pleiades.

Finally, we consider that all the alignments we have proposed have a ritual meaning and not necessarily a “practical” one – i.e. we rule out that the monuments would have functioned as “observatories”. Alignments were instead intended to enhance the sacredness of the religious/mortuary monuments by arranging them tuned to essential elements of what is interpreted, due to traditional history, to be the Pohnpeian cosmovision.

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TEMPLE ARCHITECTURE IN THE SACRED SITE OF MENKA, KOSRAE, FEDERATED STATES OF MICRONESIA

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Abstract: At the ancient sacred site of Menka, Kosrae, the architectural ensemble of the temples dedicated to Sinlaka, the goddess of breadfruit and principle deity of the island, has shifted and transformed over time. The older temple represents a small, intimate setting that fully reflected the key elements of the oral histories, including clan symbols, an altar oriented to Mt. Finkol, the highest peak on the island, and a colonnaded promenade. The younger temple is a larger, more expansive complex, reflects a more theatrical setting, sheds the key features of the older temple complex, and represents a shift in engagement with a spatial arrangement that accommodates greater numbers of spectators and participants.

INTRODUCTION

The architectural remnants of ancient Micronesia are most frequently described by the monumental sites of Leluh on Kosrae and Nan Madol on Pohnpei, the sculpted hills of Palau, the stone money of Yap, and the latte sets in the Marianas. Each of these sites is the very embodiment of the term monumental: they are larger than life productions of grandeur in style and expanse that is both imposing and altogether awe-inspiring to those viewing these sites. The complexity of their architectural expression transforms them into something so enigmatic that they continue to draw viewers of all stripes with magnetic force; even the early days of scientific expeditions of exploration saw these sites attract the almost exclusive attention of archaeologists in the region (Ritter and Ritter 1982; Rainbird 2004; Sarfert 1919). Unfortunately, this also meant that the many other ancient architectural features on these islands would be overlooked, or at best overshadowed and even dismissed as provincial and rudimentary (Cordy 1982b, 1993). Yet, these other, smaller, seemingly unsophisticated and simpler sites represent the foundational cultural fabric and support network fundamental to the design and construction of every one of the monumental sites scattered across this part of the western Pacific.
Often obscured by a farrago of vegetation in the jungle interiors of the region’s high islands, the attention paid to the smaller, architecturally peripheral sites is a relatively recent phenomenon (Athens 1995; Bath et al. 1983; Cordy 1982b; Lilley 2006). General observations note that these sites consist of comparable structures, architectural plans, material sources, and construction styles exhibited in the remains of the monumental sites, though they are smaller in scale and display a wider variety of styles. Even more fundamental is the common use of stone in all these sites, monumental and not-so-monumental, often with the stone raised in multiple courses and trimmed or fashioned to accommodate a wide array of local styles and variations, from raised platforms to double-walled structures with rubble cores to more complex arrangements of retaining walls, simple platforms and truncated stepped pyramidal structures with internal compartments. The stone is often mined locally, transported to the sites either by land or over water, and fitted either roughly or with great precision.

Figure 1: Map of the western Pacific with inset showing Kosrae. The site of Menka (alternate spelling Menke) is located just south of the centre of the island.
The Menka site on the island of Kosrae rests at the heart of Kosrae’s culture (Figure 1); it was the centre of the old religion and is acknowledged in oral histories as the primary force in moulding Kosrae’s traditional cultural system and the cultural systems of eastern Micronesia (Sarfert 1919). If any place on Kosrae should be expected to exhibit a high degree of monumentality to aid in the visual perception of transcending the physical into the realm of the spiritual, one would think it would be this site rather than Kosrae’s ancient political centre at Leluh, known as the seat of secular rule. Yet the two temple structures at the core of Menka seem to be the antithesis of monumental; they respectively display the architectural ensembles associated with both the early and later more developed residential sites on the island. Were it not for their association with other unique features—statue fields, colonnaded paths, and deliberate orientation to the sacred peak of Mt. Finkol—one would dismiss the Menka temples as just another residential site on the island, though one that had a sufficiently long occupation to reflect the full array of architectural patterning visible in the other archaeological sites around the island.

Nowhere in the archaeological investigations on the island, or in eastern Micronesia, has the subject of architecture specifically related to temples or temple structures been discussed. Menka is the first such site, whether on the island or for that matter in the region, that is specifically associated with a temple and functions attached to a temple. In the remainder of the Pacific, many of the discussions on temple architecture focus on Polynesia, especially the heiau of Hawaii, the ahu of Easter Island, marae of the Society Islands, and me‘ae in Marquesan islands (e.g., Bickler 2006; Kolb 1992; Martinsson-Wallin 1994; Millerstrom 2006; Rainbird 2004; Wallin 1993). In each instance, the generalized temple architecture consists of raised stone platforms upon which stood backrests or statues of deified ancestors, and often associated with a larger open area or plaza demarcated with a low stone or earthen wall. Whereas, in the south-western Pacific, standing stones, sometimes carved and sometimes not, or sites with more a complex arrangement of wall foundations outlining a discrete area may have served to mark a place of ritual, religious or ceremonial rite (e.g., Bickler 2006; Byrne 2005). In western Micronesia, discussions continue to focus on the monumental architecture associated with meeting platforms, dance platforms, terraced hillsides, and sequences of columnar stones.
with capstones (Morgan 1988), but without reference to temple sites or temple architecture.

In the following pages, the two temples at Menka will be described, along with their commonalities and differences, and the transformations visible in their architectural remains that reflect a shift from the earlier to later styles on the island.

KOSRAE
Kosrae is one of three high islands in Eastern Micronesia. It is small, roughly 110 sq km in area at the easternmost end of the Caroline archipelago, and removed from the other two high islands by several hundred kilometres of open water. To the south, east and north lay the coral islands of Kiribati, Tuvalu and the Marshalls. Historically, Kosrae was described as an imposing landscape with a steep mountainous interior shrouded by impenetrable vegetation, abundant streams, and a hot and humid climate (Ritter and Ritter 1982).

The island was settled some two millennia ago (Bath et al. 1983; Athens 1995) by a population bearing a culture similar to that found on the low islands of the region, the main features of which were a general lack of pottery, a dependence on woven materials, the use of earth ovens, and subsistence practices dominated by breadfruit and marine fauna. The settlement pattern consisted of semi-autonomous polities occupying a strip of land from the reef to the island interior (Sarfert 1919, 1920; Cordy 1993; Athens 1995), and a culture dominated by a dual political structure composed of a secular and religious authority (Sarfert 1919).

History has taken a heavy toll on Kosrae and its traditional culture. In the last two centuries, Kosrae has essentially remade itself to suit the demands of traders, colonizers and missionaries. Every domain of traditional culture has been reduced to isolated, discontinuous fragments where no one person seems to hold all the clues to understanding any one domain. Short threads of memory, some retained in oral history, still exist, alongside a landscape covered in architectural and material remnants that make up the archaeological record of the island.

Within the archaeological record there are indications of an early occupation, primarily on the southern and western coasts where oral histories place the land of the ancestors (Bath et al. 1983; Athens 1995).
Sometime around AD 500, pottery appears in that record, but only briefly and locally confined to the lagoon islet of Leluh (Athens 1990); this is significant because at European contact, Kosrae had no indigenous pottery or pottery-making industry. Stone statues, composite figures of clay and stone, and portable clay figurines recently identified in the archaeological record were consistently present throughout much of the island’s long occupational sequence, but by contact, Kosrae had gained the distinctive reputation as one of the few places in the Pacific with neither idols nor any other tangible feature of an artistic heritage (Ritter and Ritter 1982; Beardsley 2007, 2008, 2012). The statues, figurines and other non-utilitarian and decorative artefacts were either forgotten or went unnoticed as the population dwindled and settlements in the island interior were abandoned.

Other information about Kosrae’s past includes the appearance of breadfruit and three aroid cultigens (Colocasia, Cyrtosperma and Alocasia) some 2,000 years ago (Athens 1995), all of which needed the intercession of a human hand in order to thrive. Even a shift in the regular exploitation of shellfish appears in the archaeological record and suggests population pressures, with an initial emphasis on bivalves before A.D. 500 and gastropods after that date (Athens 1995).

MENKA, THE SACRED SITE

Menka is located in the centre (or nearly so) of Kosrae, at the base of Mt. Finkol, the tallest mountain on the island (600 m amsl). It was the religious and spiritual centre of the ancient Kosraeans, and remained so even upon arrival of western explorers, missionaries, and establishment of the first foreign colonial governments in the 18th and 19th centuries. But unlike other villages or communities on the island, it was not part of a larger polity stretching from the shore to an inland point. In this regard, it was unique and quite distinct as it was positioned at the intersection of all polities, essentially belonging to all and to none at the same time; there is no other village or archaeological site on the island with this particular characteristic.

Menka was dedicated to Sinlaku, the Breadfruit Goddess and Prophet Spirit, who is said to have been the head of the traditional culture’s pantheon of natural and supreme deities (Sarfert 1919). Information, histories and oral histories about Sinlaku are scarce and relegated to fragments of oral histories, ethnographic accounts drawn from the
German expeditions of exploration (e.g., Sarfert 1919, 1920), and remnants of diaries and journals of adventurers and missionaries (e.g., Buck 2005; Segal 1989). Today, practices and obligations of the traditional priestly societies dedicated to Sinlaku are relegated to the realm of practical obsolescence. How the priestly mediator called upon the goddess, conducted ceremonial rites in her name, or even received her messages to interpret and deliver to the people of Kosrae remain unknown; only brief fragments of oral histories touch on these practices, but even then, only at the most basic and superficial level. A search through the oral history archives at Kosrae’s Historic Preservation Office yielded virtually no information on religious practices related to Sinlaku or her priestly mediators.

By 1852, Menka had lost its position as the centre of spiritual power and authority when the first Christian missionary, Reverend Snow, and his followers made their way to the island (Buck 2005). Over the next decades, conversion of the population to Congregationalism and establishment of churches across the island ensured the near disappearance of traditional knowledge as the new religion spread. Salvation and sanctuary, the islanders were told, would be found in the message of the Church, not in the past and most certainly not in the old traditions and belief systems. Stories about Menka and about the goddess Sinlaku faded rapidly.

ORAL HISTORY ABOUT MENKA, THE SITE AND THE GODDESS SINLAKU
When the first waves of settlers arrived more than two centuries ago, they brought with them the ‘purposeful introductions’ or material items necessary for their survival, as well as those intangible elements of ancestral traditions: narratives and other creative acts passed down through the generations, intended to teach as well as entertain, to instil a sense of historical continuity, and to perpetuate a common social and political identity and heritage in the listeners and observers. These vestiges of the ancestors assured their psychological well-being, maintained strong ties to the past, and included a pantheon of local gods, ancestral spirits and deities that reigned supreme over some realm or other of nature. From whence they came has yet to be established with any degree of certainty; however, the material culture
that dominates the core of the archaeological record suggests a low island origination while oral histories suggest ties to Yap.

Within the oral histories, the local gods were credited with providing guidance for nearly every aspect of daily life and annual ritual, from house construction and canoe building to the harvesting of breadfruit to the routines of weaving and gardening. Many of the deities also had ties to Yap, including Sinlaku, the most powerful of all. As the prophet spirit, she could give people the knowledge of medicine and magic through trances or dreams (Segal 1989), and as the breadfruit goddess, she controlled the ripening of breadfruit and could influence the forces of nature (Sarfert 1919). She held the power of life and death, and could conjure typhoons, famines, droughts, and when a specific type of punishment was needed, introduce disease (such as influenza). Yet, she was also generous and provided for her people, according to Sarfert (1919). The power of Sinlaku was so great that Reverend Snow found himself competing against her in his mission to Christianise the island (Buck 2006). According to local histories, Sinlaku, upon seeing the future of her people and the dawning of a new religion, left Kosrae forever and fled to Yap (Sarfert 1919).

When she still was favoured Menka was her place of worship. The old name for the village was Monika, which means something approximating “this is the right place for Sinlaku, that she and this place are just right for the people of Kosrae” (Hamlet Jim, personal communication, 2011). The village rests at the foot of Mt. Finkol, which in the oral histories plays a significant role—Finkol is the head of a snake monster that gave birth to the island and formed the mangrove channel surrounding it. In the legends, Fin, the highest point or place, and Kol, gold or shiny, referred to the image of the mountain when viewed from Leluh: under a full moon, at certain times of the year, the snake monster would be called to the surface; proof of its presence was the transformation of the top of Mt. Finkol into a pair of glowing eyes (Sarfert 1920).

Menka was also tapu, or off-limits, to all but a select few. It was considered a place where only the most powerful (usually the priests, healers, sorcerers, and/or magicians) would meet at specific times in the year as part of a celebratory cycle, or for special events such as the ascension of a new paramount chief (Cordy 1993). On these occasions, the house/place of Menka would be repaired and rebuilt, rites required
by the goddess would be administered, rituals would take place, and the goddess would deliver her messages to the people of Kosrae through her representatives, her intermediaries. A couple of her servants (ladies) were still living and making predictions through World War II; they were considered always right. Both ladies died more than 20 years ago, leaving behind no records of their duties, responsibilities, or actions with respect to the goddess (Berlin Sigrah, personal communication, 2010).

Within the archaeology on Kosrae, Menka is unusual because of its interior location. This has proved beneficial in that its isolation has protected it from infrastructure and development projects. Its place in oral history has also protected it from local curiosity, as it continues to retain an aura of tapu where powerful ancestral ghosts still roam.

What little is known about the physical place of Menka comes from local landowners and occasional pig and pigeon hunters who pass through the area. The village is described as having more than a hundred houses within its boundaries, far more than any other traditional village on the island, with perhaps up to a thousand people who could have occupied the village during times of celebration. Its location in the ‘centre of the island’ was also highly practical, because from this point the goddess and her servants could cross the island from one side to the other following a hidden network of stone paths. Somewhere deep within the jungled recesses of the village, there is also supposed to be a temple and a secret meeting place where Sinlaku’s mortal representatives met and carried out the necessary rituals in her name.

Other stories refer to a standing stone of some spiritual significance somewhere within the village, as well as a line of standing stones that led to the goddess’s temple within the confines of a cave where Sinlaku’s agents would convene with the goddess. At one point, a hunter passing through the area some 15 or 20 years ago relates that the goddess revealed her compound (bigger than any others around) and throne (now possibly collapsed, but visible from the lone coconut in the drainage basin) to him, as if he had awakened from a dream; he never found them again, stating that the goddess has chosen to conceal these features from him and all others who enter the area (Flatney Tilfas, personal communication, 2010). To most Kosraeans, Menka is still a
place to be avoided, as it continues to be a place of great power, magic and mystery.

**PREHISTORIC ARCHITECTURE ON KOSRAE**

The study of prehistoric architecture on Kosrae has been influenced by the initial historical focus on the site of Leluh, a site of monumental proportions (Cordy 1982a, 1982b, 1985, 1993; Hambruch in Sarfert 1920; Morgan 1988). By comparison any other archaeological site with a more modest set of architectural remains has either been under-reported or dismissed as of little consequence, considered mere stepping-stones in the path toward the architectural climax of Leluh. This is true of one of the earliest and most significant site on the island, Likinlulem, the place from which traditional titles originated, and is said to have housed the island’s highest chiefs with the oldest lineages, at least until about AD 1400 when Leluh, its political rival, began to amass the political will and strength to conquer and unify the island (Bath et al. 1983).

The lack of monumentality at Likinlulem was sufficient to dismiss it as a major influence in the cultural development of the island (Cordy 1982b, 1993). Yet, next to Menka, it is the one site on the island that appears regularly (and in a key role) in legendary histories. Likinlulem is frequently described as having been occupied “before time began” or “before the before”. Its architecture and layout form the model of virtually every other site so far recorded on the island, including Leluh (see below). It consisted of nine simple two-roomed compounds composed of low, rubble-filled basalt boulder walls, where one room housed a centrally-placed single to multi-tiered stone platform, and the other served as an entry and possibly a communal area. Following ethnographic descriptions, the platforms likely supported raised pole and wooden structures that likely served as sleeping houses (Sarfert 1919; Cordy 1995). The second room, the entry room, would have been without a platform and provided the entry-way area for the compound. An opening was built into the exterior wall of this communal room, often with larger boulders or standing stones flanking the entry. In general, there was no entry/break in the exterior walls defining the room with the platform, including the internal dividing wall between the two rooms. Each compound was connected by a paved stone pathway. Surrounding the entire complex was a low basalt boulder and rubble
wall that adjoined a canoe landing. A channelized perennial stream flowed through the centre of the village.

Likinlulem’s walls consisted of unmortared, multi-coursed alignments of randomly placed undressed basalt boulders, with little to no fitting indicated. All boulders appeared water-rounded and collected locally, with the use of smaller basalt cobbles as interstitial fill to stabilize the boulders. Structurally, the walls were double retaining walls filled with a packed rubble core of a chaotic range of cobbles and boulders with no consistency in either shape or size indicated. According to archaeological investigations (Bath et al. 1983; Cordy 1993), Likinlulem was occupied by AD 435-630, with its peak period of occupation between about AD 1200 and 1600—a time frame that is becoming increasingly important in the history of Kosrae, as this was an era of independent polities, political rivalries, intra- and interisland conflicts and alliances, a social dynamic with an artistic tradition recognized around the island, the struggle to control resources or access to major resources, and the rise of Leluh.

Contemporaries to the early (pre-AD 650) Likinlulem era include Safonfok, Final Tokosra, an array of sites within the Tofol River drainage, and a scattering of other sites on the island (Beardsley 2007). Each reflects the architectural patterns visible in Likinlulem, although building materials may differ depending on the local availability of materials (Safonfok, for instance, incorporated coral into its walls, as the site is located on the island’s south-western shoreline). Altogether, the archaeological and architectural ensembles visible in these sites reflect a common vocabulary:

- mortarless double retaining walls with multiple courses of undressed basalt (and/or coral) boulders and a packed rubble core;
- paved two-room compounds with a stone platform in one room, the other room without a platform but with a breach/opening in the exterior wall suggestive of use as an entry-way/communal area;
- a network of stone pathways connecting villages, occupation sites and compounds;
- canoe landings with external housing (paved areas defined by low retaining walls) near the docks;
• nearby taro gardens (where today relict varieties of taro only referred to in oral histories are found growing);
• cultural alterations and channelization of river courses, suggesting use as throughways across the landscape;
• artifact types distributed throughout sites, including clay figurines, pottery, coral fishhooks, stone statuary, and clan symbols new to the archaeological record of the island and beyond;
• a shift in dietary practices visible in shellfish remains; and,
• a settlement pattern indicative of a highly dense, populated environment.

The monumental site of Leluh ultimately became the seat of the paramountcy and ushered in a new era of political complexity. In its early phases, the construction of Leluh followed the same architectural model visible in the other sites on the island. By A.D. 1400, Leluh was at the peak of its architectural expression, where it exhibited the architectural features of the earlier, formative era, but further embellished and developed on a grander and monumental scale. Leluh was built as an extension of a small lagoon islet, forming a man-made island of fill on a shallow reef platform. Its walls were more than a meter thick and several meters tall, with some higher than 6 meters. Many of the walls culminated in a header-stretcher configuration with the use of columnar basalt logs. Every wall consisted of multiple courses of undressed basalt boulders, some more than a meter in length, that were generally fitted, but still retained interstitial fill of smaller boulders and cobbles. The interior rubble core of the walls consisted predominately of packed coral boulders and cobbles. Paving throughout Leluh was primarily of coral slabs, while the dividing walls within the interior of compounds were of basalt. Leluh also had a series of burial compounds that contained truncated semi-pyramidal platforms with internal crypts lined with a cribbing of columnar basalt (Cordy 1982a, 1982b, 1985, 1993; Hambruch in Sarfert 1920; Morgan 1988). The impressiveness of Leluh was commented upon by the first Europeans to visit the island (Ritter and Ritter 1982).

The difference between Leluh, as an example of later architectural style, and the earlier styles visible in sites like Likinlulem, other than size and impressiveness, included:
• increased attention to the selection of building materials;
• greater attention to the tailored, fitted quality of stone facades;
• use of header-stretcher construction style with columnar basalt fragments to finish corners, tops of walls, and those areas most visible to a viewer; and,
• architecture as theatrical presentation, with an apparent attentiveness paid to the aesthetic experience of the construction (e.g. finished wall facades only at structural entry points).

THE TEMPLES OF MENKA
During our 2010-2013 archaeological work in Menka, we documented two architectural complexes (the upper- and lower complex) that include compounds/areas suggesting use involving ceremony, a rock shelter with a painted ceiling, and other features such as residential areas and statue fields that further support the oral histories associated with Sinlaku’s village (Figure 2). The complexes consist generally of multiple double-room compounds defined by rubble-filled stone retaining walls, with a truncated semi-pyramidal stepped platform within one of the rooms of each compound. The platforms have a rubble core and remnants of postholes. Construction methods range from randomly stacked unshaped basaltic boulders to columnar basalt fragments placed in a header-stretcher format. The lack of defensive walls surrounding the complexes was notable. Both complexes were identified as temple areas, with one compound in each associated with a predominately ceremonial role. These two compounds exhibited unique features found nowhere else on the island, including defined altar-like areas—one built into the platform in the form of an inset shelf/table complete with a small carved stone statue set upright on the back of the shelf/table, and a stone knife tucked just under the shelf/table; the second identified as a large, dressed boulder with surface carvings on all sides and a slightly concave, bowl-like top, adjacent to a field of large statues, and in a direct alignment to Mt. Finkol. Each complex of associated compounds is described below.

The upper complex
This complex, the smaller of the two, is situated deep within the headwaters of Menka River (Table 1).
It contains a single two-room compound 11 by 7 m in size, surrounded by clusters of large (> 1 m tall/long) statues and has a direct line of sight to Mt. Finkol (Figure 3). Just beyond the compound is a large boulder with a slightly flattened, concave top and series of raised relief engravings on all sides; we interpreted this as an altar as it rests on the edge of a ravine, faces Mt. Finkol, and is flanked by meter-long columnar uprights. Upslope from the compound and altar there is a cluster of statues carved from basalt and representing animistic forms, including several different kinds of fish, a clam, manta rays, and turtles. These have been interpreted as symbols of clans and other figures associated with oral histories from the island.
A paved pathway with shallow, broad steps and flanked by a colonnade of standing stones leads directly from the river to the compound, the altar and the statue cluster. At the end of the pathway (on the west side of the compound), there is a meter-long statue of a box-fish, *ot wot* in Kosraean, a clan symbol. At least two large basalt heads are located by this complex—one at the immediate upslope (east) entry to the compound, altar and statue cluster (Figure 4, upper), and a second
farther upslope at an access point from a small residential complex. Each head is over 1.5 m tall, and nearly as wide, carved with anthropocentric features that include a topknot, a symbolic feature identified with men of status. The upslope head has two faces carved into it—one on the upslope side, the second on the downslope side.

Figure 4: Two of the colossal heads identified with the both the Upper and Lower Temples in Menka, Kosrae. The upper two photos (A, B) show the downslope and upslope sides of one megalithic head associated with the Upper Temple. The lower photo (C) illustrates the giant face carved from breccia bedrock, located at a point between the Lower Temple and the large archaeological residential compound complex to the south (Photo: Felicia Beardley).
Architecturally this compound is comparable to the early sites on the island, in terms of its size and construction (see above for description on early sites). It makes use of smaller basalt boulders, roughly fitted together with interstitial fill of cobbles and pebbles. The platform in one room appears to be a single-tiered structure, but trees growing within it are obscuring any structural details. The second room, the entry/communal room, has two entries, one each in the east and west walls of the room. The western entry is blocked and distorted by a large tree growing into the wall.

The lower complex
The second, lower complex is downriver from the first, and is centrally located within the river basin, at the confluence of Menka River and its principal tributary (Figure 5). It is composed of three compounds, including a large temple compound with an altar built into the platform (Table 1). A number of smaller statues (< 1 m tall/long) representing animistic figures are distributed throughout the complex; some are integrated into the stone facades of the walls and platforms, others flank the compound entryways. Statues include painted figures and composite figures with an unbaked clay appliqué for their finer surface details. Like the statues in the upper temple complex, these statues represent clan symbols, and other animistic as well as anthropomorphic forms that have received mention in the oral histories. A canoe landing is located at river confluence and several large open paved areas are adjacent to the complex. The rock shelter with a painted ceiling is upriver from this complex, in the headwaters of the Menka tributary (Figure 6). Downriver there is a colossal stone face 3 m in breadth and over 2 m tall, carved into a breccia outcrop located at the entry point from a residential area (Figure 4, lower).

Architecturally, the lower temple complex contains two unique variations on the standard two-room compound structure. The actual temple/altar compound is a single-room structure with a multi-tiered platform with an altar built into the platform in the form of an inset shelf/table. The second variant is a three-room compound with two multi-tiered platforms, each occupying a single room. The final compound of this complex is a typical two-room compound structure; however, it is also the smallest of the three compounds with an entry in the southeast corner reached by way of a stairway from a downslope
pathway linking this compound with the altar compound to the west. A second entry connects the common room and platform room; it is paved with smoothed boulders, with small carved statues resting within the passage. The platform here is a single-tiered structure. Large trees occupy this structure, distorting the outer wall of the common room, and making it difficult to identify the overall outline of the structure.

Figure 5: Map of the Lower Temple in Menka, Kosrae. Compound walls are outlines in solid black.
The three-room compound with the two multi-level platforms is entered through the common room by way of a four-stair passage from the stone path connecting the altar compound. Much of the common room has been damaged by pigs, which have uprooted much of the pavement and destroyed any defining walls in the north-eastern quadrant of this room. Another entry passes through the dividing wall between the common room and the first platform room. The dividing wall between the two platform rooms also contains an entry. This second platform room (the third room of the compound) also has entry in its south-eastern corner reached by a staired passage from the river side of the compound, as well as a third entry in its north-western corner; the third entry leads to a statue area and kitchen/workshop area. All entries are flanked by larger boulders and have a red stone sill or pavement inside the entries between rooms. The red stone is significant, as mentioned in the oral histories; red is identified with cleansing or neutralizing powerful negative spiritual energy (Sarfert 1919). This entire compound was covered in vegetation, with wall collapse covering many of the entry passages.
Finally, the altar compound, the single-room compound, retains a multilevel platform with an altar built into the eastern face of the platform (Figure 7). The altar is inset into the platform, with a step of a smoothed flat boulder and a ledge, shelf or table-like structure at roughly waist height defined by a single columnar basalt fragment on each side. To the north of the altar, in the north-eastern of the platform, there is a large depression flanked by standing stones. The depression is too large for a posthole, and has been interpreted as the foundation for a wooden pillar or possible statue. The platform is placed on a raised pavement of basalt cobbles and boulders with Yapese corners of extended columnar basalt fragments angled outward like the prow of a boat (Beardsley 2004; Figure 8). Two entryways are located in the northern wall of the compound; one is connected to the raised pavement by a paved walkway. Each entry is flanked by larger boulders and carved stone statues, each less than 1 m tall. A large banyan tree occupies much of the unpaved portion of the compound interior, and has grown into the platform itself, raising the prospect that the structure could collapse should there be an attempt to remove the banyan. The line of sight to Mt. Finkol is blocked by vegetation and the ridgeline that divides Menka River from its tributary.
Construction methods for the compounds in the lower temple complex mimic those found across the island. However, here, basalt boulders are more precisely fitted together, although the builders still used interstitial fills of cobbles and pebbles. Columnar basalt was recruited for use in designing the Yapese corners of the raised platform in the altar compound. Rooms were larger, platforms had multiple tiers and generally covered a greater area, and smaller stone figures were built into the defining compound walls and platforms. These smaller figures are identified as *inuts*, or small guardian figures that act as watchdogs and place curses on trespassers (Sarfert 1919). All compounds are linked by stone pathways and intervening pavements.

**Comparison of the two sites**

While each temple complex has similar features and use comparable construction methods that consist primarily of mortarless, roughly fitted to semi-fitted methods on basalt boulders with interstitial fills of cobbles and pebbles, their arrangement and placement in the landscape differ. The upper temple complex has all the earmarks of an early site in terms of compound size and construction, the use of larger (> 1 m) statues carved into identifiable forms (likely clan symbols), and a clear
association with oral histories (colonnaded pathway, direct line-of-sight to Mt. Finkol) similar in many ways as other archaeological sites referenced in oral histories, such as Likinlulem. The upper temple is also more compact in its arrangement, creating a higher degree of privacy with little room for publically observed performance-related rites. Freestanding, carved megalithic stone heads stand at two principal entry points to this temple complex—one from a residential area further upslope and a second at the immediate entry into the site.

Table 1. Compound Room and Platform Size at Menka

<table>
<thead>
<tr>
<th>Compound</th>
<th>Exterior</th>
<th>Room 1</th>
<th>Platform Room</th>
<th>Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>W</td>
<td>A</td>
<td>L</td>
</tr>
<tr>
<td>Upper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11.0</td>
<td>7.0</td>
<td>77.0</td>
<td>2.8</td>
</tr>
<tr>
<td>Lower, altar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>23.9</td>
<td>17.7</td>
<td>423.03</td>
<td>--</td>
</tr>
<tr>
<td>Lower,2-room</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16.5</td>
<td>9.7</td>
<td>160.05</td>
<td>5.3</td>
</tr>
<tr>
<td>Lower,3-room</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--rm 1</td>
<td>38.0</td>
<td>18.3</td>
<td>695.4</td>
<td>4.3</td>
</tr>
<tr>
<td>--rm 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower, all</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(L)ength and (W)idth measured in meters; (A)rea is in square meters.

The lower temple complex, by contrast is larger, more expansive, more elaborate and refined in terms of its architecture, and seems to lack the direct association with oral history details that appear in the upper temple. The presence of expansive open, paved swaths of adjoining ground, more complicated architecture (Yapese corners, multi-tiered platforms, red stone sills), smaller statues (< 1m) but more complex with composite structures that make use of unfired clay for finer surface
details, and a canoe landing suggest a more complicated and sophisticated construction with a greater level of grandeur and impressiveness, evoking the feeling of a staging area for a performance. Compounds are larger, and exhibit a style of construction comparable to somewhat later archaeological sites, including the latter phases of the site of Leluh. In short, within the confines of the site of Menka, there are architectural styles that bridge the gap between both early and later archaeological sites, from Likinulem to Leluh, from the upper to the lower temple complexes respectively.

A painted cave is upriver from the lower temple complex, but there is no indication that it is directly associated with the lower temple. The cave rests on the opposite side of the river valley, roughly in-line with the upper temple and Mt. Finkol.

STONE STATUES AND MEGALITHIC HEADS
The presence of stone statues, especially monumental stone statues, and other carved figures of symbolic, anthropomorphic or animistic reference in the archaeological record of Micronesia was once thought to be restricted to the islands of the west and those outside the region. There, a rich history of figurative and symbolic art sculpted in stone and wood can be found (Hisaktsu 1995; Byrne 2005; Lilley 2006; Rainbird 2007), with the apogee of megalithic symbol-laden statues found on Rapa Nui/Easter Island (Van Tilburg 1994; Shepardson 2005). But in eastern Micronesia, the only imagery of symbolic allusion has historically referenced a small field of petroglyphs on the island of Pohnpei (Rainbird and Wilson 2002), even though the volcanic islands of this area are well-known for their mastery of stone masonry and extensive stone architecture, as exemplified by Nan Madol and Leluh (Athens 1995; Rainbird 2004).

The first recognition of stone statues and other three-dimensional art in eastern Micronesia came in 2006, with the excavation of Finol Tokosra on Kosrae (Beardsley 2008). There, a sophisticated stone working industry focused on the production of an array of figures was already well-developed by AD 650 (Beardsley 2007). Figures vary in size from 2 cm to nearly 1 m in length and embody clan-like symbols of manta rays, turtles and eels as well as anthropomorphic heads and even a torus-like figure reminiscent of Yapese stone money. All figures are skilfully carved, highly polished and symmetrical; most are basalt, with
at least two carved and incised pebbles of an exotic non-local stone; some retain traces of red paint; and a few are masked with an unbaked clay appliqué incised with detailed surface designs (e.g., fish scales, hair)—these latter were recovered from a burial dating toward the end of site occupation, between AD 1400 and 1600, during the Leluh era. All figures are effectively portable, so that the occurrence of stone statues of monumental proportions locked into a landscape were neither sought nor identified nor even imagined. Finol Tokosra was an anomaly in the archaeological record, at least initially, as no other stone carvings of any size had been documented on Kosrae or anywhere else in eastern Micronesia. But since it was documented, more statues and stone carvings are being recognized in archaeological sites on the island.

Between 2010 and 2013, three colossal stone statues were identified and documented in the interior of Kosrae (Figure 4 illustrates two of these megalithic heads). All three statues are in the shape of a head only, and exhibit shallow highly weathered features pecked and ground into 1) freestanding basalt boulders and 2) a breccia bedrock outcrop. Two are located at the access point to the upper and lower temple complexes in Menka, and the third is located in direct association with the upper temple. The heads reflect a high degree of craft specialization and are integral to an architectural arrangement designed to reinforce the visual narrative of the sacerdotal function of Menka (Sarfert 1919).

All three megalithic heads appear to be men as each displays a topknot, the symbol associated with a traditional man of standing and status (Ritter and Ritter 1982). The topknot not only indicates gender, but provides just enough specificity of appearance to signal a conventionalized portrait of an iconic authority figure. One freestanding basalt head has two faces and is fully carved with a symmetrical wraparound composition. It is 2 m tall, 1.5 m wide and 2 m deep from front to back. Each face displays a topknot, a well-formed nose, mouth and chin, eyes detailed down to the pattern of their irises, and remnants of white paint. The rear, upslope face has a diamond pattern cut into the forehead. On each side of the head there is an additional elaboration, perhaps part of a headdress, hairstyle, or ear. The head once stood on a paved platform at the top of a shallow ravine that separates a residential area from the upper temple complex; the head has since slid downslope and rolled forward. The second head, also a free-standing boulder, rests at the immediate entrance to the upper temple complex. It has a face
pecked into the surface facing upslope, toward the pathway leading to the first free-standing boulder head and its associated residential area. It is 1.5 m tall, 1 m wide and 1m deep. The third head is pecked, carved and ground into a breccia bedrock outcrop exposed in the steep wall of the river channel at a point that marks an entry to the lower temple. It consists of two well-carved eyes, a nose, and a topknot. There is some indication of white paint on the side of the face. Overall, it is 3 m wide from cheek to cheek, 2 m tall and 1.5 m front to back. A small paved platform extends from the tip of the nose to the riverbank, a distance of 1.5 m.

Additional figures identified throughout both temple complexes reference the clan-like symbols documented earlier in Finol Tokosra, as well as male heads with topknots.

CONCLUDING COMMENTS
The presence of the megalithic stone heads, the symbol-laden stone figures distributed between the two compounds, the painted cave, colonnaded pathways, features described in oral histories, and the variations on traditional architectural structures together reinforce the powerful message that Menka was a site where the production of a religious narrative and ideological behaviour imposed by an ancient belief system were orchestrated. If, however, one were to view the single compound in the upper temple complex by itself, without the benefit of its surrounding features, it could easily be dismissed as just another simple, small and insignificant site. But, when the surrounding features are incorporated into that view, the image changes and in its place is a site transformed: here is a site with an architectural complex that inspires, that exhibits the trappings of a place of special significance, that integrates the imagery from oral histories, and becomes a place of rituals conducted in the shadow of Mt. Finkol, itself a place of legend.

The same can be said of the lower temple, although here the architecture is extensive, it is expansive and part of a larger complex that is publically more impressive, and dramatic in its landscape setting. The variations in the architectural structures alone raise the question of site function, and even hint at the possibility that this was a special site. When the accompanying features are added, there is no question that
this is a site of significance, one where events appear to be staged with an air of heightened theatricality permeating the site.

From an overall perspective, the shift from the upper to lower temples reflects the same transition from early to later architectural traditions that is visible across the island; the shift also appears to be one that moves from more localised, possibly tapu rites to those performed in a more open, public forum. Also visible in the features of the upper to lower temples is the decrease in statue size, but with a concomitant increase in the use of composite materials in the creation of greater surface details (on the clay applique), as well as an increase in size of megalithic carvings, progressing from smaller freestanding carved heads to the use of a cliff-face as the canvas for carving even larger stone heads/faces. In short, Menka is the one archaeological site on Kosrae that retains in one place the full complement of architectural styles, from early to later, visible across the full range of historical sites on the island. It is also the only site on the island that is associated with a painted cave, lending credence to the connection with the ancient religion and dedication to the goddess Sinlaku. Most importantly, this is the one site that supports the only archaeological complexes that suggest the orchestration of rites associated with the complement of features representative of temples and temple architecture.

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REFERENCES


POLYNESIA
SOCIAL MEMORY AND THE LANGI (ROYAL TOMBS) OF LAPAHA, TONGA

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Abstract: This paper examines how the traditional history of monumental tombs in a continuously occupied landscape in the Kingdom of Tonga has become fractured, and in some instances attaches uncertainly to a particular mortuary structure. The Tu‘i Tonga dynasty ruled Tonga for more than 600 years (~AD 1200-1800), and traditional genealogies record 39 Tui Tonga, most of whom were buried in stone-faced sepulchres known as langi (sky) at the central place of Lapaha. Construction of the tombs (inscribed memory) required significant community investment, particular in the quarrying and transport of carbonate stone slabs and in mortuary ritual attending the death of a paramount. Nonetheless, the names of several of the largest tombs and knowledge of who is buried in them differ in records spanning 150 years. Political upheaval after European contact led to the demise of Lapaha (Mu‘a) as the central place of Tonga while the termination of public ceremonies centred on the royal tombs as a result of the increasing popularity of Christianity weakened cultural knowledge (incorporated memory) about the tombs. The variability in the names of langi embodies the political decline of the Tu‘i Tonga chiefdom, therefore, and is paralleled by archaeological evidence for reduced investment in tomb architecture.

INTRODUCTION

Social memory is a productive approach to examine the development of complex societies in recognizing that memory-making is associated with material things such as built places and texts, but also is produced and transmitted by social interaction and community ritual (Connerton 1989; cf. Rowlands 1993). Monumental architecture is typically taken to manifest the power/ideology of elites from structure size and the quantity of resources used in construction (Renfrew 1998; Ambridge 2007; Clark and Martinsson-Wallin 2007), with recent approaches examining how social memory is also embedded in large structures and surrounding landscapes (Van Dyke 2003; Hodder and Cessford 2004). For the purpose of this study, and following Connerton (1989), the
concept of *inscribed memory* refers to the material and visible creation of a place aimed at promoting a particular view of the past that validates the existing political and social system, while *incorporated memory* is cultural knowledge about the built landscape transmitted by routine everyday behaviour and passed down in oral traditions and social interaction (Wilson 2010). The divide between the two types of memory is arbitrary and both can be productively conceived as a continuous field of mnemonic behaviour (Joyce 2007). Yet, in situations where monumental architecture legitimizes the position of elites a divide between inscribed memory and incorporated memory can occur when the socio-political system responsible for creating monumental architecture fails/transforms and as a consequence the social behaviour linking communities to large structures in a landscape is partially or totally sundered.

In this paper, I examine how variability in the physical structure (inscribed memory) and traditional knowledge (incorporated memory) of the ancient royal tombs (*langi*) of the Tu'i Tonga dynasty at Lapaha on Tongatapu Island represent political change in the Tongan maritime chiefdom. Lapaha was the ancient capital of Tonga from ~AD 1350 to AD 1790s, and the royal tombs are traditionally linked to the Tu'i Tonga dynasty, which was the first to unite the scattered islands under a centralized political system; only in Tonga did areal integration under a ruling lineage encompass an entire Pacific archipelago in prehistory. The royal tombs are massive and conspicuous structures that collectively comprise a mortuary/funerary landscape (cf. Daróczi 2012) that is experienced everyday by the inhabitants of Lapaha. In spite of this, there are significant differences in many of the tomb names recorded during the past 150 years. To investigate the variability a relative chronology of the nine largest tombs was made to trace the development of the mortuary landscape and to examine whether the tombs which have multiple names are also likely to be the oldest. Although some variability in the naming of tombs is likely due to the greater age of several structures, uncertainty over tomb identity is mainly associated with the breakdown of the unified Tu'i Tonga polity and consequent rupture in communally proscribed behaviours that underpinned the transmission of incorporated memory about the mortuary landscape.
THE NAMES OF TOMBS
Researchers have previously noted that the names of the royal tombs at Lapaha vary with some having more than one name and instances where the same name is given to different tombs (McKern 1929; Spennemann 1989a: 184; Clark et al. 2008). The identity of tomb builders and individuals buried in them is similarly often unclear. A Tongan informant interviewed in the 1920s noted that:

The different langis are known, but as to who made each and who is buried there, some are [known] and others not (Uhatafe in McKern 1929: 67).

For this reason, the pioneer archaeologist of Tonga, William McKern, mapped the Lapaha tombs and labelled them sequentially using a 'J' notation, starting with tomb J01 in the south and ending with J19 in the north and J20 and J21 in the west. New maps and measurements of the Lapaha mortuary landscape and tombs including the dimensions of all stonework has since been made (Clark et al. 2008) with McKern's 'J' notation retained to identify tomb structures (Figure 1). McKern (1929: 33) identified the royal tombs/langi from other constructions on the basis that informants unambiguously recognized them as holding human remains of the Tu'i Tonga line. The royal lineage included the immediate family of the reigning king in addition to closely related chiefly families. The tombs identified as langi consist of seven large tombs positioned in a south-north line roughly parallel to the old shoreline (J01, J03, J04, J09, J10, J15, J17) in front of which lie 10 smaller tombs (J02, J05, J06, J07, J08, J11, J12, J13, J14, J16). To the west are J20 and J21 built on reclaimed land west of the old shoreline. Groups of tombs that belong to subsidiary chiefly lines include J18 and J19 associated with the Tu'i Lakepa title and the Loamanu tomb group of the Tu'i Ha'atakalaua lineage which are not considered further (Figure 1).

Structurally, the langi tombs have one or more tiers faced with beach rock slabs which demarcate a rectangular-square area within which burials were placed in large stone vaults made of beach rock slabs or were interred in platform fill. Beach rock forms from the cementation of carbonate sediment in the intertidal zone with tomb-slab quarries known from coastal locations throughout the archipelago, but particularly on small carbonate islands outside the Fanga 'Uta Lagoon.
The J20 tomb is unique as two of its three tiers are built from large slabs and blocks of raised reef limestone which forms the bedrock of Tongatapu Island, rather than of beach rock.

The first European observations of the Lapaha *langi* were made by Captain Cook and his crew in 1777, followed by visitors on the missionary ship *Duff* in 1797. The royal tombs were partially mapped in 1827 during Dumont d'Urville's visit to Tonga with the first attempt to record the names and size of *langi* made by the missionary Shirley Baker (n.d.) in an undated handwritten manuscript that probably dates to 1860-1861 when Baker was stationed at Mu’a (Rutherford 1971: 14). Mu’a is the name given to the chiefly area encompassed by the two adjacent towns of Tataakamatonga and Lapaha associated respectively with the Tu’i Kanokupolu and Tu’i Tonga titles. In addition to noting the tomb names, Baker also recorded the number of platform tiers and length and breadth measurements of structures several of which can be compared with modern measurements to identify the named tombs he recorded.

The next name lists date to the early 20th century and were compiled by the archaeologist McKern from his investigations of the tombs as well as names recorded by Edward Gifford, both of whom were in Tonga during the 1920-1921 Bayard Dominick Expedition. McKern also published a list of tomb names compiled by Uhatafe, a *matapule* (hereditary ceremonial attendant to a titled chief) and carpenter to the Tu’i Tonga (Gifford 1929:152) that had been published earlier in the Catholic Mission magazine (1909: 81-83).

Queen Salote composed a famous *lakalaka* performance called *Otu langi* (row of *langi*) that mentioned tomb names in 1953 (Taumoefolau and Wood-Ellem (eds) 2004), and a short list of tomb names was compiled by the Tongan Traditions Committee and used for the cadastral map of Lapaha township made by the Ministry of Lands, Survey and Natural Resources (MLSNR) in 1957. More recently, the author has compiled a list of tomb names during interviews made over several years with local historians, and the Lapaha community has developed its own list of names from interviews with land owners in 2012.

The record of tomb names given in Table 1 spans some 150 years and includes those made by knowledgeable outsiders such as Baker, McKern and Gifford as well as Tongans from Lapaha and those like
Queen Salote who were connected to the chiefly Tu'i Tonga line (Wood-Ellem 2001).

The names of the nine large tombs are listed first followed by the 10 smaller tombs. Of the nine largest tombs – which are the main focus here – only five are consistently named (J01, J04, J10, J20, J21) while the remaining four tombs have 3-5 different names (J03, J09, J15, J17). Named slabs and volcanic stones were used in tomb construction and

Figure 1. The mortuary landscape at Lapaha. The nine largest tombs discussed in the paper are identified in bold text. The reclaimed land area holds the J20 and J21 tombs. Oval tombs are earth mounds and do not have beach rock slab faced walls in contrast to square-rectangular tomb structures. The position of the modern road may, in part, follow the ancient road/avenue west of the main tomb line.

The names of the nine large tombs are listed first followed by the 10 smaller tombs. Of the nine largest tombs – which are the main focus here – only five are consistently named (J01, J04, J10, J20, J21) while the remaining four tombs have 3-5 different names (J03, J09, J15, J17). Named slabs and volcanic stones were used in tomb construction and
Table 1. The names of royal tombs at Lapaha. Some lists contain additional names that cannot be securely matched with a specific tomb and have not been included.
provide another means of identifying large burial structures, but these are similarly attributed to more than one tomb. For example, different sources have the stone 'Pau' located, variously, in J01, J04, J15 and J16, 'Vuna' and 'Mataele' in J09 and J08, and 'Tuituiohu' in J09 and J17, and 'Hakelukuanganavu' in J06 and J20.

There are three main points to be taken from the name lists presented in Table 1. First, the large tombs with multiple names are those that have the greatest number of tiers. Both J09 and J17 each have four tiers, J03 has five tiers and J15 has three tiers.

In contrast, J01, J04 and J10 have one or two tiers while J20 and J21 each have three tiers. Second, in the large-sized tomb group with multiple names the majority of names are not unique and are present in other lists to designate either a small tomb or another of the large tombs. This is significant as a high proportion of unique names might indicate that langi names changed frequently when a new chiefly burial was made. The use of existing tomb names for different tombs is consistent with information loss and uncertainty over the identification of a tomb, which is acknowledged by the Lapaha community.

Third, some oral traditions and Spennemann’s (1989a: 199) hypothetical tomb construction sequence suggest that the tombs with multiple names such as J03, J09 and J15 are among the oldest tombs (see also the construction order proposed by Kirch (1984) and Aswani and Graves (1998) for Lapaha). For example, langi Leka (J09/J17) is reputed to have been the first royal tomb to be built at Lapaha by the 12th Tu’i Tonga (Gifford 1929: 53). If so, confusion over the identity of J03, J09, J15 and J17 might relate to the greater age of these tombs and loss of information about the oldest tombs over time. In the following section the relative age of the nine large tombs is examined through an analysis of the tombs’ physical features.

**AGE OF THE ROYAL TOMBS**

Radiocarbon dates on charcoal and marine shell samples from the foundation trenches used to hold tomb slabs provide a general chronology for langi starting ~550 calBP and ending around 200-150 calBP (Clark et al. 2008). However, the specific age of each tomb and the development of the mortuary landscape cannot be determined with available results as $^{14}$C ages for several tombs are not consistent. In the absence of a robust radiocarbon chronology a relative tomb sequence
based on physical features and traditional information is established to test the hypothesis that the tombs consistently identified over 150 years (J01, J04, J10, J20, J21) are more recent than those which are known by multiple names (J03, J09, J15, J17). Spennemann (1989a, b) used slab measurements, among other data, to place the royal tombs in a relative sequence based on the idea that the size of slab facings in the walls of the first tomb to be built would not be distinguished from one another because all facings would have been equally exposed to viewers. With the building of tombs in a south-to-north line, however, only the west and east facings would be highly visible suggesting that larger slabs would be used on 'display' sides compared with the south and north sides where visibility was limited by already built tombs and the subsequent construction of tombs. Spennemann’s (1989b: Figure 9.16) study suggested that the first tomb to be built was J03 followed by J09 and J15. After these it is suggested came J01, J04, J10 and J20, with J17 the last tomb to be built.

Similar to Spennemann’s innovative approach the size of beach rock slabs in the sides of the nine large tombs is considered to potentially relate to the construction sequence. Further, a general guide to the chronological development of tombs can be proposed from Tongan traditions that specify that the first royal tomb to be made with quarried beach rock was the three-tiered tomb at Heketa in eastern Tongatapu built by the 11th Tu’i Tonga Tuitatui (~600-550 calBP) prior to the establishment of the chiefly centre at Lapaha. At the other end of the tomb construction sequence, Captain James Cook and his crew attended a ceremony in 1777 held by the 36th Tu’i Tonga Pau in front of the J01 tomb where his father the 35th Tu’i Tonga Tu’i Pulotu II was reputed to have been buried (McKern 1929; Gifford 1929). The J01 structure is an earth mound surmounted by a single perimeter wall of beach rock slabs, and is a form likely, therefore, to be a late architectural development. Another potentially chronologically sensitive feature is the presence of 'display' stones in the west side of several tombs known as halahala stones (hala=demise; applied to the Tu’i Tonga and his family, McKern 1929: 39-40) that assist in developing a relative tomb sequence.

SLAB LENGTH AND ORIENTATION
The average slab size is smallest for the Heketa tomb and the J01 tomb which are the oldest and youngest in the relative sequence, while J09
Table 2. Heketa and Lapaha tomb features showing that average slab length is greatest on the west and east tomb walls (see Figures 1-3 for additional details).

<table>
<thead>
<tr>
<th>Tomb</th>
<th>Construction</th>
<th>Tiers</th>
<th>Mean slab length (all tiers in m)</th>
<th>Largest mean slab length (m)</th>
<th>Side</th>
<th>Tier</th>
<th>Display stone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heketa</td>
<td>Beach rock faced</td>
<td>3</td>
<td>1.47</td>
<td>2.00</td>
<td>south north</td>
<td>1</td>
<td>no</td>
</tr>
<tr>
<td>J01</td>
<td>Earth mound with beach rock facing on top</td>
<td>1</td>
<td>1.35</td>
<td>1.65</td>
<td>west east</td>
<td>1</td>
<td>yes</td>
</tr>
<tr>
<td>J03</td>
<td>Beach rock faced</td>
<td>5</td>
<td>1.79</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>yes</td>
</tr>
<tr>
<td>J04</td>
<td>Earth mound with beach rock facing on top</td>
<td>2</td>
<td>2.45</td>
<td>4.08</td>
<td>west east</td>
<td>1</td>
<td>yes</td>
</tr>
<tr>
<td>J09</td>
<td>Beach rock faced</td>
<td>4</td>
<td>3.28</td>
<td>4.49</td>
<td>west east</td>
<td>1</td>
<td>yes</td>
</tr>
<tr>
<td>J10</td>
<td>Beach rock faced</td>
<td>1</td>
<td>2.93</td>
<td>3.67</td>
<td>west east</td>
<td>1</td>
<td>yes</td>
</tr>
<tr>
<td>J15</td>
<td>Beach rock faced</td>
<td>3</td>
<td>2.23</td>
<td>2.99</td>
<td>west east</td>
<td>1</td>
<td>no</td>
</tr>
<tr>
<td>J17</td>
<td>Beach rock faced</td>
<td>4</td>
<td>2.19</td>
<td>2.98</td>
<td>west east</td>
<td>1</td>
<td>no</td>
</tr>
<tr>
<td>J20</td>
<td>Limestone and beach rock faced</td>
<td>3</td>
<td>2.49</td>
<td>4.01</td>
<td>north west</td>
<td>1</td>
<td>no</td>
</tr>
<tr>
<td>J21</td>
<td>Beach rock faced</td>
<td>3</td>
<td>1.92</td>
<td>2.20</td>
<td>east west</td>
<td>2</td>
<td>no</td>
</tr>
</tbody>
</table>
(four tiers) and J10 (one tier) have the largest average slab length (Table 2). Turning to the structure sides it is clear that there was a strong preference for selecting the longest slabs to be used in the longest tomb walls (most tombs have a mild-to-strong rectangular form). At Heketa, the longest tomb walls are on the southern and northern sides and these have the largest average slab length. At Lapaha, the longest sides are on the eastern and western sides of tombs, and in nearly all cases the west and east walls have the largest average slab length. The exceptions are J03 where the west side of the basal tier is now buried so slab measurements could not be taken; J20, which is the only tomb with a basal tier of reef limestone blocks rather than beach rock slabs; and the adjacent J21 tomb, where the longest average slabs are found in the second tier. In the case of J20, up to two thirds of the basal blocks of the first tier are buried in reclaimed land (Clark et al. 2008), and it is the slabs in the second tier that arguably have the highest visibility.

There is a clear difference between the average length of the J20 second tier slabs used in the east and west sides (2.4 m and 2.6 m) and those in the north and south (1.9 m and 2.0 m) consistent with emphasising the monumentality of the longest and most visible tomb walls. J21 is unusual because the longest slabs occur in the second and third tier in contrast to most other large langi where the longest slabs are located in the basal tier. There are indications in its wall structure that the J21 tomb experienced rebuilding with the possibility that it was originally a single tiered tomb adjacent to J20, similar to the 10 smaller 'companion' langi west of the large tombs that later had two additional tiers of larger slabs added to it.

**DISPLAY STONES**

Five of the royal tombs have slabs in their western walls that are often larger and always significantly higher than other slabs (Table 3). McKern (1929: 39-40) recorded that some of these were known as halahala stones and were associated with the death of the Tu'i Tonga and his close relatives as well as denoting a path/road or entrance way. One informant interviewed from Lapaha stated that halahala slabs were gateways for the soul of the Tu'i Tonga and his family to pass through on the way to the spirit world Pulotu, which Gifford (1929: 287) records
was believed to lie westward of Tonga and Geraghty (1993) locates in eastern Fiji.

Table 3. Details of display slabs in the west wall of five tombs. Note that the J04 stone has an anomalous location and slab length in comparison to other display slabs identified as halahala stones

<table>
<thead>
<tr>
<th>Tomb</th>
<th>Display slab location</th>
<th>Display slab length and height (m)</th>
<th>Average tomb slab length and height (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>J01</td>
<td>2.7 m north of southwest corner, tier 1</td>
<td>4.18 x 1.84</td>
<td>1.35 x 0.83</td>
</tr>
<tr>
<td>J03</td>
<td>4.4 m north of southwest corner, tier 5</td>
<td>4.66 x 1.85</td>
<td>1.79 x 0.46</td>
</tr>
<tr>
<td>J04</td>
<td>northwest corner, tier 1</td>
<td>1.35 x 2.10</td>
<td>2.45 x 1.11</td>
</tr>
<tr>
<td>J09</td>
<td>southwest corner, tier 4</td>
<td>7.94 x 1.46</td>
<td>3.27 x 0.95</td>
</tr>
<tr>
<td>J10</td>
<td>15.2 m north of southwest corner, tier 1</td>
<td>7.23 x 2.37</td>
<td>2.93 x 1.15</td>
</tr>
</tbody>
</table>

There are two types of display/halahala slab in the west wall of the large tombs. In J01, J03, J09 and J10 the halahala slab is located at, or near, the south-western tomb corner and the stones are both longer and higher than other slabs and are prominently positioned on the topmost tier of multi-platform tombs (Figure 2). The display slab on J04 is different as it is located in the northwest corner of the base tier and while 2.1 m high it has a much smaller length than other halahala slabs. The J04 display slab, now broken, was originally rebated into a large northwestern corner slab 5.6 m long, 1.4 m high and 0.6 m thick and would have highly visible. However, it has an atypical location and a different shape from other halahala stones suggesting it may have had a different purpose than the display/gateway stones used in J01, J03, J09 and J10.

Although necessarily speculative, a relative construction sequence for nine royal tombs is outlined below and in Figure 3. Not all tombs can be placed with confidence in a sequence (especially J04 and J09), in part, because one of the most notable features of the langi is their diverse architecture (see Clark et al. 2008). The tombs vary in the type of stone used (reef limestone and beach rock; the latter is easier to quarry than the former); tomb shape (earth mound surmounted by stone walls, single platform, stepped platform) number of platforms/tiers (1-5); the
presence/absence of display stones (see below), and other architectural features not discussed in detail here such as engraved slabs, volcanic stones and named slabs. Testing of tomb-fill sediments has demonstrated that most of the royal tombs represent a single construction effort rather than multiple construction events involving the sequential addition of tiers to tombs over time.

A RELATIVE CONSTRUCTION SEQUENCE

It is likely, however, that several tombs have been modified with one or two tiers added to J21 and possibly the top (third) tier added to J20, as the third tier is constructed of beach rock slabs rather than reef limestone, and the second tier of the J04 tomb may also be a later addition associated with the burial of the 33rd Tu'i Tonga Tu'i Pulotu I around AD 1680.

Based on their physical characteristics the oldest royal tombs at Lapaha are considered to be J17 and J15 which were probably built around 550-500 calBP from the presence of multiple beach rock tiers and the absence of display stones on their western sides; the oldest
langi at Heketa does not have a display stone in its western wall suggesting this feature was a later addition to tomb architecture. After these tombs it is suggested that J20 and the base tier of J21 were constructed around 500-400 calBP, in part, because these tombs were built on reclaimed land which marks the increasing complexity of the political landscape from the establishment of the Tu'i Ha'atakalaua (junior) line on newly created land west of the old shoreline separated from the Tu'i Tonga (senior) line on land to the east of the shoreline. This division, recognized in Tongan as Kauhala'uta (inland side of the road) Kauhalalalo (shore side of the road), continues today as an important division for chiefly title and protocols (Bott 1982: 80-81).

There are consistent radiocarbon dates that suggest the reclaimed area with the J20 tomb was created 600-500 calBP (Clark et al. 2008), similar to traditional records that have the land division taking place at the time of the 24th Tu'i Tonga Kauulufonua I ~500 calBP (Gifford 1929: 50). However, J20 is consistently named as 'Paepaeotelea' ('platform of Telea') and is traditionally linked with the 29th Tu'i Tonga Uluakimata I (Telea) as far back as 1827 when Dumont d'Urville visited Lapaha (Maurat 1833), suggesting a potential age range of 500-400 calBP for the limestone tiers of the J20 tomb.

The next tombs in the sequence are likely to be J03 (400-300 calBP) that may have been the first to have a halahala stone and possibly J09, although the relative age of this tomb is uncertain. Around this time (400-300 calBP), the top two tiers of J21 may also have been added as both J21 and J03 contain significant engraved slabs in their facings. The next tombs were J04 (first tier) and J10 (300-200 calBP), which have large average slab lengths and one or two tiers, while J01 with a single tier was the last royal tomb to be built at Lapaha according to tradition (200-150 calBP).

The use of an earth mound to elevate the structure rather than using a large number of stone slabs in building tombs with multiple tiers is taken to be a late development, as is the construction of the J10 tomb that has the largest area of any tomb, but has only one tier of stone work.

Collectively the last three tombs hypothesised to have been built (J01, J04, J10) at Lapaha incorporate some 250 slabs weighing 460 tons
Figure 3. Tentative tomb construction sequence for the nine largest royal tombs at Lapaha based on architectural features, available radiocarbon dates and traditional and ethnohistorical records. See Figure 1 for additional details of the mortuary landscape.
compared to the oldest tombs J15 and J17 that used 470 slabs weighing an estimated 550 tons. Over time the average size/weight of slabs used in tombs increased, but the number of slabs used in a tomb decreased in late prehistory because tombs were built with fewer tiers.

The smaller number of stone slabs in simple raised earth and single tier tombs might signify the reduced ability of the Tu'i Tonga chiefdom to obtain the labour needed to cut, transport and place stone facing slabs. Traditional history suggests that chiefly factions were competing for secular authority and gaining relative independence at the expense of the Tu'i Tonga in the European contact era suggesting that fewer resources would have been available for chiefly tomb construction in late prehistory (Gifford 1929; Bott 1982).

DISCUSSION
A relative chronology for the nine largest tombs needs, of course, to be tested with radiocarbon results on short-lived charcoal samples, and integrated with chronological data for other built features at Lapaha such as fortifications, ditches, reclaimed land and numerous smaller tombs (Figure 1). Tomb architecture and some traditional history indicate that the mortuary landscape began in the north and then extended to the west after land reclamation. If the construction sequence is accurate then there was significant spacing between tombs followed by gradual infilling along a defined north-south axis. The construction of tombs in a line south of J17 and J15, and use of the longest stones in the western and eastern walls is consistent with these sides, especially the western side, always having the greatest visibility, and is suggestive of roads/pathways lying parallel to the tomb line from which the burial structures were viewed. The presence of display stones on the west side of five tombs indicates that the main view shed may have been a north-south avenue/road located to the west of the tombs and this is also supported by the construction of 10 smaller tombs immediately west of the large langi. In short, the position and orientation of seven of the nine largest tombs was probably due to a major arterial, possibly a ceremonial avenue, that passed to the west of the main tomb row (J01, J03, J04, J09, J10, J15, J17). The traditional residence of the Tu'i Tonga known as Olotele lies to the south of the tombs suggesting a significant early divide between the domestic space and the mortuary structures of the paramount that narrowed after the
construction of the J03, J04 and J01 tombs in the south. The different layout of J20 and J21 might represent an attempt to create a second row of tombs on reclaimed land west of J15 and J17. However, the J20 structure is made of reef limestone and additional labour would have been required to build tombs in the in-filled lagoon area compared to land east of the old shoreline. It may be significant that the tombs of the Tu'i Ha'atakalaua lineage forming the Loamanu tomb group west of J01 and J03, and J18 and J19 of Tu'i Lekepa line were built on the landward side of the old shoreline rather than on reclaimed land.

Returning to the issue of tomb age as a cause of information loss leading to J03, J09, J15 and J17 known by multiple names, the hypothesis is partly supported by the relative tomb sequence which has J17 and J15 as the oldest of the Lapaha tombs. However, if the relative age of J20 and J21 is accurate then these tombs are older than J03 and J09 yet are consistently named, perhaps because J20 is a unique structure. Nonetheless, the variety of names applied to small and large tombs at Lapaha over 150 years, combined with acknowledged uncertainty within Lapaha over who built the langi and the identity of the individuals interred in them indicates that tomb age is not the only cause of information loss. The construction of durable architecture by a dominant social group characterizes the process of political legitimation in many settings (Wilson 2010). The tombs of the Tu'i Tonga line can be interpreted, therefore, as an example of inscribed memory with the monumental structures manifesting the paramount status of the lineage and emphasizing, in their number and position, the orderly process of lineage succession and the permanence of the centralized political structure.

The transmission of memory about the mortuary landscape through routine bodily practices (glossed as incorporated memory) involved significant events among which the inasi (a share/first fruits) was the most important public ceremony (Gifford 1929; Bott 1982; Martin 1991 [1817]). Tomb construction certainly involved a variety of activities such as stone slab cutting and transport, foundation digging, collection of soil and sand for tomb fill and other associated activities that would embody memory of a specific tomb, as would funeral attendance. The inasi though was a recurring large scale and integrative ceremony attended by chiefs and people from all over Tonga that was held annually or twice yearly at Lapaha at the time of yam planting (July,
*inasi ufimui* and the harvesting of the early yams (October-November, *inasi ufimotua/uluega*). The missionary John Thomas (n.d. FM4/1439/48:24) noted that:

> It may be observed that the inaji [inasi] was the only great public occasion the Tonga chiefs, with the priests, and some of their people had during the year ...

While William Mariner (1991 [1817]: 343-344) recorded the scale of population involvement in the *inasi*:

> ... the people from all quarters of the island are seen advancing towards the Mooa [Mu'a], and canoes from all the other islands are landing their men; so that all the inhabitants of Tonga seem to be approaching by sea and land ....

During the *inasi* the semi-divine Tu'i Tonga was the link between the community/populous and the god Hikuleo, and received tribute offerings of yams and other produce and valuables on behalf of the god to obtain successful food yields and avert misfortune in the coming year. The *inasi* lasted up to nine days during which tribute was collected and dispersed, physical performances, dances and kava ceremonies were held and vast quantities of food were gathered, distributed and consumed. Thomas (n.d. FM4/1439/48:23-24) in the early 19th century lists tribute goods arriving from throughout the Tonga Islands including Niuafo'ou and 'Uvea, respectively 600 km and 870 km distant from Tongatapu. Often overlooked is that the *inasi* was held in front of the tomb of the last Tu'i Tonga and portions or shares from the *inasi* were made to the royal tombs at Heketa and Lapaha (Wood 1943: 4). The *inasi* witnessed by Captain Cook in 1777 involved around 250 people presenting yams and plantains in front of the J01 tomb prior to the main ceremony (Anderson in Beaglehole 1967: 913-914), and Gifford (1929: 76) listed 11 of the royal tombs at Lapaha that received *inasi* offerings (Leka, Tofaua, Tauatonga, Taetaea, Tauhakeleva, Mau, Katoa, Paepaeotelea, Namola, Tuofefafa, Tuoteau). The missionary Richard Lyth (n.d. B549(2): 45) recorded the names of several deceased Tu'i Tonga who were considered to be deified and Thomas (n.d.
FM4/1439/48:30) noted that the royal tombs were visited sacred places:

It [langi] was unquestionably used as a god, and acts of religious worship performed towards it, in consideration of what was entombed there, and whose spirits were supposed at times at least to be present and to understand fully what was going on, and the respect or otherwise that was shown to them.

The main alignment of the royal tombs was argued above to relate to a north-south road/avenue lying between the tombs and the old shoreline from which the largest monumental stones and display stones in the western tomb walls were viewed. The earliest map of the Lapaha tomb area made in 1827 (Maurat 1833) shows a road lying west of the main tomb row and it is shown as the major road linking the western and eastern parts of the island in Wilson’s (1799: 97) map of Tongatapu. In the 1790s the 'great' road was described as generally being 5-7 m wide, but broadened past the green (malae) where the Tu'i Tonga's house was located to a width of about 60 yards (55 m) for around 800 m (ibid: 285). The description is consistent with a broad ceremonial avenue to the west of the tomb line starting with J01 in the south and ending with J17 in the north that was used during the inasi to view and bring offerings to the royal tombs.

The close association between the tombs and the public ceremony of the inasi is suggested to have underpinned the transmission of traditional knowledge about the mortuary landscape, including tomb names and the identity of the occupants. During the late 18th and early 19th century there was increasing factional conflict and chiefly competition that eventually led to the rise of the junior Tu'i Kanokupolu line at the expense of the Tu'i Tonga. The political power of the Tu'i Tonga was fatally weakened by the abolition of the inasi in 1810 by Finau Ulukalala III. Mariner (Martin 1991 [1817]: 34) recognized the close relationship between political power and the inasi ceremony in Tonga in his description of Ulukalala’s actions: "The king annihilates the divine chiefdom of Tooitonga [Tu'i Tonga], and the ceremony of the Inachi [inasi]". From 1810 to 1827, a Tu'i Tonga was not appointed and under the 39th and last Tu'i Tonga Laufilitonga (1827-1865) the inasi declined and its integrative function was later replaced by royal
agricultural shows held on different islands and attended and judged by the new monarchy during an annual circuit through the archipelago (Urbanowicz 1975). At the same time, Christianity was taken up by a growing proportion of the Tongan population and 'heathenism' – attention to the old gods and their sites was abandoned. As Burley (1994: 55) has noted, by the 1830s:

"... long-standing temples, religious objects, and the earlier priesthood were eradicated and traditional religious practices shunned ....".

At Lapaha we do not know exactly how religious conversion (to Catholicism), the abolition of the inasi and the establishment of a new monarchy based in Nuku'alofa influenced traditional knowledge of the tombs, but by the latter half of the 19th century many of the tombs were completely overgrown and there was no longer community or public ceremony focussed on the mortuary landscape. Thomson (1894: 380) noted, pessimistically, that in the late 19th century the tombs were so overgrown with large trees that the terraces were almost obliterated, and:

"now that the office of the Tu'i Tonga has been abolished, the tombs will never again be cleared until the site has been forgotten by posterity ...".

Instead, community connections with the chiefly tombs shifted to use of individual tombs as clan cemeteries based on kin-based connections to the Tu'i Tonga bloodline; a pattern that continues today with six of the largest langi still used as burial sites (J03, J04, J09, J10, J20, J21).

CONCLUSION
Lapaha retains a wealth of knowledge about the Tu'i Tonga era, which is encapsulated in the retention of traditional titles, songs, dances, crafts, and hereditary responsibilities that structure major community events such as births, deaths, marriages and chiefly ceremonies. Indeed, the Lapaha nobles and community continue to exert considerably influence over how the ancient Tu'i Tonga landscape is used and developed according to traditional relationships, titles and land holdings (Clark et al. 2012). Continuity in the layout and construction of architecturally permanent structures is often argued to promote a social group's
corporate solidarity and connections to a place (Bradley 1993: 47; Wilson 2010), while alteration of social landscapes can have a profound effect on memory production (Joyce 2004, 2007). The monumental tombs at Lapaha are an enduring and highly visible symbol of the Tu'i Tonga chiefdom, but despite this the names of langi and uncertainty about the age and identity of individuals interred in the largest tombs suggest that knowledge of the mortuary landscape declined in the post-European contact era.

A relative chronology was developed to test whether tomb age alone was the probable cause of social memory loss. The architectural features of the tombs indicate that the oldest structures in the Lapaha sequence include those which have multiple names and a disputed identity. However, it also appears that tomb age is only partly responsible for information loss as social memory declined with the termination of the public ritual, the inasi, that regularly populated the mortuary landscape through annual/bi-annual offering, presentations and large scale ceremonial activities held at the royal tombs. At Lapaha, it was not landscape change alone, but social upheaval wrought by political change and the uptake of Christianity that was crucial to the demise of community ritual centred on the tombs and the fragmentation of traditional knowledge. The relationship between traditional history and archaeology has often been characterized, unprofitably, by friction and claims of incompatibility. Yet, the variability in the names given to Lapaha’s tombs over 150 years embodies, when analysed, the decline of the Tu'i Tonga chiefdom in late prehistory as clearly as does the reduced investment in tomb architecture detected in archaeological data.

ACKNOWLEDGMENTS

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REFERENCES


ARCHAEOLOGICAL INVESTIGATIONS IN INDEPENDENT SAMOA – TALA ELI OF LAUPULE MOUND AND BEYOND

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Abstract: In the Independent State of Samoa (Malo Sa'oloto Tuto'atasi o Samoa), there are a few examples of large prehistoric mounds. The oral traditions have indicated that these functioned mainly as pigeon mounds (tia seu lupe). However, surveys and archaeological investigations have shown that there are various types of mounds and that at least the two largest mounds, Pulemelei and Laupule probably served as house platforms connected to chiefly power and ritual activities. This paper discusses Laupele mound and recent excavations there and touches on inter- and intra-site relationships of large mounds in Samoa and beyond and their prehistoric as well as present contexts.

INTRODUCTION – AN “INVISIBLE” GIANT PREHISTORIC MOUND IN THE CAPITAL OF APIA

This paper centres on the presentation and analysis of the Laupule mound excavation and the mound building tradition in the Independent State of Samoa (Malo Sa'oloto Tuto'atasi o Samoa) (hereafter referred to as Samoa which includes the two large islands Upolu and Savai'i with adjacent islets Manono, Apolima and Nu‘ulopa. Tutuila and the Manu‘a islands are referred to as American Samoa (Figure 1). However, it has to be remembered that this division is a modern one. The intention is to analyse the relationship between prehistoric mounds and their cognitive and natural environment to understand something about past Samoan society. The contemporary meaning and use of such sites are also discussed.

As a pioneer teacher in Archaeology at the National University of Samoa since 2006, I have made several excursions with students to the large scale prehistoric mound called Laupule. This monumental rectangular mound made up of soil mainly, is more than 100 m wide at the base and 12 m high. It is situated next to Fagali'i Airport in the
Samoan capital Apia, one and a half km to the East of the National University of Samoa (*Le Iunivesite Aoao o Samoa*) (Figure 2, 4). Today the mound is not readily visible since it is hidden in a palm grove but during the time when this area operated as a copra plantation, the mound was clearly visible (Figures 3-4).

![Figure 1. Map of Independent and American Samoa.](image1)

![Figure 2. Map of Independent Samoa with sites in text. See Table 1 for site no. NUS= The National University of Samoa.](image2)
Table 1. Reported large mounds (over 30x30 meter in size) in Savai‘i and Upolu.

<table>
<thead>
<tr>
<th>Site no</th>
<th>Name (place name/survey name/district or village)</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pulemelei mound /SS-Le-1/Palauli/Letolo plantation</td>
<td>Martinsson-Wallin 2007</td>
</tr>
<tr>
<td>2</td>
<td>SS-Fa-3/Sagone/Fagasavai’i</td>
<td>Buist 1969: 55</td>
</tr>
<tr>
<td>3</td>
<td>SS-La-1/Lata/Lata-i-uta plantation</td>
<td>Buist 1969: 56</td>
</tr>
<tr>
<td>4</td>
<td>SS-Fg-1/Ologogo/Faletangaloa</td>
<td>Buist 1969: 55</td>
</tr>
<tr>
<td>5</td>
<td>SS-Fg-3/Ologogo/Faletangaloa</td>
<td>Buist 1969: 55</td>
</tr>
<tr>
<td>6</td>
<td>SS-Fg-3/Ologogo/Faletangaloa</td>
<td>Buist 1969: 55</td>
</tr>
<tr>
<td>7</td>
<td>SS-Pi-1/Ologogo/Paia</td>
<td>Buist 1969: 56</td>
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<tr>
<td>8</td>
<td>SS-Sf-1/Fagasmalo/Safai</td>
<td>Buist 1969: 56</td>
</tr>
<tr>
<td>9</td>
<td>SS-Sn-3/Ologogo/Sasina</td>
<td>Buist 1969: 56</td>
</tr>
<tr>
<td>10</td>
<td>SS-Sp-5/Tuasivi/Sapapali‘i</td>
<td>Buist 1969: 57</td>
</tr>
<tr>
<td>11</td>
<td>SS-Sp-16/Tuasivi/Tuaula</td>
<td>Buist 1969: 57</td>
</tr>
<tr>
<td>12</td>
<td>Laupule and Tapuitea mounds SU-Va-61-63, 68, 88-91/Vailele</td>
<td>Green 1969</td>
</tr>
<tr>
<td>13</td>
<td>Sa’anapu-uta</td>
<td>Epling and Kirk 1972</td>
</tr>
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<td>14</td>
<td>Bishops mound/SU-Mo-1/Moama</td>
<td>Hougaard 1969: 254-257</td>
</tr>
<tr>
<td>15</td>
<td>Vaiuso-uta road cutting</td>
<td>Martinsson-Wallin 2010</td>
</tr>
<tr>
<td>16</td>
<td>Leulumoenga</td>
<td>Davidson 1974: 225-227</td>
</tr>
<tr>
<td>17</td>
<td>Mulifanua plantation</td>
<td>Davidson 1974: 225-227</td>
</tr>
<tr>
<td>18</td>
<td>Manumalala</td>
<td>Davidson 1974: 225-227</td>
</tr>
</tbody>
</table>

During the colonial era this area was a German owned plantation Deutsche Handels-und Plantagen-Gesellschaft zu Hamburg and since independence in 1962 it was operated by the state through the Western Samoa Trust Estate Cooperation (WSTEC). The Copra plantation activities ceased in the 1970-80s and the area has now been subdivided
for housing. The existence of this large manmade mound from the past is not generally known among contemporary Samoans. The informant who took me to the place the first time in 2005 referred to it as; “the hill in the plantation I used to ride up and down when I was a child”. When the students see it for the first time they are usually amazed and every time the same question arises; “How did you know about this mound?”. The apparently obliviousness of Samoans to the site and my interest (as a western trained scholar of Archaeology) in it as an important prehistoric monument has multi-layered implications for the current relationship of monuments and people in the Pacific, especially in relationship to Archaeological sites.

Currently, the son (Afioga Faamausili Papaalii Moli Malietoa) of the former Head of State (Malietoa Tanumafili II) lives on top of Laupule mound, which today is hidden away in a grove at Fagali’i (Figure 4). If this mound was located in the centre of another capital in the world it is likely that it would be a prominent archaeological visitor site and that the current settlement on top of the mound might be called into question.

Figure 3. Photo of Lauple mound in 1965 (photo: courtesy of William Dickenson).
Since there is published information about the mound and its physical form is rather intact, I have come to contemplate why there is a lack of general knowledge about the site among contemporary Samoans and why, when it is known, it is regarded as a natural hill. Buist who made a survey of archaeological sites in Savai’i in 1966-67 writes the following;

For most Samoans there is only one time – the immediate present. Apart from stories and legends of the past, of which a majority of the people seem to have some knowledge, there is no sense of history. Abandoned villages on plantations to which wide disused roads lead, may have no names or history of occupation; concentrations of house platforms in heavy bush are not known or recognised as villages of the past; adzes and large flakes or broken adzes lie around rock platforms of present day houses, unrecognised as to’i ma’a (stone adzes); features obviously of recent origin are said to be very old. This is no criticism of Samoans, but an introductory explanation to the difficulties of the interpretation of the field evidences (Buist 1969: 35).

It is more than 40 years since Buist made his observations and what he is describing is a ‘memory society/milieu’ or using the terminology of Pierre Nora “milieu du mémoire” (1989). The obviation and/or
The research focus on the visible built environment, especially large scale sites of durable materials such as stone and earthworks, is a long standing tradition in Archaeology. Several theoretical approaches have centred on these types of grand physical expressions in relation to explaining social organisation and migration patterns (Renfrew 1974; Bradley 1998; De Marris et al. 1996 etc.). Theoretical approaches to Pacific monuments and their relationship to social organisation have been investigated by Kolb (1994) and Clark and Martinsson-Wallin (2007).

As an archaeologist who enquires into the long durée of monuments in Polynesia (Martinsson-Wallin 2000, 2004, 2011a, b), my research questions about the Samoan mound(s) are several. I take a contextual or holistic approach to chronology and the past human socio-cultural relationship to the natural environment, as well as exploring why
prehistoric material culture, especially of this impressive magnitude, is not known or considered valuable in contemporary Samoa. When investigating these sites I use the *milieu* concept (e.g. *mi*=mid *lieu*=place), a French word for environment which incorporates both natural and socio-cultural aspects. My research interest in the mound building tradition in Samoa began on account of research on ancient large stone monuments in a global perspective but specifically on monumental ceremonial sites in East Polynesia, especially Rapa Nui (Martinsson-Wallin 1994, 1998, 2000; Martinsson-Wallin and Wallin 1999; Anderson et al. 2002; Wallin and Martinsson-Wallin 2008; Wallin et al 2010; Martinsson-Wallin et al. 2013). To be further informed on Polynesian ceremonial sites and the relationship of East Polynesian monuments to the mound building tradition of West Polynesia, we made a case study and archaeological excavations at the large Pulemelei mound in Savai’i in 2002-2004 (Martinsson-Wallin 2007). We had several research questions related to the mound including its temporal status and use and re-use. An important part was also devoted to training students and locals in Archaeology and Cultural Heritage Management (CHM), with the aim to benefit the local community. In the wake of the archaeological investigations I was invited to the National University of Samoa (NUS) to aid in the development of university courses in Archaeology and CHM. These actions have been sponsored partly by a so called Linnaeus-Palme exchange (2005-2013) supported from the Swedish International Development Cooperation Agency (SIDA). In 2012 Archaeology became a major at NUS due to the actions of Associate Professor Penelope Schoffel and Lecturer Tautala Asaua Pesa at the Centre for Samoan Studies. To popularise and enhance understanding of the discipline, the Vice Chancellor Professor Asofou So’o at NUS, invented a Samoan word for Archaeology - *Tala eli* - which literally means “stories from the soil”.

The archaeological investigation of Pulemelei mound and surrounding large scale prehistoric settlements (Martinsson-Wallin 2007), paired with data on smaller mounds from Janet Davidson’s and Roger Green’s excavations in the 1960s (Davidson 1974: 225-226), shed general and specific light on the dating and structure of mound building in Samoa. Only a few large scale prehistoric square or rectangular mounds are to be found today in the Samoan landscape. The largest ones being: Pulemelei stone mound in Savai’i, situated in the extensive
prehistoric abandoned settlement at Letolo plantation in the Palauli district; the Laupule and Tapuitea mounds at Fagali’i in Apia, Upolu; and the Sa’anapu mound in Sa’anapu-uta on the south side of Upolu (Figure 1). A few other rather large but not so high mounds of soil and stones have been reported in Upolu at Mulifanua plantation, Leulumoega, Moamo, Tanumalala and Vailele (Hougaard 1969; Davidson 1974: 225-227. In Savai’i Buist (1969) report eleven large mounds with dimensions of 100 feet (c. 30,5m) or more which are distributed in, Ologogo district (at Sasina, Paia, Faletagaloa villages), Sagone district (at Fagasavai’i village), Lata district (at Lata-i-uta plantation), Fagamalo district (at Safai village), and Tuasivi district (at Sapapali’i and Tuaula villages)(Figure 2 and Table 1).

Janet Davidson discusses this mound building tradition and concludes that there are few very large mounds and that it is arbitrary what could be claimed as mounds and platforms and that many mounds have superimposed structures and a complex construction history (Davidson 1974: 25-26). Buist, who made a field survey of archaeological sites in Savai’i, made a division of small and large mounds and stated that the latter being 100-200 ft (c. 30.5-61 meter), c. 1860m² at the base and rise 8-10 ft (2.4-3 meters) with sloping sides, c. 3720m³ (Buist 1969: 39). According to Buist (1969: 55-57) there were eleven securely measured such mounds found during the survey in Savai’i (Figure 2, Table 1). Subsequent research by Jennings et al. (1982) defined “large mounds” as having basal area of 750-1000 m², while Asaua (2005: 45) defines “large” as >1300m² and 4500m³. Pulemelei stone mound is estimated to be 17000 m³ and Laupule earth mound 45000 m³, and in comparison to other mounds they stand out.

From a structural point of view two types of mounds are the most prevalent in Samoa and in the West Polynesia area; one with an irregular shape and protruding arms which were probably used as pigeon snaring mounds (tia seu lupe). Such mounds are found both in Independent and American Samoa (Herdrich 1991; Martinsson-Wallin and Wehlin 2007). Tonga has similar mounds for the same purpose (sia heu lupe) but they are generally rounded stone heaps with flat tops and a circular central pit (Burley 1996). One of the larger known star mounds is found on the highest hilltop in Manono, which currently is mapped and investigated (Sand 2013). The other type of mound is of a rectangular or squared truncated shape with sloping sides built of stone.
and/or soil. This type is probably related to chiefly houses/ritual/burial sites in Independent Samoa and such large structures have not been reported in American Samoa. In Tonga it is clear that the stepped *langi* mounds/platforms, bordered with cut limestone slabs, house chiefly burials (Clark et al. 2008 and see Clark this volume). Lower rectangular mounds found in Tonga, often with backrests, are so-called *esi* mounds, which probably functioned as sitting mounds for chiefs (McKern 1929; Clark and Martinsson-Wallin 2007: 37 and see Clark this volume). A few larger scale mounds are also found in Niue (Anderson and Walters 2002), Rotuma (Ladefoged 1992), Wallis (Uvea) (Sand 1998) and Futuna and they are tied to chiefly power.

The Pulemelei investigation showed that this truncated stone mound was initially built around AD 1100-1300 as a c. 60x50 m and 3 m high platform, and that it was built on top of earlier settlement with activities dating back at least 2000 years in time (Martinsson-Wallin et al. 2007: 57). It is part of an extensive settlement in the Palauli area on the south side of Savai’i (Figure 5).

![Figure 5. East side of Pulemelei mound during the clearing and excavation of the surroundings in 2003 (photo: Helene Martinsson-Wallin).](image)

The mound is situated uphill c. 1,5 km inland in a high position and faces a passage in the reef. When standing on the top of the mound it is possible to have an overview of Apolima, Manono and Upolu. This can
be interpreted as indicating that the person or persons who had control over the mound also had control over who approached Palauli from the sea and other islands. When the mound was cleared the approach from the east required walking on one of the two main roads/paths (fuiala) in the large settlement extending from the river crossing close to the sea to the interior. When approaching from the south, the stone masses of the mound are imposing and overwhelming. On the other hand just to the north, uphill from the mound is a two meter high and c. 20x 20 meter large platform from where one has a clear view of activities on the the top of the mound and there is a raised pathway connecting the large mound with this platform. A large umu ti is adjacent to this smaller platform (Martinsson-Wallin et al. 2007: 47-48).

The langi tradition of Tonga is also likely to date back to around the 12th century and thus falls in the same time frame as the construction of the earliest stage of Pulemelei (Clark et al. 2008). The relationship between these traditions is not clear but interactions of various kinds in the West Polynesian area between Tonga, Samoa and Fiji are indicated both in oral traditions and in the material culture (Clark and Martinsson-Wallin 2007: 36). In the investigation of Pulemelei mound we ascertained that it had been outlined with larger slabs set on edge similar to the Tongan langi building tradition. A litofaga (a re-location of the bones ceremony) was carried out prior to the large scale excavations of Pulemelei site in 2003 (Tamasese 2007) but it has still not been established if this structure houses graves like the Tongan langi structures. A georadar investigation of Pulemelei has, however, ruled out that there are hollows for burials in the centre of the mound, but at the bottom there is indication of a small mound but no vault as such (Clark and de Biran 2007: 65).

Within the boundaries of Letolo plantation located in the southern part of Savai‘i, where Pulemelei mound is situated, a survey of archaeological features was conducted in 1977-78 by peace-corps volunteer Gregory Jackmond (n.d. Auckland University). Besides the large mound this survey revealed remains of an extensive prehistoric abandoned settlement with a multitude of stone platforms/mounds of various sizes which probably constituted house platforms and other features, such as raised rim ovens, walls, fences and paved pathways etc. Survey work of prehistoric remains has also been carried out by Jennings and associates at the plantation site at Sapapali‘i in Savai‘i and
at Mount Olo in Upolu (Jennings et al. 1976; Jennings and Holmer 1980). The results of these surveys, paired with excavation data by Green and Davidson (1974) at Falefa’a valley, has been analysed concerning the settlement pattern by Jennings and Holmer (1982) and subsequently discussed by Green (2002). Jennings and Holmer (ibid) suggested that the pre-European settlement pattern was similar to the contemporary one and consisted of household units (HHU) for the extended family with several square house platforms delimited by fences and walkways. A number of such HHU made up a village ward (pito nu’u) and several of these wards made up the village (nu’u) centring around a community house fale tele situated on a rounded/oval platform and an open community ground malae within the village (nu’u) (Holmer 1980: 93; Jennings and Holmer 1982). Green (2002) is of the opinion that the underlying structure of this settlement pattern is tied to the development of Ancestral Polynesian Society (APS), which is considered to have developed in Samoa and Tonga. Further investigations are needed to ascertain if there has been an unchanged settlement pattern during the past 3000 years in this area. Further investigations of the Palauli settlement area(s) could provide detailed information on this issue. Another large scale element of the built environment in the form of a large star mound situated on a hilltop has been re-exposed by recent survey on the island of Manono and it appears that this is part of a fortification site (Sand et al. 2013). Other sites with modifications of hilltops and the erections of walls have also been interpreted as fortification sites, as for example in Luatuanu’u (Davidson 1969: 185-200). Star mounds have been indicated to be a type of site that developed during the last 300-500 years or so (Martinsson-Wallin and Wehlin 2007).

Prior to the Laupule investigation there was really only the Pulemelei investigations that had been carried out at large mounds in Samoa. That is why we considered it essential to make further case studies to retrieve archaeological data to draw in-depth conclusions on when and why large scale mounds were built and if this activity could be placed in relation to the rise of a stratified society as indicated by the coming together of four important titles to form the Tafa’ifa held by one person. This is the background for the investigations at the Laupule mound which was carried out as a field school for students attending the archaeological program at NUS during a couple of weeks in December
Another aim of the investigation was to create awareness of the great cultural significance of this ancient sites and the need for protection and management of the few relatively intact large and visible archaeological sites that currently can be found in Samoa. There are great possibilities to transform these places into important visitor sites and bring to light the cultural significance of these monuments, to broaden and reinforce the cultural tourism of the State and various local communities, alike.

RESEARCH HISTORY OF LAUPULE MOUND:
Andrew Thomson and Derek Freeman visited the mound in the 1920s and 1940s respectively. These scholars measured the mound and collected oral accounts which related to the mound and the immediate area. Laupule mound was described as a large truncated pyramid of earth situated at Fagali‘i, Vailele by Andrew Thomson in 1927. He writes that:

> About four miles northeast of Apia in Vailele plantation is an imposing but only slightly known earthwork referred to in land titles as Maota Pulemanava” (Thompson 1927: 118).

Thomson further described that to the westward of the mound was a hollow, which could have been a hill where some of the earth of red loam making up the mound may have come from. Thomson suggested (1927: 120) that the purpose of the mound was to serve as a barrier to an attacking force since it is situated on a narrow neck between the precipitous banks of the Vaivase and Fagali‘i streams. An oral account indicates that it was an elevated platform where the Tongans had their houses. Yet another legend states that a high chief of Saleupolu called Pulemanava ordered his followers to build this mound for him to set up his manor house (maota). Thomson also discussed (1927: 121) that the building of the mound would have necessitated a large work force and that the number of people in the area must have been a lot more extensive in ancient times than in the 1920s.

Derek Freeman surveyed, mapped and discussed eight large mounds found three miles (4.8 km) east of the township of Apia located close to Tausala [Fagali‘i] stream (Figure 6a). He described that:
...seven of the mounds are truncated, regular pyramids of earth but the eighth is a truncated, conical mound of earth and stone (Freeman 1944: 145).

He considered the latter to have a different origin than the rest. The most impressive, Laupule mound, which according to Freeman measured c. 346 x 314 feet (105.5 x 97.5 meters) at the base and c. 190 x 143 feet (58 x 43.5 meters) on the upper surface and c. 40 feet (12 meters) in height. Freeman does not agree with Thomson that a hill originally was standing here, and suggests that the pathway made in the mound, which commences in the north eastern corner of the base and proceeds at an easy grade to the top (see Figure 3), estimated by Freeman to around six feet (1.8 meter) wide, seems to be an original feature.

There are three other large size mounds close to Laupule, two in the front towards the sea, and one in the rear toward the Fagali’i stream. The two in front are according to Freeman situated 90 yards (82 meter) from Laupule and the easternmost is c. 151 x 114 feet (46 x 35 meters) and the westernmost is c. 152 x 114 feet (46.5 x 45.7 meters) but both are only c. 7 feet (2 meters) high. The mound in the rear of Laupule was 190 x 139 feet (58 x 42 meters) and 12 feet (3.6 meters) high but much more eroded than the others.

On the east side of the Tausala [Fagali’i] stream three other larger mounds are situated. All three of them are, according to Freeman, called Tapuitea mounds (evening star) (Freeman 1944: 147). The largest is c. 384 x 235 feet (117 x 71.5 meters) but only 15 feet (4.5 meters) high. Just adjoining this mound on the seaward side is a 238 x 139 feet (72 x 42 meters) large mound c. 13 feet (4 meters) high. The third Tapuitea mound is further to the south east and its base measurements are 165 x 128 feet (50 x 39 meters) and 12 feet (3.6 meters) high. The area where the Tapuitea mounds are located has been subdivided by the Government into lots during the last decades and modern houses are today situated on top of them. Thereby the mounds have been levelled out and they are only partly visible today. The largest of the Tapuitea mounds is still visible in the western end of Doctors road on the lots 1920 and 1921.

Freeman states (1944: 148) that he got the information about the mounds from the orators (tulafale) and chiefs (ali’i) of Saleupolu district. He also notes that in ancient times this district was a single
community called Saleupolu, but in the 1940s these were two separate
villages Vailele and Fagali’i. Saleupolu was according to Freeman’s
informants once very large and consisted of “one hundred fuiala or
village sections” inland on either side of the Tausala stream (ibid 1944:
149). The informants also stated that the rectangular mounds were
created during the era of the famous chief Tupuivao (ibid 1944: 148) c.
250 years ago. Furthermore they recounted that Tupuivao’s mother
Taufau was the grand-daughter of Salamasina of the Tui A’ana line
whose mother Vaetoeifanga, was the daughter of the king of Tonga. This
Salamasina came according to Samoan oral history to hold the four titles
of Tui Atua, Tui A’ana, Taimasoali’i and Ngatoa’itele, which together are
known as Tafa’ifa (Davidson 1967: 28). Freeman notes that titles are not
necessarily a hereditary right but also given by the districts. Taufau, the
mother of Tupuivao, only received the Tui Atua and Tui A’ana titles.

Oral tradition also gives the account that Taufau on her death bed
deprived Tupuivao of her two high titles and instead gave them to her
nephew Faumuina (Freeman 1944: 150). Tupuivao had strong claims on
these titles but also to the titles of Tamasoali’i and Ngatoa’itele. It is
likely that he aspired to the Tafa’ifa title and thus war between the
cousins followed and finally Tupuivao was defeated and took refuge to
the island of Tutuila. According to Freeman’s informants the chief
Tupuivao was known for his great cruelty and his name was
synonymous with despotism, tyranny and cannibalism (ibid 1944: 149).
The name of the mound Laupule is interpreted as; power or to command.
As to the purpose of building the mound, according to Freeman and his
informants (ibid 1944: 150), Tupuivao erected it to build his house on
top as a symbol of power. Te Rangi Hiroa (1930: 66) mentions that the
height and size of the paepae (house platform) that the fale (house) was
erected on, was one way of expressing the hierarchy of rank. The
Tapuitea mounds on the East bank of the Tausala (Fagali’i) stream were
said to be used by Tupuivao’s warriors (ibid 1944: 150).

According to Freeman (1944: 151) all village units’ form districts
together with other village units, which have a malae (community
ground) and fono (council of chiefs) and these districts together with
other districts owe allegiance to a High Chief.
On Upolu these would be the titles of Tui Atua, Tui A’ana and Malietoa. Today the two villages of Vailele and Fagali’i, which were known formerly as Saleupololu, are part of the Vaimaunga district, which owes allegiance to Malietoa. This was, according to Freeman’s informants, different in ancient times when the people of Saleupolo only owed the allegiance to their own high chief Salima, who lived three generations before Tupuivao.

The Vailele survey was carried out by Roger Green in the 1960s (1969: 98) (Figure 6b). He recorded 110 sites made up of small to medium house platforms of earth c. 5-10 m mainly. He also mentions the Laupule mound and gave the mounds site inventory numbers. Based on genealogies worked out by Green (1969: 102) Tupuivao built this mound around AD 1615-1640.

**Test excavation in 2010**
The mound is situated in Tuamasaga district, Fagali’i-uta, a subdivision of parcel 1146, on lot no. 2984. The mound was visited by Martinsson-Wallin in 2005 to investigate possibilities to research and excavate at the site. In 2010 we were granted permission by the landowner Afioga Faamausili Papaalii Moli Malietoa to make a test excavation and mapping of the mound. It was carried out as a field school during two weeks (course HAR 200 at NUS) with archaeology students from Samoa and Sweden. The measurements of the structure are 105 x 95 meters at
the base, 58 x 44 meters at the flat top and it is 12 meters high; making up a c. 45000 m$^3$ large mound.

**Aims with the archaeological investigation:**

1. To compile the research history of the mound and carry out mapping of Laupule and the two lower mounds to the seaward side of Laupule to compare with Thompson’s and Freeman's measurements and maps.
2. To obtain material to date the mound with archaeological methods.
3. To investigate how the mound is constructed, if it is built in several stages and if it is made up of mainly soil, and thus suited to the use of ground penetrating radar for future investigations.
4. To investigate if there are indications of cultural activities at this site prior the building of the mound.

![Figure 7. Mapping of Laupule mounds and excavated trenches.](image-url)
Two 1 x 3 meter test trenches were outlined at the base of the mound on the North side. Trench 1 was placed in an N-S direction on the slope of the mound. Trench 2 was outlined in the Northwest corner in a NE-SW direction (Figures 7). Two additional test trenches (3 and 4) 1 x 1 m, were outlined on the North Slope. Trench 4 was excavated close to the top and trench 3 halfway to the top (Martinsson-Wallin 2011c.).

Figure 8. Trench 2 dispersed platform with post hole (photo: Helene Martinsson-Wallin).

Figure 9. Edge part of type IV adze (photo: Helene Martinsson-Wallin).

Figure 10. Section of trench 2.
The preliminary results

- The mound seems to be built up of soil mainly but shows layering of softer soil/clay/gravel and a few larger stones c. 40-60 cm in size.
- The soil was probably brought from the banks of streams to the east and west, but the western gully probably provided most of the soil. This has altered the landscape and enhanced the gullies with the mound in the middle making this a perfect place of defence.
- Cultural activities were found when we excavated trench 2 in the north-west corner of the mound. These remains are probably from the time of the construction of the mound or just prior to it. The edge of a type IV basalt adze (Green and Davidson 1969:24) and a dispersed platform with indications of postholes and charcoal was found. Too little dateable material was retrieved to enable reliable radiocarbon dating.
- Further investigations are recommended and should include georadar/magnetometer and extension of trench 2 to obtain more material for archaeological dating.
• The Laupule and Tapuitea mounds are significant ancient monuments of great cultural value. These sites should be incorporated into the database (worked out by Ministry of Natural Resources and Environment MNRE in 2010) of sites of high cultural value in Samoa. Further scientific work should be carried out in collaboration with the landowners and the National University of Samoa and thus also provide training for students of Archaeology. A management plan to protect and preserve this site should be worked out between the state and the landowners which also should include a plan to make Laupule and adjacent lower mounds a visitor site.

MONUMENTS AND PEOPLE – SOCIAL AND CULTURAL PRACTICES IN THE BUILT LANDSCAPE OF INDEPENDENT SAMOA.

The Past
Independent Samoa has c. 3000 years of human history. It is not known if the initial settlers built large mounds or other monuments of stone and soil but the few archaeological investigations here and on neighbouring West Polynesian islands do not indicate that monument building took place until the 12th century (Martinsson-Wallin 2007; Clark et al. 2007). Three large mounds have so far been involved in research of the mound building tradition in Samoa. The Pulmelei mound is probably the most significant and to date the best researched (Martinsson-Wallin 2007). Initial archaeological research has been carried out at Laupule mounds (Martinsson-Wallin 2011c). The Sa’anapu mound has been cleared due to the attention drawn to the place by a film documentary in 2007 made as an assignment by student Steven Percival in Martinsson-Wallin’s course in Archaeology (HAR 100) at NUS, and due to private initiative by the landowners. Mapping and archaeological investigation have so far not been carried out but we have made several excursions with students and colleagues over the years and the local community is trying to make this place into a visitors site.

The Pulemelei case indicated that a previously utilised site was chosen to build a large mound around the 12th-13th century. The slabs
on edge making up a sort of outline frame of the structure were detected at the bottom layer. This could indicate that this is the work of Tongans, and thus equivalent to the stone work making up the *langi* structures. However, at Pulemelei the slabs on edge were of basalt stone and the *langi* stones are mainly of beach rock. The platform/mound at the bottom at Pulemelei which was detected by the use of geophysical analysis, should not be ruled out as containing a potential burial vault. This could tie Pulemelei to the *langi* tradition but so far no direct evidence confirms this (Clark and Biran 2007). Excavation at the so called “Tongan wall” a kilometre up-hill from Pulemelei by us in 2004 (Martinsson-Wallin et al. 2007: 57) indicates that this feature is contemporary with or even slightly older than the initial Pulemelei platform. This could point to a Tongan connection but alternative interpretations could also explain the name of the wall.

The current research shows that there are two main types of large mound; the irregular pigeon snaring mounds (*tia seu lupe*) usually at inland locations, and probably dating within the last 300-500 years; and large scale truncated mounds making up high raised platforms with slanting sides with dates going back 700-900 years. The former, with slight differences in outline and shape but similar use, exists on various islands in West Polynesia, especially in Tonga, Independent Samoa and American Samoa and are tied to the chiefly sport of pigeon hunting. Large truncated mounds exist as chiefly burial mounds, *langi*, in Tonga and a few other large scale mounds found on other West Polynesian islands usually related to chiefly power. The largest two are found in Independent Samoa and are almost non-existent in American Samoa. Additional sites to the ones found today could have existed but have been destroyed. However, if additional really large scale sites existed, it is likely that the memory of these would have been preserved in some way either in oral traditions or as ruined physical structures. One such site which was partly destroyed and probably had some antiquity was found by us in 2007 at Vaiosu-uta, and subsequently totally removed due to the expansion of the township. Another large scale site is the platform at Sapapali’i and at Mulifanua surveyed by Jennings team (Jennings et al. 1976; Jennings and Holmer 1980, 1982).

Archaeological investigations to date place initial building of larger mounds to 700-900 years ago and it is not unlikely that this coincides with the expansion of Tongan rule and population increases at certain
productive or in other ways important sites in Samoa. A population increase usually influences the emergence of hierarchies and a more complex society.

It is likely that both the addition and modification of Pulemelei, that our archaeological investigations indicated to have occurred 400-600 years ago, and the building of the Laupule and Tapuita mounds has connections to the Tafa’ifa title. Meleisea discusses (1995: 19-36) that Samoan society was more hierarchical during this time than later on, which is also something that could indicated by the cultural practice of building mounds. There is a possible relationship between large scale mounds and Tongan influence, the Tafa’ifa title aspiration, population increase, as well as multiple uses of highly visible sites for exercising and displaying chiefly power and places for defence and ritual activities. Oral traditions generally discuss all mounds found in the bush as pigeon snaring mounds (tia seu lupe). This means that the large truncated mounds and their use as house and ritual platforms attached to chiefly power have been subjected to oblivion. It is not certain but highly likely that this oblivion could be an active choice due to ambivalence to the Tongan connection as well as the introduction of Christianity. The lack of sense of history among contemporary Samoans, as Buist argues (see above), might be a phenomenon tied to the contact era. The mega scale built environment tied to power and ritual use of the past could actually instead be interpreted in the terminology leiux the mémoire (Nora 1989), as memory places which are tied to a sense of history but a history that subsequently has been forgotten and hidden away.

The present
The conception of prehistory and its built environment is weak in contemporary Samoa. The key factors identified for this weak position are: firstly, the strong Christian influence which questions the pagan past in Samoa, especially sites of ritual/ceremonial importance; secondly, the complex relationship to the Tongans; thirdly, that Samoa can be identified as a “memory society/milieu” or at least in-between a memory society and a history society where the extended family relations are more important than the State. The information about prehistoric Samoa and its built environment is almost non-existent in the curriculum at primary or secondary level education in Samoa (Bornfalk-Back 2008). Oral tradition is considered as explaining Samoan
society. There are only a few popular accounts of archaeological features made available to the general public – the first includes two short documentaries made by us in collaboration with documentary film maker Steven Percival in 2007 on the mound in Sa’anapu-uta and the Fale o le fe’e (house of the octopus) in Magiagi. Secondly, an initial museum display on Samoan prehistory was worked out by Martinsson-Wallin and students in 2011 and re-furbished in 2013. These presentations have been part of the Linnaeus-Palme exchange and have involved student participation. The re-furbishing also involved collaborations with the staff at the National Museum of Samoa (Fale Mata Aga).

In contemporary Samoa there is no coherent legal protection or management praxis tied archaeological or historical sites. The cultural practice does not include the built material culture of the past but instead a strong focus is on the current built material culture, especially in the form of erecting new church buildings. In the Cultural Policy 2010, culture heritage is defined as; aganu’u (extended family) relationship and adhered cognitive and materialistic values as material goods as fine mats (‘ietoga) and bark cloth (siapo), the art of tattoo (tatau). This also includes food such as the coconut (nu’u), roasted pig (pu’a) and boxes of tinned fish, making the Sunday lunch in the umu (tonoahi), presenting and exchanging gifts (so’a), the customary land practice and the chiefly system (mata’i system) as well as oral traditions and the language with a high and a low language. These phenomena are stated as very important in contemporary Samoa and are placed under the label of fa’a Samoa, the ‘Samoan way of doing things’ e.g. the Samoan cultural practice. The focus is on protecting and managing this cultural practice, which actually changes and is influenced by modernisation and globalisation and in many ways can’t be protected and preserved. The protection of historical cultural material remains e.g. the relationship to large prehistoric mounds are not a major focus but something seen as alien and pagan and tied to Western cultural management practices and lifestyles. The oral traditions are important and have been collected in official volumes (Samoa Ne’i Galo) by the Ministry of Education, Culture and Sports (MESC) since the early 1990s. In doing so a History of Samoa is written down and the transformation (or re-transformation) of the society from a Memory society to a History society has begun. A survey carried out as a part of a Master’s thesis using a reference group of
youths at Samoa and Leififi Colleges and workers at a factory in Apia (Hannikanien 2013) showed that among these groups oral traditions are becoming less known and decreasingly important. The reason for this is probably due to modernisation and globalisation and the importance placed on family issues. The *siapo* have in many instances been replaced by cloth (e.g. lace at funerals etc.) and the coconut replaced by wine or beer, the roasted pig by tins of corned beef and money is now circulating as gifts, and redistributed. The fine mats (*‘ietoga*), the chiefly *matai‘i* titles, (however currently split, devaluated and contested), tied to land and the customary tenure system, and the gift giving systems are still important parts of the *fa‘a Samoa*. There have been initiatives and demands recently from the public to create a Heritage law and a Heritage Board but the suggestions remain ‘toothless’. The public interest in preserving monuments from the past was triggered by the PM’s decision to tear down the traditional Fale Fono building, situated on the important Mulinu‘u peninsula close to the Government building and Lands and Courts house. The Fale Fono was the traditional house where the declaration of independents and the constitution were signed in 1962. The tearing down of the building was done just in time for the 50 year celebration of independence, since the building according to the PM was *ugly and unsafe* (Samoan Observer March 8-10 2012). This action triggered many protests and public demands to appoint a law reform commission to create a Heritage law and Heritage Board.

**CONTEMPLATIONS**

There are several considerations to make when studying and interpreting the temporal status and meaning of the prehistoric mounds in Samoa. The cultural practice(s) is (are) tied to landscape utilisation and modification as well as inter- and intra-island interactions. This should be investigated further in the form of archaeological dating and survey of sites in Samoa and beyond and be paired with spatial and agent based GIS modelling studies to understand cultural practices at various temporal scales to reach a deeper understanding of the role, emergence and relationship of these sites. Other considerations in relation to the past built material culture include current cultural practices and how these are tied to relationships, perspectives and values that do not include the management and protection of the
prehistoric and historic built material culture to any great extent. This makes the idea of the value of research on these sites weak and the protection and management of these sites is not seen as a priority. However, with infrastructural changes and globalisation, including an intensification of inland agriculture, it is evident that built prehistoric and historic material culture is in danger of being lost. The consequence down the line is a loss of important parts of Samoan culture and ultimately this is an erosion of identity and sense of belonging as well as the risk of losing an asset which could generate income to local communities and the State in promoting cultural tourism. The few large monuments of Samoa and their contexts should be subject to further investigation as well as protection and management for the benefit of Samoans in various ways.

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Fa’afetai lava

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MONUMENTALITY AND RITUAL BEHAVIOUR IN SOUTH POLYNESIA

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Abstract: The prominence of archaeologically-recognizable ritual monuments in East Polynesia and their virtual absence in South Polynesia, a region colonized from East Polynesia, requires explanation. Circumstances contingent upon the timing of colonization, or the resources available in South Polynesia have been proposed as significant, but it is argued here that the pa (fort) complex included important ritual functions which could not be separated safely, and represented monumentally in the open landscape, in prevailing conditions of low population density and endemic warfare at familial and clan levels of social organisation. Only at around the period of European arrival were those conditions changing in northern New Zealand and beginning to manifest separate monumental ritual structures.

INTRODUCTION

The student of Maori lore looks in vain for any evidence of the use of temples, altars, or any elaborate or permanent erection used in connection with religious ceremonial in former times (Elsdon Best 1976: 272).

Although early ethnologists of Maori culture, such as Elsdon Best, conceded that very small or temporary ritual structures were built occasionally, they saw nothing comparable to the ahu-marae religious structures of tropical Polynesia. The existence of those in islands ancestral to Maori and Moriori thus begged the question of why no tradition of ritual monuments was manifested similarly in South Polynesia (New Zealand and its outlying archipelagos).

Current answers are insufficient. Beaglehole (1955: cxci) put the New Zealand absence of marae in the East Polynesian fashion down to “the lack of an easily-worked stone” which is untrue and would hardly have prevented construction of marae from the almost ubiquitous water-rolled cobbles, as occurred in the Society Islands. The more common answer is that South Polynesia was colonized, and then isolated, before
the advent of monumental ritual features in East Polynesia (Groube 1968: 145; Green 1994: 43). This is probably true but it is not a sufficient explanation, because developmental models of monumental *ahu-marae* assume that those arose from simpler styles which had reached South Polynesia (below), and if ritual features evolved complexly and monumentally in East Polynesia then why not also in South Polynesia? The answer might be that monumental ritual architecture did not develop in Central East Polynesia, but was taken there. The chronology of East Polynesian *ahu-marae* structures suggests that the Easter Island examples date a century or two earlier than those in the Society Islands (Martinsson-Wallin et al. 2013), possibly indicating westward diffusion that never reached South Polynesia. Additionally, Davidson (1984: 171) suggested the New Zealand case might reflect one manifestation of variation in early East Polynesian ritual constructions, and I have contemplated the possibility that formal religion was largely abandoned in New Zealand (Anderson 2007: 43), or simply that observance of it lapsed amongst a highly dispersed population.

In considering the general question, I note that ritual and monumentality are increasingly widening concepts. Numerous social behaviours, including aggressive, obsessive and interaction routines, are described as ritualized, both amongst people and other animals, but in the current context it is prescribed activity connected to notions of social order or propriety by belief in supernatural powers that is the most useful definition (cf. Crosby 2004: 107). Monumentality referred originally, as in the Oxford English Dictionary, to constructions of any size that commemorated significant people or events, or at which ritual or other ceremonial behaviour was enacted. Symbolic of things held as important or sacred, monuments were often built large, and monumentality came to refer to any massive construction, however secular and quotidian, and then, metaphorically, to any circumstance thought impressively notable (e.g. a ‘monumental mistake’). Leaving the last aside, the distinction between significance and size in the two former meanings highlights the character of the monumentality issue in the archaeology of South Polynesia. Monuments to which a ritual significance has been, or might be, ascribed are vanishingly scarce, but monumental structures seen primarily as serving more mundane functions are unusually abundant. How is this contrast to be interpreted,
and what might it mean for a more general understanding of the relationship between ritual and monumentality?

I discuss this matter with reference to South Polynesia in two contexts. First, I deal with European observations up to the early nineteenth century. The introduction of Christianity to New Zealand in 1814, extensive and debilitating ‘musket wars’ amongst Maori 1810-1840, with associated internal migration and displacement, and an immense loss of land through state purchase after 1840, make later observations on the subjects at issue of limited value. Second, I discuss archaeological data, plus ethnographic information which, if seldom explicit about the particular circumstances, at least suggest interpretive possibilities.

**EARLY HISTORICAL OBSERVATIONS**

**New Zealand**

Interpreting monumentality was one of the earliest issues in historical discussion of New Zealand. Substantial palisading was seen from the sea by the crew of the *Endeavour* on 8\textsuperscript{th} October 1769 as “regular paling, pretty high, inclosing the top of hill.” It was thought to be an enclosure for deer, oxen or sheep (Joseph Banks in Beaglehole 1962: 400). Nearly a month later, after several excursions ashore, Captain Cook wrote:

> We have before now observed on several parts of the coast small Villages enclosed with Pallisades, and Works of this kind built on eminences and ridges of hills, but Tupia hath all along told us that they were Mories or places of Worship, but I rather think that they are places of retreat or Stronghold where they defend themselves against the Attack of an Enimy as some of them seem’d not ill design’d for that purpose (Beaglehole 1955: 191).

These were *pa*, or *Hippa* as heard by Europeans (i.e. ‘He pa’ = a pa), comprising palisaded earthworks of ditches and terraces. Although Banks (in Beaglehole 1962: 421) observed only rudimentary habitations in *pa*, except for one large, carved house under construction at Tolaga Bay, the *Endeavour* journals called them ‘fortified villages’ or ‘fortified towns’, implicitly dismissing Tupaia’s opinion. Beaglehole (1955: 191, note 1) wrote of this that, “Cook was a better judge than Tupaia, but
knowing the *marae*-building habits of the Tahitians and Society Islanders, we can follow the working of Tupaia’s mind.”

This judgement is hardly fair. Tupaia, after all, was the only person on the *Endeavour* who could talk directly with Maori and he had done so at length along the eastern seaboard on the North Island before early November 1769. Cook later remarked that “Tupia always accompanies us in every excursion we make and proves of infinite service.” (Beaglehole 1955: 240). Tupaia was, furthermore, trained in Society Islands religious lore and often spoke explicitly about such matters with Maori. If he persisted in calling these structures *marae* then he probably had a reason for doing so. The simplest and most probable explanation is that he asked Maori where their *marae* were located and was told that they were in the pa. He would have observed, as did Cook and Banks, that Maori habitation was generally mobile and dispersed. There were fishing settlements along the shore and gardens with rudimentary shelters in the valleys, so it was only occasionally that pa were fully occupied. It would have made sense to Tupaia that, in the manifest absence of *ahu* or *marae* elsewhere in the landscape, gatherings at the pa involved religious observance.

This was all the more likely as Tupaia found that Maori religious beliefs agreed in general with his own, although he thought himself “much more learned” (Beaglehole 1955: 420). His disquisitions on the subject enthralled Maori listeners but they disclosed little about their particular practices in return, and Cook, doubtless following Tupaia, concluded that, “with respect to Religion I believe these People trouble themselves very little about it” (Beaglehole 1955: 286). He never saw anything or any behaviour that suggested religious practice. Banks thought that there must be places of religious observance but all he saw was a small square of garden soil, bordered by stones, in which was set a wooden spade with a basket of fern roots hanging from it: an offering, he was told, for the success of the surrounding crop (Beaglehole 1962: 458). He agreed with Cook that Maori had, “no publick places of Worship” (Beaglehole 1962 (II): 34).

Other early observers concurred implicitly. Officers on the *St Jean Baptiste* under De Surville, 1769, remarked that religious notions were suggested by the wearing of the jade neck ornament (*hei tiki*). Asked about this Maori responded by “joining their hands together and raising their eyes to the sky.” (De L’Horme, p. 135 in Ollivier and Hingley 1982).
Yet, as one of Du Fresne’s officers remarked in 1772, “if these are idols they had better have great confidence in them because they trade them willingly” (Le Dez in Ollivier 1985: 331). Carvings on house posts and canoes also appeared to have some ritual significance but no ritual activity or ceremonies were observed in relation to them.

Insofar as ritual activity was observed it consisted of morning and evening prayers, addressed respectively, Savage (1807) thought, to the sun and moon, as well as supplication to an unspecified atua (deity or spirit) and observance of restrictions related to the virtually ubiquitous existence of tapu. The missionary, Samuel Marsden, wrote in 1815 that he saw no evidence that Maori, “had any graven images or likenesses of any heathen deities... [and that]... they consider their God as an intelligent spirit or shadow” (Elder 1932: 116). Additional evidence indicates that while the usual Polynesian deities were well-known, the atua which affected the lives of people were regarded as spirits of their own ancestors. These, beneficent and malign by turn, remained in their own territories, supervising the behaviour of their descendants. They had no interest in slaves or others who came from elsewhere, and they were not worshipped. In some districts, people kept;

... in their houses small carved images of wood, each of which is dedicated to the spirit of an ancestor of the family who is believed to enter into its substance, on particular occasions, in order to hold converse with the living. These images are not objects of worship, nor are they held sacred as possessing in themselves any virtue; but merely because they have been in close contact with an Atua (Shortland 1856: 83).

These historical data, and much besides, place the practice of Maori religion exclusively within a personal or familial space. Each clan and family had its own atua to whom the senior men and women were thought especially close, and thus tapu – from which ensued various ritual restrictions in matters of eating and other domestic activities. In addition ritual specialists (tohunga), were family or clan members, and indeed were required to be because atua would only commune with their own descendants (Shortland 1856: 103-113, 126-128).

The historical observations also seem to rule out the existence of any monumental ritual or religious structures, but they do not do so entirely.
There is one explicit account, by Crozet in 1772, of a type of monumental structure, almost certainly a *marae*, which was found within at least some *pa* in the Bay of Islands, northern New Zealand. He describes the interiors of pa generally as consisting of two rows of houses, cooking sheds and other domestic structures, set either side of a space that;

...serves as a sort of parade ground, and extends the whole length of the village. This parade ground is raised about a foot higher than the surrounding ground on which the houses stand ... by means of soil brought there and beaten down.... In the centre of the parade ground is a piece of wooden sculpture representing a hideous figure [in which] the genital parts, occasionally of one sex, occasionally of the other, are represented in greater detail. This piece of carving is part of a huge pile sunk deeply into the ground (Ling Roth 1891: 32).

I cannot find other such accounts and this one may be the exception that proves the rule, but at least it suggests that the *marae* in New Zealand was sometimes conceived as more than just an unmodified space within a settlement (Figure 1). If *marae* occurred commonly within settlements but seldom involved any monumental construction, then the same is true of *ahu* (*tuahu* in Maori) in New Zealand. The migration traditions refer repeatedly to the building of *tuahu* during the colonization era, and their use in establishing priority of discovery, as in this account of land appropriation by the *tohunga* (priest), Ngatoroirangi, who arrived on the *Arawa* canoe. As he travelled, he built *tuahu* from branches and other green timber but,

... then he found the *tuahu* of Tia [another *Arawa* immigrant] and noticed it was still quite green. He therefore built another *tuahu*, quite close, and made sure that the material he used was very dry ... [later Ngatoroirangi told Tia he had arrived first]. Tia disputed this claim and so Ngatoroirangi suggested that they inspect their *tuahus* to settle the argument ... Tia was forced to admit that the *tuahu* of Ngatoroirangi appeared much older than his own and he reluctantly agreed that Ngatoroirangi must have been the first to arrive (Stafford 1967: 17-18).
Construction of wooden *tuahu* is quite plausible, yet no wooden structure of a form reminiscent of an East Polynesian *marae* or *ahu* was observed historically or asserted ethnographically. Instead, as Best (1976: 272) wrote;

...the places set aside as *tuahu*, or sacred places, were in some cases, apparently, not marked in any way. Sometimes a rough, unworked stone, or several such stones, were set up at such a place, but otherwise the place would be allowed to remain practically in its natural state. Occasionally, we are told, a small platform of sticks, termed a *tiepa*, was erected at such a place, on which offerings to the gods were placed.

*Tuahu* could also consist of a designated place out in the open, a small heap of earth or unworked stones, a hut or an assigned place within a house, or a small enclosure of posts. Ritual ceremonies were also conducted standing in a particular place in a stream or pond (Best 1976:
These data suggest that concepts of ahu and marae were well-known in New Zealand, but that they involved little or no construction and that, when it did occur, was almost never monumental.

The Chatham Islands

The only outlying archipelago of South Polynesia to retain an indigenous population at European contact was the Chathams, inhabited by Moriori. The first Europeans, under Lt. Broughton of the Chatham, arrived in November 1791 and spent a brief period ashore. They recorded some structures in the coastal forest that were marked by;

...a small circle of clear ground, sometimes fenced in by a simple palisade. In the centre of the circle was the mark of a fire place and a great number of fish shells [molluscan shell] lay about, particularly the ear shell [Haliotis sp.]. This [structure] had no other covering than the growing branches of the trees (Skinner 1923: 27).

These structures were probably temporary habitations (Skinner 1923: 74-75), but palisading and absence of a constructed roof might indicate some other or additional function such as defence or possibly a ritual purpose. No further observations were made of these, or of any other Moriori structures, until some 60 years later in the wake of frequent contact with Europeans and following an invasion by Maori in 1835.

Most information comes from William Baucke, born on the Chathams in 1848 and fluent in Moriori and Maori, and from Alexander Shand who moved to the Chathams in 1855, learnt Maori and obtained much of his information from a Moriori leader, Hirawanu Tapu, born in 1824. Shand (1911: 14-15) writes of fish being thrown on the tuahu as offerings, their heads first being cut off and thrown in front of the tuwhatu, usually a piece of pumice carved in the shape of a human head. Skinner (1923: 61) adds that the head of the first of a group of stranded pilot whales was deposited on the tuahu. Tuahu were used for various ceremonies, such as baptism in which parallel rows of sticks decorated with bunches of grass were erected, the tohunga conducting the ceremony between them. Ceremonies concerning the deity Tiki were conducted by women who;
made figures of birds, twenty or more, neatly carved out of Akeake wood, which they placed in parallel rows [on the tuahu], and at one end of which they set up an image of Rongomai-tuatanga; between the rows were placed the remains of former ceremonies, in heaps. These ceremonies were performed ... generally each year (Shand 1911: 25).

Baucke (Skinner and Baucke 1928: 382-384) was critical of this evidence on ceremony, claiming it to be pretentious and implying that some of it was recent invention by Hirawanu Tapu. Baucke did not accept the existence of Moriori priests; in his opinion, the functions of a tohunga were not separate from those of a family head. Furthermore, his recollection of baptismal rites, otherwise not unlike Shand’s account, does not mention tuahu. In fact he does not refer to tuahu anywhere. Could this mean that there were no structural features identifiable as tuahu; that they were locations known but unmarked? Skinner (1923: 58) suggests otherwise in writing that, “the place at which formal religious ritual was carried out was the tuahu (heap or mound), which was generally the common burial place” implying that a mounded site, also used for burial, was chosen or made for the tuahu. Shand (1911: 184), however, had written of “enormous heaps of skeletons on the various Tuahus” which seems to assign heaping up (the literal meaning of tuahu as a verb) to the accumulation of bones.

It is quite uncertain, therefore, whether any constructed feature marked the location of Moriori tuahu, and certainly no monumental site of that type has been recorded. In regard to other monumental constructions, Skinner (1923: 101) writes that near Wharekauri the earthworks of a Moriori pa can still be seen, but if so it is the only one. Baucke (Skinner and Baucke 1928: 383) was particularly scathing about this assertion.

ARCHAEOLOGICAL AND ETHNOGRAPHIC EVIDENCE

New Zealand

The archaeological existence of constructed tuahu, or similar shrines, in New Zealand relies almost wholly upon one possible example, often mentioned (e.g. Best 1976: 273; Hiroa 1952: 480) of a row of four upright stones found at Hauraki near Puhirua, in the Rotorua district. Cowan (1930: 60) describes this (Figure 2) as a Maori tuahu and writes
that, “the stones set in the ground represent the principal gods of the Arawa tribe, Marute[sic]-whare-aitu, Rongomai, Ihungaru, and Itupawa”, the first two and last being considered gods of war. The source of this information and the age of the structure are not apparent, but it is a plausible example of a rudimentary *tuahu*. Another of this kind, with four stones, is recorded from Te Koutu, near Lake Okataina, also in the Rotorua district (Anthropology Department, University of Auckland).

A single standing stone on the Tamaki Isthmus (Graham 1925) and two standing stones immediately outside a large pa at Aotea probably had some ritual significance and, of course, stone figures, sometimes on small mounds in gardens, offered ritual protection to the growth of sweet potato (Davidson 1984: 171). There are other structures as well which, if not actually *tuahu*, were certainly places of ritual - e.g. the small wooden stage built out into a swamp adjacent to Kauri Point pa, and from which numerous wooden head combs and 14,000 obsidian flakes had been deposited in the swamp. As implements used for managing head hair, these were dangerously *tapu* and needed to be disposed of safely (Shawcross 1976). A site at Mercury Bay, involving a rock carving

![Figure 2. A tuahu near Lake Rotorua. McDonald collection, Dominion Museum, reproduced by J. Cowan (1930: 30). Details in text.](image)
between two natural pools, in one of which obsidian flakes had been deposited, was doubtless of similar significance (Law 1966). Some other features have been described as *tuahu*. One consisted of a truncated pyramidal mound of earth with a hole in the upper surface in which, it was thought, hair and other *tapu* materials were placed. It was in a settlement, occupied in the 19th century (Downes 1928: 165-168). No similar structure is known from pre-European sites.

Areas of stone paving, potentially exemplifying simple ritual structures, have been recorded in early moa-hunting settlements. Teviotdale (1939: 169) found “a neatly-laid stone pavement about fifteen feet square” at Waitaki Mouth and reported that at Warrington Beach moa-hunting site, near Dunedin, “there are some very interesting stone floors of native construction ... the use of which has not been satisfactorily explained so far.” Several laid stone pavements, one of sub-rectangular form 6 m² in area, were recorded at the Heaphy River site and other pavements in various shapes have been excavated at Dart Bridge, central Otago. These, and smaller patches of paving on the perimeters of former hut sites, as at Hawksburn and Glenaray moa-hunting sites (Anderson 1986) have been interpreted as domestic working areas, possibly cognate to the paving associated with *hare paenga* in Easter Island.

The Maori *marae* can be thought more visible archaeologically, if it is defined minimally as an open space within a settlement. Such internal voids, so to speak, can be seen in village settlement patterns from the earliest times, e.g. at Shag River Mouth dating to the fourteenth century where 36 hearths of former houses surrounded a large open space, albeit one on which substantial midden was also deposited at some stage. Rectangular ‘courtyards’ were also seen in small Archaic settlement sites at Skippers Ridge (Coromandel) and Moikau Valley (Wairarapa), and from later prehistory on Motutapu Island (Davidson 1984: 163) and in the lake village at Kohika (Irwin 2004: 244). There is, however, nothing to indicate whether these relatively constricted spaces were used in secular activities or as ritual spaces, or as both. In the ethnographic sense of a *marae* as having significant ritual significance, Davidson (1984: 163) is correct in asserting that these spaces cannot be considered as *marae*. They might have been but evidence of their ritual functioning, if any, is absent.
Turning to pa sites, of which some 7000 have been recorded archaeologically, the great majority are on ridges, headlands, or volcanic cones. Pa sites exhibit various combinations of terraces, ditches, and pits (plus palisade post holes when excavated) and they are often visible, or would have been when palisaded, from some distance away. The conspicuous geographical locations, once associated exclusively with advantages for defence, have encouraged modern consideration of whether pa might also have displayed significant ritual attributes. As explained by Crosby (2004), this proposition, although building on earlier ideas, began with Prickett’s (1982) pioneering study of the social and ritual attributes of the archaeological Maori house and its immediate environs. It was further elaborated theoretically by Sutton (1990, 1991; Sutton et al. 2003) and applied with some success to the archaeology of Pouerua pa. Perspectives of this kind challenge the notion of pa as defended villages, as first enunciated by Cook.

At Pouerua there is relatively little evidence of habitation on the main pa, compared to the peripheral pa and open settlements (kainga). The latter were the main sites of habitation, while the peripheral pa had a formal house, courtyard and cooking area on one of the highest earth platforms (tihi) but otherwise were given over to storage, communal cooking and temporary habitation. The main pa contained a number of tihi but none had formal houses. Informal housing was built along the crater rim but evidence of cooking and craft activities was relatively scarce. The flanks of the cone were extensively terraced but in general not for habitation. The terraces mainly supported storage structures, communal cooking features and open space suitable for congregation; “the number of houses built on the rim was tiny compared with the vast number of storage structures built down the flanks” (Sutton et al. 2003: 233). The site was organized as a large single entity but not primarily for habitation. Defensive structures were built in several phases in the 16th to 18th centuries, initially rudimentary and extensive, then stronger and enclosing smaller areas, and later expanding again into larger areas more lightly defended. There is little evidence to suggest that it was settlement that was being defended. Only after the defences were gone was there extensive domestic habitation of the rim and flanks, largely within the European era. Thus Sutton et al. (2003: 232-234) conclude that the substantial cultural modification of the Pouerua volcanic cone was not for constructing a fortified village. The reasons, rather, lay in
“alteration of the large, physically dominating cone [as] a clear statement about ‘place’ and the ownership of ‘place’” (Sutton et al. 2003: 233). Similarly, patterns of pa of differing sizes and complexity in the New Zealand landscape, while functionally useful as defensive features suited to different levels of threat, constituted a patchwork of group statements about identity, strength and wealth (Barber 1996).

Ceremonial of some kind was doubtless involved in this. Ethnographically, Maori ritual was concentrated around the marae, the large formal house (wharepuni or whare whakairo) and the posts (pou) that were carved to represent ancestors or deities or which held up small god-houses that served the same function (e.g. Crosby 2004: 110). Pou also included large carved pou matua (father posts) in defensive palisades that represented male ancestors of the group, or sometimes its particular enemies (Best 1927: 63). Additional places of ritual significance included the squatting bar (paepae) of the latrine, house foundations along which hair, and nail clippings were hidden, and the mauri stone (one symbolizing mana) that was buried beneath the first post erected and which acted as a temporary habitation for the group’s ancestor spirits when they visited the pa. They made the pa not only a structure redolent of ritual significance materialized, but one closely bound emotionally to the particular group which owned it. Ethnographic evidence suggests that ritual activities were largely conducted in or near chiefly houses on the high points of the pa, or simply on the highest points whether or not these had houses on them (Best 1976: 274-277).

Archaeological evidence of such activities is very scarce thus far, but remains found on the summit of Maungakiekie Pa (One Tree Hill) might be indicative. Excavation of a flattened area disclosed several hearths and postholes, including one posthole around which were found numerous obsidian tools, some human teeth, fishing sinkers, carved pumice containers and other objects. Fairfield (1941) conjectures that the obsidian had been for cutting hair, to be kept in the pumice containers, and that the post-hole represented a former whata-pouwaka; a small house-shaped structure for the storage of human bones which was mounted on a tall post (Best 1916: 33). A painting of a marae in a pa by George Angas, in 1844, shows residents and visitors facing each other during a welcoming ceremony and, to one side, a probable whata-pouwaka (Best 1916: Fig. 34), or the similar pouahu
which, when it was erected on a marae, was located near the main gateway to the pa. In the small carved house (kawiu) on the top of the post was a container (waka) containing the symbol or figure of the tribal atua (Hiroa 1952: 481).

**The Chatham Islands**

Assertion (above) that Moriori cemeteries were also places of religious ritual is supported by the recovery in the early twentieth century of a large wooden figure from an “old Moriori burying ground in the bush near Manukau... The legs of the figure had been stuck in the ground but had rotted away, and it had fallen against a tree,” (Skinner 1923: 66, plate IV). The circumstances suggest this was an atua figure. Now about 1 m long, it may have been about 2 m originally. It had holes in the chin for the attachment of a beard, a common practice with god figures, and Skinner suggests that it was carved with iron tools, placing its age most probably within the nineteenth century. There is no indication that the place where it stood had any constructed features. The well-known dendroglyps of human and other figures carved into the bark of kopi (Corynocarpus laevigatus) trees might indicate ritual places. The carved trees (Skinner 1923: Plate V) are often found in clusters and Skinner (1923: 70) noted that on some trees there was a succession of figures down the trunk, as in carved ancestral figures on the posts of Maori houses. However, the dendroglyps occur near settlements, rather than in cemeteries, and on trees that were a major source of food, so they may not have had a particularly sacred status. Petroglyphs of birds occur and there are similar motifs on Moriori house planks (Skinner 1923: plate VI), but nothing to suggest that rock shelters or houses were more than ordinarily the sites of ritual activity.

A possible ritual site was reported by Simmons (1964: 67, plan shown p. 69). It consisted of small sandstone blocks in two lines 15 m apart. We could not find this site during fieldwork in 1972. The description suggests that it might have formed part of the foundations for an historical building.

**Norfolk Island**

The one convincing tuahu or small marae in south Polynesia is from Emily Bay on Norfolk Island (Anderson and Green 2001). It was built on a low sand knoll near the remains of a Polynesian house, and it was
paved with slabs of local sandstone. Prior to sand erosion the pavement had probably been approximately rectangular in shape. Several blocks were set upright and the northern and eastern edges were fairly straight. The feature had some history, beginning with a wooden structure marked by postholes concentrated near the southeast corner where, although not necessarily at this time, the cranium of an elephant seal (*Mirounga leonine*) had been buried. When the wooden structure decayed or was removed, the slab feature was built. Over it were scattered 24 flakes of obsidian from a source in the Kermadec Islands. A basalt hammerstone, possibly that used in producing those flakes, was interred in a small slab cist, similar to those called *avata/avanga* on paved *marae/ahu* in the Societies and Easter Island. The feature dates to 700-600 BP, as do others of this simple form in East Polynesia (Anderson and Green 2001: 48-50).

Most importantly, the evidence from Emily Bay indicates that the colonists had come from Raoul Island, and it is apparent from Mayor Island obsidian in sites of the same age on Raoul Island, that those people had already been to New Zealand. Thus it can be asserted that the shrine on Norfolk Island was of a form known to at least some of the population who colonized New Zealand. Shrines of this type, then, could have been expected in the archaeology of New Zealand, the Chathams and the Kermadecs, if not the Auckland islands, all colonized 700-600 BP. Small shrines of various forms were built on the smallest and most remote islands in Hawaii and elsewhere in East Polynesia so there is no reason to think that this could not have occurred throughout South Polynesia. Yet it did not.

**DISCUSSION AND CONCLUSIONS**

To return to the basic question; why did shrine construction, for which the Norfolk Island example indicates a knowledge within South Polynesia, develop no more complex or larger *ahu-marae* forms as occurred in tropical East Polynesia?

The possibility the monumental ritual architecture was imported to Central East Polynesia several centuries after colonization of South Polynesia cannot be disregarded but the hypothesis I prefer at present is a logical extension of the widely-accepted proposition that monumentality in various forms, including defensive structures and ritual sites, was a consequence of continuing population growth.
Mechanisms to suppress further growth by diverting energy from continuing food production (Hunt and Lipo 2000), others to capture a greater share of relatively scarcer resources by competitive aggression (e.g. Anderson and Kennett 2012), and yet others that emerged in response to increasing distance in social stratification and broadening political authority, with its sacerdotal support (e.g. Kirch 2010), could all produce monumental constructions of various kinds in Polynesia. It follows that when such conditions did not obtain, or did so relatively weakly, then monumentality of one kind or another was likely to be scarce or absent.

At European contact, population density was extraordinarily low in South Polynesia, reflecting a conjunction of the immense land area and the difficulty of reproducing tropical agriculture in a temperate climate. Population density at about AD 1800 was 0.35 to 1.0 people per km² in New Zealand, and 2 per km² in the Chathams, compared to about 16 per km² in Hawaii and 35 per km² in the Cook Islands at European contact. There were about 11 people per km² of arable land in New Zealand; low by tropical East Polynesian standards of 100 to 120 people per km² of arable land (Anderson 1980). More recent estimates of total population at contact in most tropical Polynesian islands are higher and the difference between South and East Polynesian population densities correspondingly greater (Rallu 2007).

New Zealand and the Chathams exhibited a ‘Traditional’ type of Polynesian society in which continuous status differentiation presented fewer opportunities to exercise power than in open or stratified East Polynesian societies (Goldman 1970: 21). Sahlins (1958: xiii, 11-12) noted that regional variation complicated any simple ranking by social stratification in New Zealand, but on his criteria Maori and Moriori societies would span the least ranked groups, IIb and III. Group membership in South Polynesia was open and fluid through weakly-restricted cognatic descent and effective authority was limited to the level of the ramage or clan. South Polynesia, then, had low population density and high climatically-induced residential mobility. With these were associated limited societal stratification and a low level of political integration.

Religious activity occurred, consequently, largely at individual and familial levels. That was often so in Pacific societies, but in South
Polynesia it was very predominantly the case, perhaps exclusively so. Cook (Beaglehole 1955: 286) thought that no prayers were addressed to the Polynesian departmental deities (Tangaroa, Tane, Rongo etc.), but later ethnographic information shows that they were objects of informal supplication, along with the sun, moon, stars, winds and so on. However, there is no indication of any religious cults or elaborate rituals associated with the major deities in South Polynesia, as occurred often in East Polynesia. Religious dialogue was largely restricted instead to interaction with the spirits of clan or family ancestors called, collectively, atua. It was they who monitored and mediated matters of tapu, sickness, fortune and fate. There was, likewise, no priestly class. The powers of the major chiefs, or ariki, were largely religious and ceremonial but rangatira (clan and family heads) commonly combined chiefly and ritual functions.

The locations and structures of regular religious activity were appropriately informal, modest in scale, and located on or within places that served other social purposes, including burial areas in the Chathams and family houses in New Zealand. Ritual observance, as required, could also occur at many other places, generally unmodified, that were scattered throughout clan territories, and when props were needed, as in divination ceremonies, those were made from material to hand; blades of flax, sticks, feathers etc. In terms of religious activity, then, there were almost no dedicated monuments in South Polynesia. Early East Polynesian styles of ahu-marae structures reached South Polynesia but failed to flourish or develop. However, the marae as an internal void, or in a very rudimentary structural form, was incorporated within the settlement pattern at all levels. Were settlements, then, and perhaps especially pa sites, substantially ritual monuments?

About 98% of pa and 97% of the Maori population at AD 1800 occurred within the boundary of agricultural production, mainly in the North Island. Pa construction began in the late 15th century and accelerated up to the period of European arrival. It seems to have tracked rapid population increase in northern districts that also began about AD 1500, the conjunction indicating aggressive competition for agricultural lands (Anderson et al. 2014). Pa were defensible locations that hosted communal feasting and other activities and which signalled strength to competitors. It is very likely, however, that what was being
defended was not just the local population as such, but also its storable resources, its equipment and its mana. Looking back archaeologically we see manifestations of defended people and their goods and stores but it is quite possible that at the time of occupation the main concern of local groups was to protect their spiritual integrity, derived from close ancestors and manifested in the marae, family houses, god-houses, carved statuary and portable items, perhaps including ancestral bone bundles and preserved heads. To that extent, pa might indeed have been ritual monuments. The weak political integration of South Polynesian societies required close and constant defence of spiritual assets, just as strong political integration in parts of East Polynesia allowed dispersed settlement and the safe construction of numerous ritual monuments. There seems to be a broad rule (with exceptions, e.g. in the Marquesas) that proliferation of forts is inimical to that of large ritual monuments, and vice-versa.

Yet, the situation in New Zealand was not static. Changes began in residential composition and authority of groups as a result of warfare and internal migration prior to European arrival, and by the early nineteenth-century the membership of clans was often spread widely amongst different settlements in which the exercise of property rights and leadership was co-ordinated at a community level, rather than by clan, although normally by a chief of the main clan represented (e.g. Anderson 1980, 1996). Such disparate groups sometimes acted as corporate units, pursuing common economic and social goals (Ballara 1998). While descent remained the foundation of identity, subordination of descent relationships to community organisation may have been increasing by the end of the 18th century.

A related trend was a decline in clan control of territoriality and the incorporation of multiple groups through warfare and political consolidation into the modern tribes; a process in which traditions and genealogies were differentially emphasised anew to reinforce the validity of successful actions, strengthening links to important ancestors by winners and loosening those of losers (Sissons 1988). This “major tribal reformation”, was underway before the arrival of Europeans (Sutton 1990), although it continued during European colonisation. The rise of Nga Puhi in Northland, of Ngati Mahuta in the Waikato, where they installed the first Maori King in 1858, and the emergence of other tribes known as Ngati Kahungunu, Tuhoe, Ngati Whakaue and Ngai Tahu
are examples of the process. The development of powerful tribal chiefdoms might be seen as the first steps toward the more stratified, centralised polities that evolved earlier and more completely in East Polynesia. There are some possible indications of that.

Massive wooden structures (*hakari* stages) for displaying food and other commodities are recorded in northern New Zealand. Some structures were tall and conical, others were built as towers with multiple platforms amongst them in complexes that could be more than 100 m long and 25 m high (Figure 3).

On the face of it, this monumentality was associated with secular activities antithetical to the *tapu* nature of religious ceremonial. However, *hakari* feasting was also associated with some very *tapu* events, such as the *hahunga* ceremony of secondary burial. The public distribution of food functioned both to lift the *tapu* involved in such ceremonies and to demonstrate the bonds between the political groups involved (Best 1916: 71-75).

As similar stages laden with food were erected on *marae* elsewhere in Polynesia (e.g. in Tonga, Best 1916: 75), and as wooden towers with stages carrying food and other offerings occurred on ritual sites in Hawaii (Cook in Beaglehole 1967: 270), the *hakari* stage might have had stronger ritual associations than appear at first sight and would certainly qualify as a monumental structure, albeit temporary. It was probably at this time as well that war canoes, mobile monuments richly symbolic in decoration, and used as platforms for display, became very common in northern New Zealand.

By 1815 there are also references to the chiefs of the inland Bay of Islands,

being attended with much more state and ceremonious distinction. They are carried, as we are informed, whenever they go abroad, on the shoulders of their attendants, in a sort of state litter, and receive many other distinguished marks of respect (Nicholas 1817 vol 1: 291).

This was, perhaps, the beginning of a new and elevated stratum in Maori society.

The general process has been seen, in different but connected perspectives, as the beginnings of a change toward a class society (Lian 1992), the developing primacy of political over kinship relationships: “*hapuu* [clans] are primarily kinship structures, *iwi* [tribes] are
primarily political structures” (Webster 1997), and a move toward settlement or community-ordered societies that was shifting the focus of chiefly mana from direct warrior leadership toward the meeting house with its implicit emphasis upon the roles of public display, discourse and political persuasion. As there are remains of houses up to 15 metres long in late pre-European archaeological contexts, this process had begun before the arrival of Europeans.

From about the mid-nineteenth century, especially following the decline of warrior credentials in leadership with the end of the land wars, there was a proliferation of meeting houses which Sissons (2010) sees as the development of a ‘house society’, the ability to build meeting houses and operate them becoming the new focus of local group membership and cohesion.

I conclude that rudimentary ahu-marae structures accompanied initial colonization of South Polynesia about 700 BP, but contact with East Polynesia ceased before the regional diffusion of monumental religious structures in East Polynesia, after about AD 1500. However, to the extent that those monuments in East Polynesia were products of local development from antecedents common to East and South
Polynesia, then an additional explanation of their absence is required for South Polynesia. I argue that unusually low population density (resulting particularly from the size of New Zealand and a limited range of native plant foods throughout South Polynesia), and limited agricultural productivity, were associated with high residential mobility, retention of social stratification in its colonizing form and similarly limited extension of political authority. After about AD 1500 rising population density and competition for agricultural lands in northern New Zealand intensified inter-clan warfare and internal migration. This created an increasing need to protect people, goods and stores, to strengthen group cohesion and to signal defensive strength, and it resulted in the proliferation of pa sites. These monumental sites combined multiple functions, of which one, perhaps perceived as a matter of the highest priority, was protection and display of ancestral mana using ritual assets in which it was invoked and materialized. Only as Europeans arrived were more integrated and extensive polities emerging and, in the process, creating the conditions in which it was safe to begin releasing ritual symbolism into the hinterland of the pa as monumental constructions.

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CHIEFS, FASHION AND ZEITGEIST: EXCLUSION AS AN EXPENSION STRATEGY IN KINSHIP BASED GROUPS IN THE SOCIETY ISLANDS

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Abstract: In this paper I argue that chiefs created the contemporary fashion of ceremonial sites (marae) and that this was a phenomenon that we may call the zeitgeist (spirit of the time) of the Society Islands that extended far beyond the local sphere. This is based on the fact that memory based societies are driven by spontaneous subjective actions, which allow such changes, since only accepted ideas are remembered. A House Society model is explored to explain how certain chiefs successfully dominated larger areas and expressed power through domestic and ritual material remains. Their status position in society made it possible for the chiefs to exclude, as well as to include, others by help of such material expressions as well as by threats of war, through their war god missionaries, the arioi society. Intermarriages between powerful chiefly houses in different islands have been additional important factors to form alliances and create access to land e.g. to legitimize power relations. Ceremonial sites, generally called marae, were the important material expression of this power game. They were the focal points of important decisions in society, and the place where humans met with the gods. They were ritual sites, as well as memorial places tied to genealogies, mythologies and land titles. These monuments went through constant changes since re-building and additions were necessary to keep their functions alive.

INTRODUCTION

During the last ten years an intensification of the studies and excavations of ceremonial sites in the Society Islands has been undertaken. The monuments and their landscape and social contexts have been researched by different teams focusing in the Leeward and Windward Islands respectively (Wallin et al. 2003; Wallin and Solsvik 2010; Kahn and Kirch 2003; Kahn 2011). These new efforts have inspired discussion, and new theoretical developments in the understanding of the monuments can be shaped based on these investigations.
The aim of this paper is to uncover how individual power, through exclusions (as well as by exclusive expressions) managed by *tabu* restrictions, was expanding in the Society Islands during the late prehistoric era and how this was achieved by high chiefs as creators of fashions, invented at the right moment, catching the zeitgeist or the spirit of the time (Vinken 2004). This should be understood in the light of the fact that some chiefs used their genealogical connections and links to the leading gods, which gave them advantages in this power struggle. They belonged to certain influential ‘houses’, and these chiefs were aware of their position and used it in the creation of monuments, as well as status symbols that were linked to divine status. The house society model (Levi-Strauss 1987) is useful for explaining how Polynesian chiefdoms were organized. The ceremonial monuments (*marae* mainly) as well as residential houses showed clear distinctions in their shapes (Wallin and Solsvik 2006a: 53). The *marae* was a sensitive tool used by the chiefly houses for fine grained distinctions, which are visible in a range of small variations in the architecture through time. The residential features on the other hand had one clear distinction, e.g. that the round ended houses were chiefly status houses (Green et al. 1967, fig. 10). The ‘trend setters’ of *marae* stylistic change seem to have been the traditional aristocracy at Opoa on the island of Raiatea, since they, according to local mythology in the Society Islands, had a closer connection to the gods than other chiefs of the Societies (Henry 1928: 119). This is especially evident when it comes to the establishment of the war (and fertility) god ‘Oro, which had his original seat at the *marae* Taputapuatea at Opoa. Henry mentions that according to traditional history ‘Oro created a mission school with the seat at Opoa, and the first master of this school was high chief Tamatoa of Opoa (Danielsson 1956: 166). The Taputapuatea structure was an expression of belonging to the worship of ‘Oro (Figure 1).

This can be understood as a physical statement of belonging, and those that did not profess to ‘Oro were excluded from the ceremonial site. Not professing to ‘Oro could be seen as a provocation that could lead to war (Handy 1927: 265). These factors were powerful tools in expansion strategies that emerged from around AD 1600 and continued into the early European historical contact period. This is based on genealogies (Henry 1928), and has more recently been demonstrated by archaeological investigations and dating of late *marae* structures of
monumental size (Wallin and Solsvik 2010a, 2010b; Kirch and Kahn 2010).

THE HOUSE SOCIETY MODEL AND FASHION AS FOUNDATIONS FOR STATUS EXPRESSIONS AND EXPANSION

The house society model described by Levi-Strauss (1987) reached far beyond the household as such since it included a metaphor of larger societal groups including not just the residential group of the house, but all groups tied to this unit (Fox 1993: 1). Levi-Strauss’s model was derived from his understanding of how Medieval ‘Noble houses’ were constituted. Fox writes based on Levi-Strauss 1987 that:

The characteristics of such ‘houses’ were critically defined by: possession of a ‘domain’ consisting of material and immaterial wealth or honours; the extensive use of fictive kinship in alliance and adoption; and the transmission of the ‘domain’ — titles, prerogatives, and wealth — via women as well as men. These characteristics serve to undermine a

Figure 1. Images of the war god ‘Oro (After Kooijman 1964).
simple reliance on principles of descent and exogamy for the perpetuation of social groups. As Lévi-Strauss (1987) remarks, one purpose in introducing the concept of ‘house’ was to address the weakness afflicting theoretical debates that are ‘haunted by the idea of descent’ (p.165). The ‘house’ can be seen as a forum in which a tension between conflicting principles of descent and alliance, property and residence, exogamy and endogamy are expressed and seemingly resolved (Fox 1993:7).

Using these ideas Levi-Strauss (1987) made a comparative anthropological study of house societies of the Pacific including the American North-West Coast, Indonesia, Polynesia, New Zealand, Melanesia, Micronesia and Madagascar. His purpose was to indicate a type of social structure in between elementary and complex societies that he had described earlier (Levi-Strauss 1969). The house society concept may therefore be used when interpreting stratified chiefdoms, where ideas on differentiated groups and expressions of power are visible in the constructions of houses, ceremonial sites and other material remains. The house society concept has been used in different ways in Pacific research, for example by Fox (1993), with an anthropological linguistic view in his edited volume Inside the Austronesian House and in archaeology by Kirch (2000), Kirch and Green (2001), Kahn (2005), and Kahn and Kirch (2003, 2013).

The concept of fashion may not have a good reputation, since it often is tied to flamboyance and the superficial. However, fashion has for a long time been of importance in sociological studies, albeit investigated in relation to what fashion appears to represent, which usually has been tied to issues concerning class and gender (Barthes 1990; Bourdieu 1989; Vebelen 1899). However, fashion may not just be seen as a representation of such expressions but is also a way to communicate ideas as well as to execute power (Vinken 2005: 4). It is in this sense that I will use the fashion concept.

Fashion (as haute couture) in its classical meaning stands for exclusivity and originality and in some senses it expresses the disguised or a mixture of desirable features seen in certain relations, for example; female and male, fertility and war, life and death etc. In such relations fashion represents a transcendence or exotic difference that also reduces these disguised relations into pure identity attractive for those
in power. When such expressions are normalized it is not about identity anymore, but instead expresses difference or social/individual distinctions within a (local) group (Vinken 2005: 28). Fashion in itself is about the actual moment, and can only survive through its own destruction, and living in a constant eternal promise of new inventions and expectations (Vinken 2005: 42). It exists in a subjective, self-evident, uncritical eternal present, within the frames of a living memory (Norá 1996). Expressed in oral traditions, certain fashions are acted out, on the marae, their materialized memorial places, and there directed by the high chiefs and their priests.

The material expression of ‘haute couture’ fashion, as defined above could develop in certain high status lineages (houses). Changes may happen when traditional monuments became common expressions (or when falling into oblivion) within the existing network. At such ‘vulnerable’ moments, the network participants were susceptible for new strong expressions, and when this occurred, fashion can be described as the “art of the perfect moment” (Vinken 2005: 42), sometimes described as zeitgeist.

The house concept as well as fashion is considered useful in the study of chiefly power relations expressed in the ceremonial sites of the Society Islands, which ultimately, as mentioned above, were tied back to the legendary site of marae Taputapuatea at Opoa on the island of Raiatea. Raiatea was traditionally referred to as Havaiki or the homeland of East Polynesian culture in early legends (Buck 1931; Handy 1927). Since the paramount chief (called ari’i rahi) of Opoa was widely renowned, we may talk about the house of Opoa representing a strong chiefly household that carried high chiefly titles including control over large land areas, managed by lesser chiefs (ari’i ri’i). It was through controlled marriages and/or warring pressures the paramount chiefs were able to collect the high titles that gave them influential power over large land areas or in some cases complete islands. An example of this is seen in the collection of chiefly titles described in Samoan genealogies (Krämer 1994: 644-647). Henry (1928: 139) mentions that the chiefly title was tied to the marae that was built on land controlled by its ‘owner’, and since the name of Taputapuatea was spread from Opoa to Tahiti, Mo’orea etc., it indicates a strong tie back to these chiefs and their titles and genealogies.
In the Society Islands it is clearly indicated that power relations were expressed by material things, such as feather girdles, wooden staffs and carvings, as well as by architecture both of residential types seen in oval shaped houses, as well as in the ceremonial sites (Kahn and Kirch 2013; Wallin and Solsvik 2010).

In this context I will discuss the ceremonial sites in more detail. The marae structures were in constant change, although the general outline was quite fixed. The changes occurred within the outline of an accepted frame preserved within the collective memory of a gathering place. The general outline is a demarcated square that has a stone platform called ahu placed at one side. The courtyard generally has several upright stones indicating places of participating chiefs, priests and ancestors (Handy 1927). The arrangement of these features and the facing and shape of the ahu changed from place to place and in the Society Islands there were differences among the Leeward and Windward Islands (Wallin and Solsvik 2010). I have argued elsewhere that these small changes are probably due to individual chiefly expressions, however extensive alterations probably expressed changes in the gods worshiped at the marae (Wallin 1993, 2001).

The extensive change that occurred at Opoa expressed in the large marae Taputapuatae can explain the dynamics of the expansion of an extremely powerful house seated at Opoa. The status/power expression concentrated to Opoa is seen in the genealogies which are tied to Tangaroa, the creation god, who according to legends broke through the sky and placed his right foot at Opoa where the first quite small marae was built (Handy 1930: 8; Wallin 1993: 108). His left foot was placed on the other side of the island at Tevaitoa where another marae of the same kind was built. The senior branch had its main seat at Opoa and junior branches were probably placed at Tevaitoa, and also spread in other areas. This legend links the creation of gods to the chiefs of Raiatea, as well as the creation of the earliest marae structures.

Expansion within an island was tied to senior and junior competition within the leading houses as mentioned above. Interrelated family members were tied to different land areas by different chiefly titles and thereby controlled different parts and districts. The lesser chiefs could in fact be larger landholders, and therefore also responsible for producing surpluses for the paramount chief, who could distribute these as a sign of wealth (Goldman 1970: 184). Connections to different land
areas were also strengthened through marriages which tied the houses together.

A broad consensus of the outline of the marae is seen in the Society Islands. They were structures initially of a size that could be built by smaller family units/lineages and were dedicated to gods like Tangaroa, Tane and Rono, gods of creation, the land/woods, the sea etc. As mentioned above the first marae according to legends were built at Opoa, and spread throughout the islands from there (Handy 1930: 92). However, when a concept of a certain marae type is repeated again and again it will be turned into routine. The once respected meanings lose their credibility and become more or less meaningless. In such a situation the high chiefs at Opoa with their cultural capital as the original centre for the invention of the marae elevated the war god called ‘Oro as the main god of worship. To do this they also shaped a new monumental marae expression. They created the grand marae Taputapuatea (Figure 2) and placed it on the tip of the point at Opoa, and called it Te Po (darkness). Thereafter this type was erected at several places in the Leeward Islands after the same fashion (Wallin and Solsvik 2010: 112), and in the Windward Island the new god was honoured by stepped ahu structures, with nicely worked round ended stones, placed on the marae court, and some of them were given the same name: Taputapuatea (Wallin 1993: 107). These structures could not be built just by the individual families; they demanded large
amounts of labour to manage the large megalithic blocks or the preparation of the many rounded stones. In this way the chiefs at Opoa could continue to exert influence over a large area, since they created new demands to control the new god. If these expectations were not followed then there was a threat to be excluded or else conquered by force. However, by accepting the new god the influences from Opoa came to dominate thinking, and a new spirit of the time became visible (Figure 3).

EXCLUSION AND DOMINATION STRATEGIES: WAR AND MARRIAGE

When creating something exclusive and powerful the chiefs also create a desire of something new and powerful, which are signs tied to fashion (Vinken 2005: 16). In political science questions of exclusion and domination have been discussed frequently and Danielle Allen argues that exclusion is a method used to achieve domination (Allen 2004: 30) among, for example, ethnic groups etc. Domination and control are concepts closely tied to chiefly systems seen in Polynesia, and were
carried out usually via *tabu* regulations or restrictions that excluded everyone other than the chief himself to act in certain situations, and the late chiefdom structure of the Society Islands is described as one of the most stratified ones in the area (Goldman 1970: 170-197).

When the war and fertility god *'Oro* was elevated to be the main god (Handy 1927: 109) this was partly an act of exclusion of the old gods. It was also a god clearly disguised and tied to a transformed message. As such it was strong, exclusive and attractive. The old gods became less important, which also made the old *marae* less important or restricted to certain rituals. According to the myths recorded by the early missionaries (between c. 1797 - c. 1850), *'Oro* was the son of *Ta’aroa*, and he lived in heaven together with his wife. The myth continues with the story that *'Oro* killed his wife by pushing her out of heaven. However, after a while he looked for another wife, this time on earth. For this purpose he sent his two sisters to search for a wife among the different Society Islands. On the island of Borabora, west of Raiatea, they found a beautiful girl, and the two sisters asked her to become the wife of their brother. Soon *'Oro* came down on a rainbow-bridge from heaven to earth. After a while the two brothers of *'Oro*, called *Orotetefa* and *Urutetefa*, also walked down the rainbow to look for him. They found him together with his new wife and their son *Hoatapuiterai*. The brothers also thought his new wife was very beautiful, and started to look for a nice celebration gift. They searched, but could not find a better gift than themselves, so they transformed themselves into a pig and a bunch of red feathers. These attributes thereafter became the symbols of a new society that *'Oro* created, namely the *arioi* society (Danielsson 1956:166-167). *'Oro* selected his members himself, and the first human representative of the *arioi* 'missionaries' was the chief Tamatoa of Raiatea. It was also stated that the members of the society should not have children or be married, but only carry out singing, dancing, and religious/fertility rites. *'Oro* himself went back to heaven with his wife and son, and became the ruler of all the *arioi* (Ellis 1831: Vol I: 230; Handy 1927: 308).

This myth seems to have been created to give the exclusive power to the chief Tamatoa in Raiatea to give him (and following chiefs of Raiatea) continuous and new divine rights directly from the gods. The story also shows that the power among gods goes from father to son, and also exclusion by death of his wife, as well as tying new connections
in new lands, outside heaven, something that also can be indicated by new intermarriages between the divine chiefs of Raiatea with the more traditional chiefs of Tahiti (Henry 1928: 129).

The mission of 'Oro was taught at quite organised schools. The teaching consisted of chanting of prayers, reciting of genealogies etc. Henry mentions such a school situated at Fare Roi marae at Point Venus in Tahiti. She wrote: "The sister, Toa-te-manava, was kindly received at 'Uporu (Ha'apape) [Point Venus], where she established a school for the aristocracy of the motherland, Ra'iatea" (Henry 1928: 130). The missionaries of 'Oro were called arioi. The society was a ranked organization with seven different levels, including both men and women. The different levels were distinguished by different tattoo signs placed on different parts of the body (Danielsson 1956: 170). Men of high social rank occupied the highest positions. In historic sources it is mentioned that when an arioi group came to visit, ordinary work was abandoned, and the people prepared themselves for feasting. The ceremonies that followed were initiated with declamations of creation myths and important legends. During these prayers generous offerings to 'Oro were performed. This was followed by more entertaining parts, like dancing, singing, and performances (Figure 4).

Figure 4. Dancing performance in the Island of Raiatea. Engraving by Hodges from James Cooks second Voyage to the Pacific. Engraving in possession of the author (Photo: Paul Wallin).
This means that the contacts between the islands were kept through the *arioi* who arranged meetings on the different islands, and they arrived on big canoes (Figure 5).

These meetings involved large groups of people. General meetings could assemble from hundreds up to several thousand persons (Forster 1777). Such meetings established strong ties between people of the different islands and in arrangements of marriage. The genealogy of the Raiatean high chiefs was highly respected and desirable in all of the Society Islands (Emory n.d.; Oliver 1974, Henry 1928).

High chiefs assigned political power by favouring certain houses in marriage. The highest status was tied to the chiefs at Opoa, and they married their daughters to chiefs of Tahiti and other islands. By doing this, Opoa power was spread to all islands, and the consequences of this are that the political power of Opoa became not only local, but of inter-island importance (Henry 1928). Since this power was intimately tied to the war god ‘Oro, it also had a strong religious connection. Power was
tied to wealth that was expressed by domination over land. Land boundaries were therefore guarded against thieves, who had their own deity, Hiro, who was the son of ‘Oro, and it has been argued that thievery can be seen as a warlike act, due to the link between Hiro and ‘Oro. This is because theft within a district was an assault to the land owner’s honour, which can be compared with a warlike action against an outside enemy (Goldman 1970: 184). However, wealth in itself was not important, since a powerful chief was the one who distributed wealth to his subordinate chiefs and never refused what they asked for (Ellis 1853, Vol. 1: 128). Such economic powers expressed wealth, and gave internal political and ritual authority to the persons in control (Goldman 1970: 184).

**THE MARAE AS A STATEMENT OF EXPANSION FOUNDED IN COLLECTIVE MEMORIES**

The marae was a memorial place, as well as an active part of a creative prehistoric societal fundament, based on myths and genealogies. When looking at the phenomena from an archaeological perspective one can see that there are clearly different ‘stories’ told by different material expressions tied to habitus based practices (Bourdieu 1977), and these narratives have different rhetoric expressions (Hodder 1993).

The French historian Pierre Norá has extensively discussed the distinctions between memory and history (Norá 2001, 1996). He argues that memory is oriented towards the spontaneous, subjective and organic, and history on the other hand is tied to the general, descriptive facts and institutions. Other concepts of Norá are more directed towards the discussion of memory itself and its transformation into history, and here he makes the distinctions of *milieux de mémoire* and *lieux de mémoire*. The first concept exists in traditional societies without temporal reference but with a predictive, strong, spontaneous memory of the ancestors, which repeat the tradition and myths in an organic way (Norá 2001: 366). The second concept is tied to memorial places, which occur according to Norá, when memory turns into history, in a break with the past when the memory only can be recreated through place (Norá 2001: 365).

When memory milieus are broken there is space for new creations and the establishment of new values, which are a way to keep the memories alive. Past memories become history preserved in legends.
and myths. Here again we can see the rise of a foundation of a new memory milieu with new innovations. However, when the East Polynesians, in this case the Raiatean aristocracy, created monumental architecture it may have been due to difficulties with the remembrance of the meaning of the prevailing structure that was created in the past.

Common memories of creation, gods and legends were shared in the Society Islands and great genealogies were tied to these to express their importance. In the same way the ceremonial sites were tied to individual genealogies to give them importance. This entangled web of associations worked to tie the general to the specific, the myth to practical expressed realities at the local sites. Existing networks were used for the dispersal of such new ideas. Using and controlling these networks made it possible to reach and compete far outside one's own island. Central points tied to old traditions seem to be the creation centres of new fashions in architecture styles. The house of Opoa in Raiatea and its high status had the power over humans, and the relations with the gods, to be able to change material expressions. They were the creators of the intellectual thought that dominated cultural expression (Montgomery 1832: 126), indicating the “spirit of the time” sometimes called zeitgeist (Magee 2011: 262).

**ARCHAEOLOGICAL EVIDENCE OF THE FOUNDING OF MARAE AND A LATE EXPANSION**

During the past ten years new excavations with the intention to date marae structures have been carried out in two main areas, one conducted by Paul Wallin in the Maeva district on the Island of Huahine (Summarized in Wallin and Solsvik 2010b, 2010a, 2005, 2006b), the other conducted by Jennifer Kahn in the Opunohuu Valley on the Island of Mo'orea (Kahn 2011, Kirch and Kahn 2003, Kahn and Kirch 2013).

Even though the sample of excavated marae is small, it is clear that two defined and archaeologically dated phases of marae structures can be traced both in the Leeward as well as in the Windward Islands (Wallin and Solsvik 2010b; Kahn 2011). There was an initial marae building phase around AD1400-1500, that shows smaller structures tied to family or lineage groups (Wallin and Solsvik 2010b: 88; Kahn 2011: 44) (Figure 6a & 6b). A second phase is indicated by large structures, built of megalithic limestone slabs in the Leeward Islands, and large
structures with stepped *ahu* with worked stones in the Windward Islands (Figure 6c & 6d).

In Huahine three structures of the large ‘Oro type were dated, *marae* Manunu, *marae* Anini and *marae* Ohiti Mataroa were dated to the time frame c. AD 1600-1800.

*Figure 6a. Marae Vaiotaha, Maeva Village, Huahine. Lime stone slab *ahu* (Photo: Paul Wallin).*

*Figure 6b. Tahitian *marae* with a platform *ahu* (Photo: Paul Wallin).*
Figure 6c. Marae Manunu, Maeva Village, Huahine. Lime stone slab ahu of ‘Oro type built in two steps (Photo: Paul Wallin).

Figure 6d. Stepped ahu in Opunohu Valley, Mo’orea. Late monumental type with rounded worked stones (Photo: Paul Wallin).
A new calibration of an old shell date (Emory and Sinoto 1965) of marae Taputapuatea gave the date AD 1503-1799, which falls in the same time frame. In Tahiti a new date from marae Marae Ta’ata, a stepped ahu, indicated the time frame c. AD 1653-1951 (Wallin and Solsvik 2010a:89). The excavations by Kahn at the inland areas of Opunohuu Valley also show four marae with stepped ahu or worked stones, which generally are observed around the coasts in the Windward Islands. However, these structures were dated to about the same time frame or c. AD 1620-1760 (Kahn 2011: 40-41).

**DISCUSSION AND CONCLUSIONS**

This paper discusses the relations among chiefs and their control of wealth, and how they were actively involved in the creation of fashion giving the trends manifested in the material expressions that can be seen as zeitgeist eras. These aspects were a fact within the social structure that was reflected in a society organised within the frames of a classical house society (Kahn and Kirch 2013). These houses are visible since it can be shown through archaeology and ethnohistory that they were in possession of both material and immaterial wealth expressing the honourable qualities of the chiefs. Another feature present is that they connected kinship through controlled marriage strategies.

In the Society Islands there was an obvious elite house seated at Opoa on Raiatea, it was widely known and accepted that they had been given their superiority and quality through a direct connection to the gods (Montgomery 1832: 126; Henry 1928) The Opoa paramount chiefs were not late to use this privilege, and they did it effectively by use of tabu regulations which made them even more exclusive. With such methods they controlled material expressions of status. When recollection is unclear in memory based societies, or when old ideas lose their significance, new creations/inventions are needed. Such clear breaks could work extremely effectively since memory based societies are open for change in a spontaneous way (Norá 1996). However, at the same time old ideas are turned into mythological histories useful to secure status tied to genealogies.

Based on archaeological evidence I argue that the genealogical stories indicated an original creation of small family and lineage marae which preceded the later large status monuments seen both in the Leeward as well as in the Windward Islands. Such a scenario has been
suggested and indicated already by the stories recounted by the missionaries of the early 19th century. It has been described by Henry (1928, from a manuscript based on early accounts), by Handy (1927, 1930), as well as by Emory who argued that the late expansion of ‘Oro from Raiatea happened around AD 1600 according to genealogical dating (Emory n.d.). Henry (1928: 129), ties this to chief Tamatoa I, who genealogically should be placed around AD 1450, and ties the late expansion to Tamatoa II who ruled over all districts of Raiatea (Henry 1928: 248). There is a strange c. 10 generation gap between these two high chiefs of Opoa. This could be due to the scenario I mentioned above, placing Tamatoa I earlier in time as a founder, much more ancient than he actually was. If the time between Tamatoa I and II was shorter, Tamatoa I could have been the one who established ‘Oro at Raiatea probably around AD 1600, which actually is suggested by archaeological dating of the ‘Oro temples (Wallin and Solsvik 2010). To conclude it is suggested that some general trends are visible in the genealogical dating of marae foundations and their changes, and that these changes were probably the actions of powerful chiefs creating the spirit of the time; the zeitgeist.

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SPATIAL PERSPECTIVES ON CEREMONIAL COMPLEXES: TESTING TRADITIONAL LAND DIVISIONS ON RAPA NUI

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Abstract: The ceremonial sites of Rapa Nui, the ahu, are complex structures that incorporate and display a variety of distinctions and social relationships tied to different land areas that belonged to senior and junior groups. Such distinctions will be analysed via a Correspondence Analysis using selected ahu structures and connected variables. A detailed case study of two ahu in the La Perouse area will focus on the organisation of the variety of prehistoric material expressions connected to these. The aim is to show how habitus works in a local context at the individual organizational level. Through these studies we highlight the complex relationships involved in creating a milieu, in which actors of different groups carry out their practices when creating monuments and organising place.

INTRODUCTION

Rapa Nui, also known as Easter Island, is geographically the most isolated island in the world (Figure 1). Yet it was found and populated by Polynesian seafarers in prehistoric times (Martinsson-Wallin and Crockford 2002: 256). Prior to archaeological investigations there were several ideas, generally based on genealogies, about when and by whom the island was originally settled. Since there are several versions of genealogical accounts, and their chronological reliability is uncertain, these traditions are difficult to use when discussing temporal issues (Martinsson-Wallin 1994: 76). When radiocarbon dating and stratigraphic methods were introduced by Thor Heyerdahl and associates in the mid-1950s (Heyerdahl and Ferdon 1961), it was established that Rapa Nui was settled by humans around AD 400. This date was subsequently revised after analysing the context of samples (Martinsson-Wallin 1994: 83). This analysis in conjunction with the dating of an early settlement excavated by us at Anakena in 1986-1988.
(Skjølsvold 1994), led to a proposed colonisation event at around AD 800-1000 (Martinsson-Wallin 1994: 83). Subsequent re-evaluation and re-dating of the early settlement at Anakena (Martinsson-Wallin and Crockford 2002; Wallin et al. 2010) as well as the introduction of chronometric hygiene now give us reason to believe that Rapa Nui was not settled before the 12th-13th centuries. Hunt and Lipo (2006) suggest that their assessments of radiocarbon dates show that the island was not settled until the 13th century.

According to oral tradition the island was settled by Hotu-matua and his wife Ava-reipua, and the first landing place was at Anakena on the north side of the island (Métraux 1940: 56-65). There are variations in the content of the traditional accounts of the settlement history (Roussel 1869; Thomson 1889; Jaussen 1893; Routledge 1919; Métraux 1940) but generally Hotu-matua is given as the first named chief of the island and that his and Ava-reipua’s first son, Tuu-maheke, was born upon arrival at Anakena. An early account in regard to the land distribution among clan or tribal groups was recorded by Thomson (1891: 527);

To Tuumae-Heke, the eldest son, were given the royal establishment and lands from Anekena [Anakena] to the northwest as far as Mounga Tea-tea. To Meru [Miru], the second son, were given lands between Akahanga and Hanga-roa; To Marama, the third son, were given the lands between Akahanga and Vinapu. The land lying to the northward and westward of Mounga Tea-tea was the portion of the fourth son, Raa, and was called Hanga-Toe. To the fifth son, Korona-ronga, were allotted the lands between

![Figure 1. The Pacific Ocean with the location of Rapa Nui.](image-url)
Anekena and the crater Rana-Roraku. To the sixth and the last son were given the lands on the east side of the island. His name was Hotu-iti.

Routledge (1919) recorded during her visit in 1914-1915, that until recently there were ten paternal descent clan groups on the island but Métraux added (1940: 120) “I prefer the more general and more appropriate term tribe (mata).” Routledge’s map of the ‘clan’ areas (see Figure 2) does not entirely coincide with Métraux’s information of tribes and land distributions and he suggests some revisions (1940: 122). Métraux concludes that;

In sum, the tribes (mata) of Easter Island seem to have been separate social groups made up of descendants of a common ancestor.” (1940: 123) .../and that/; ...the ten mata or tribes were divided into two main divisions corresponding roughly to the western and eastern parts of the island. The western and northwestern tribes were called Tuu (usually spelled Ko Tu) or mata nui (greater groups), and the eastern tribes were the people of Hoto-iti or mata iti (lesser groups) (1940: 124).

Figure 2. Early map with the main districts indicated. Red, blue and green indicates the lands divisions of the three oldest sons, and black ovals indicate the lands portions given to the three youngest sons of Hotu Matua (After Métraux 1940).
This shows that the concept of senior and junior branches existed in Rapa Nui. There is a discrepancy in the account of the land distribution to the six sons/clans of Hotu-matua since in historic times there seems to have been ten clan areas. It is also striking that Thompson’s account that the Miru [Meru] clan was given the land from Akahanga to Hangaroa does not entirely coincide with Routledge’s map and the current view that the Miru clan ruled in Anakena and considered the north coast towards Hangaroa to be their clan area. A subsequent subdivision of the Marama area on the south coast is very likely with the Ngatimo, Ngaure and Haumoana clan areas as well as the Tupa-hotu clan within the Korona-Ronga area (Martinsson-Wallin 1994: 103-104). Warfare and inconsistencies in the accounts in relation to who were the informants and their possible agendas are at play here. It is however clear that assured corporate decent groups were attached to certain areas as well as to specific ceremonial sites in prehistoric times.

Figure 3. Hypothetical districts based on the dispersal of large main ahu structures (after Stevenson 2002).

Spatial studies of ceremonial sites (ahu) made by Martinsson-Wallin (1994: 85-107) show that these sites are distributed all over Rapa Nui
and thus are found in all historically known districts/clan areas. The study also indicated that there were larger and smaller ceremonial sites distributed in all districts with some minor reservations for the small district Ngatimo on the south coast. Martinsson-Wallin’s spatial study of ahu sites has shown that features such as red lintel stones and hats (pukao) were also more frequently found on the south coast and that these features were probably added to the sites over time (1994: 106).

Based on traditional history and archaeological analyses of image ahu Stevenson (2002) has suggested a hypothetical land division also including the inland areas (Figure 3). In this paper we test this hypothesis by evaluating the relationship between ahu and traditional land divisions by use of multivariate statistics. Our aims are to investigate general organizational principles seen in the ahu structures at an island wide level, as well as making a case study at local level using what has been interpreted as ritual and secular material culture remains alike.


Studies of the built environment on Rapa Nui show a huge number of prehistoric material remains, which have been built and re-built over time (McCoy 1976; Martinsson-Wallin 2000; 2004). Attention has focused on larger and smaller ritual places scattered around the coastal areas in the form of raised platforms and ramps constructed of stone boulders and slabs (ahu), and adjacent statues (moai). The statues are part of the ceremonial sites but statues are also found in the landscape on the way to the ritual sites and at all manufacturing stages in the quarries at Rano Raraku (Van Tilburg 1986). In addition to this there are structures which are interpreted as chiefly settlement areas with boat shaped stone foundation houses and adjacent pavements (hare paenga). There are also various stone buildings such as so called chicken houses (hare moa), garden stone wall enclosures (mana vai), stone lined fire places (umu pae), stone cairns as territorial markers (pipihoreko) and stone towers (tupa) (McCoy 1976). Traces of rectangular shaped house foundations are also found at inland locations, as well as, a unique water feature (a dam) recently excavated in a gully on the slopes of mount Terevaka (Vogt and Moser 2010).
Pollen records from the crater lakes (Flenley et al. 1991) and results from archaeological excavations (Orliac and Orliac 1998; Martinsson-Wallin 1998, 2004; Meith and Bork 2010) have shown that the original natural landscape has been greatly modified due to human impact. Large scale deforestation of the indigenous giant palm trees (Mieth and Bork 2010) is evident. The reason for this modification was probably a combination of intensification of cultivation (horticulture) (ibid 2010), and utilisation of palm trees in transporting statues and large boulders to construct the ritual sites as well as utilisation of wood for domestic activities. A factor that facilitated the intensification of cultivation is probably the introduction of the sweet potato (Wallin 1999; Wallin et al. 2005; Wallin 2014). Thereby a population increase could be supported as well as it created a surplus so that the population could focus on competition in constructing ritual sites and statues and adjacent structures. This work and the surplus production were under control of the chiefly segment. Ethnohistoric accounts from the 18-19th centuries indicate that the whole island was cultivated. Research by Stevenson and Haoa (1998), Stevenson et al. (2002), Wozniac (1998) and Mieth and Bork (2010) have confirmed this. Due to deforestation as well as wind and water erosion, new forms of agriculture were necessary. These new techniques include rock mulching in which stones were placed around and on the garden plots to keep humidity and aid soil fertility. In the contemporary barren landscape many of the rock gardens are visible in areas with scattered lava stones usually of fist size up to a couple of decimetres in size. In some places excavations have shown that new soil and fertilisers were produced from cracking up and rubbing the rocks to powder (personal communication Sonia Haoa Cardinali Sept 2013).

The multitude of ceremonial sites and activities in relationship to the production of these sites is remarkable and shows that the cognitive and ideological realm have been very important to the people of Rapa Nui. A phenomenological approach to the landscape and a ‘transported landscape mindset’ based on the Polynesian ideological realm is indicated in oral traditions and place names (Kirch 2001).

To further analyse the past Rapa Nui society we will use the concept of milieu. This word derives from the French words mi (for mid) and lieu (for place) and is often compared with the word environment. To us this concept goes beyond how the word environment usually is
perceived. We define *milieu* as the centre of a place where people acted and lived, which also includes its social and cultural surroundings, as well as the physical location in the landscape. This view includes a theory of practice where the ‘habitus’ of different actors is built-in to the ideas of social order, symbolic power and domination (Bourdieu 1977), and is reflected in the physical remains left behind on the landscape for us to observe. The concept of ‘habitus’ was used and elaborated by Bourdieu in investigating relationships of various groups/classes in French society. He discusses this concept in relation to constructivism, which, according to him;

> is a twofold social genesis on the one hand, the scheme of perception, thought and action which are constructive of what I call habitus, and on the other hand of social structure, and particularly of what I call fields, and of groups, notably those we ordinarily call social classes (Bourdieu 1989: 14).

He writes about cultural capital (e.g. esoteric knowledge, excluding /including), economic capital (e.g. control of material assets and its management) and social capital (e.g. kinship). Symbolic capital is a state of the other capitals and only exists if the values of the other capitals are recognised by other agents within the same ‘field’ (e.g. the chiefs of the various clans/tribes).

Previous studies of *ahu* structures clearly indicated that large ritual centres are distributed evenly all around the coast of Rapa Nui (Martinsson-Wallin 1994; Stevenson 2002). What does this mean in terms of understanding the social organisation and cognitive landscape of Rapa Nui and the concept of senior and junior relationships in prehistory? This is something that we will investigate with two studies in this paper. The first study embraces the ritual sites around the island based on Martinsson-Wallin’s survey (1994) and their relationship to the traditional clan/tribal areas as indicated by Routledge (1919) and Stevenson (2002). A second local case study, will include the large ritual site of *ahu* Heki’i and the adjacent *ahu* Ra’ai, both of which have been subjected to archaeological excavations (Martinsson-Wallin et al. 1996; Martinsson-Wallin 1998). These two *ahu* structures are located on the northeast coast at Hanga Ho’onu bay where an extensive survey has been carried out by Christopher Stevenson and Sonia Haoa Cardinali (2008). The results from these surveys and excavations will be used by
us to understand the dynamics of ritual place. This will display how status and power was used and manifested in the material remains.

Since prehistoric Rapa Nui society was founded on people of Polynesian descent (Mulloy and Figuroa 1978; Martinsson-Wallin 1994; Martinsson-Wallin and Crockford 2002; Martinsson-Wallin et al. 2013) it is likely that important structures and concepts found in Polynesian society, such as the idea of senior and junior branches, have also been central in Rapa Nui, as indicated above. These concepts are important to discuss in relation to genealogies and expressions of status seen in the material remains. This will provide us with a better understanding of the Rapa Nui past, the meaning of the dispersal of monuments and the relationship of material remains observed in the milieu of the monuments. The archaeological remains are grouped around the ceremonial sites in ways that do not just reflect a single household unit but signal the existence of a corporate household or residential activity, a world centred on a strong chief attracting a large part of the population. The concept of house societies (Levi-Strauss 1987; Fox 1993; Kirch and Green 2001; Kahn and Kirch 2013), is here seen as a useful analytical frame to understand agglomerated power seen in the milieu around ahu structures. An analysis in regard to this can show if different power relations may be observed around various monuments.

**RAPA NUI STATUS RELATIONS IN A POLYNESIAN CONTEXT**

It is clear that genealogy and the concept of senior and junior branches were present in Rapa Nui society as well as that these branches were highly competitive in their struggle for power and used status objects in the expression of power. Genealogies were perhaps the most effective way to show status and gave rights to chiefs to claim power and influence in society. Genealogy and the concept of senior and junior branches in the chiefly sections was the core of social organisation and have been described in chiefdoms throughout Polynesia (Sahlins 1958; Goldman 1970). Rapa Nui was described by Goldman as an ‘open chiefdom’ with a high degree of competition for power, since the position of high chief was not directly inherited, but bestowed upon the person best suited for the position within the extended family group (Goldman 1970:17). On account of the complexity and multitude and elaboration of archaeological remains it is suggested that Tongan (see Clark this volume) and Hawai’i (Kirch 2010) societies were highly
stratified by the 16th century. Kirch (2010) has further suggested that Hawai‘i had the characteristics of an early state at the time of European contact. Meleisea (1995) and Martinsson-Wallin (see Martinsson-Wallin this volume) also suggest that Samoa was more stratified in the past than after European contact. We have suggested elsewhere that Rapa Nui society shows tendencies of becoming increasingly stratified subsequent to the societal unrest during the 16th century, just prior to contact, visible in the birdman ritual/festivity (Wallin and Martinsson-Wallin 2011). However, the position of paramount chief over the island was given to one of the leading chiefs as a result of competition and not directly inherited (Métraux 1940: 333).

Social organisation in Polynesia has generally been defined as consisting of ramage groups, a descent group composed of individuals descended from one ancestor through any combination of male and female links, developed out of segmentation into lineages of related individuals headed by a senior male individual (Goldman 1970: 542-549). Several such lineages are also headed by the senior branch that has the closest relation to the common ancestor and several such units made up a clan or tribe group. If the population started to grow due to, for example, favourable economic conditions, this may have led to higher degrees of stratification. Different heads within this organisation were the leaders of different sections but one representative might eventually become the paramount chief. Routledge wrote in a personal communication to Williamson that on Rapa Nui:

...smaller family units aris[e] within the larger family unit, and again subdivid[e]; and that process can be traced, not only in tradition, but in what appear to be comparatively recent times. "The little clans were the children of the big ones." (Williamson 1924 Vol. II: 56).

Routledge mentions that these larger units consisted of ten mata, which she indicated to average about 300 to 400 people each (Sahlins 1958: 168). In traditional history it is also stated that the mata group which descended directly from the first settler supplied the paramount priest-chief or ariki-mau and this position was inherited from father to the eldest son within this family (Métraux 1971: 138-139). However, according to Métraux (1971: 129-130) this paramount priest-chief had power outside his mata only concerning religious matters and not
concerning the political power in the different *mata*. This means that the idea of a paramount chief existed, but was not the ruler over the entire island even though the *ariki-mau* must have had great importance when it came to the religious sphere and how it should be expressed, since we can see quite similar ritual expressions all around the island. Métraux also mentions (1940: 138-139) another important powerful group in Rapa Nui and that was the *mata-toa* or the warriors. Métraux further suggests that the *mata-toa* had the real power and ruled the *mata*, however, as Sahlins suggest, it is quite possible that high chiefs were also war leaders, which is the case all over Polynesia (Sahlins 1958: 168-169).

**Status objects / monuments and expression of power**

Power is usually also expressed in material portable objects (things) as well as in houses and ceremonial structures. This is seen all over Polynesia in staffs, tapa cloth, wood carvings, red feather girdles, fine mats etc. Rapa Nui is extraordinary well represented in exhibiting some of these status objects. There are various kinds of wooden sculptures, excellent stone tools such as large fish hooks, the obsidian spear heads of the warriors (*mata’a*), the rongorongo inscriptions etc. Beside these small objects there were gigantic statues of different size, large ceremonial structures, sometimes with extremely nicely cut stone blocks, as well as chiefly houses called *hare paenga*, the latter with an oval shaped cut curb-stone foundation. Also petroglyphs can be included in “monuments” as places of symbolic meaning.

**RAPA NUI STATUS RELATIONS - KO-TU’U AND HOTU ITI DIVISIONS**

According to Thomson the genealogy of chiefs in Rapa Nui included fifty-seven names starting with *Hotu-matua*. Other records by Jaussen and Métraux include 32 and 29 names respectively, whilst Roussel gave only 23 names. Some names coincide and others are unique to the different accounts (Martinsson-Wallin 1994: 76). As mentioned above, all accounts agree on the point that the first name is Hotu-matua and the second name is Tuu-maheke. However, this suggests the records probably did not include a straight line of successors but rather different important chiefs from different lines. It is therefore quite possible that the first name in the various records was the first chief of
some importance, maybe established by the order of the birdman ritual – in other words the line may not be so ancient. According to traditional history the first high chief Hotu-matua divided the island into different land areas (Figures 2). Thomson (1891: 527) and Métraux (1940: 121) relate that the three oldest brothers belonged to the Ko-tu’u clan (*mata nui*), and the three youngest brothers belonged to the Hotu-iti clan.

The exact prehistoric land distributions are unclear especially regarding the statement in Métraux (1940: 121) that Tuu-maheke got “lands extending northwest from Anakena as far as Maunga Teatea”; the latter location is situated on the Poike peninsula. It is also stated that Ra’a got the land between Hangaoteo to Maunga Teatea and thereby it could be inferred that Tuu-maheke got land from Anakena to Hangaoteo and not all the way to Maunga Teatea since there otherwise seems to be an overlap. However, it has to be considered that original land divisions are likely to have changed over time when the population grew and also due to competition and warfare and that the six sons for example could represent six generations with continuous land divisions. This also pertains to competitions between senior and junior branches both within and among the Ko-tuu and Hoto-iti areas. These two main groups Ko-tuu and Hoto-iti are probably representations of senior and junior clan divisions or branches, since the three oldest brothers were given Ko-tuu and the three youngest brothers Hotu-iti. It is also well known that there were major fights between the two divisions (Métraux 1940: 74). Routledge mentions (1919: 280) the story that when Hotu-matua became old he came to favour his youngest son Hotu-iti, and Hotu-matua was eventually buried at Akahanga probably situated on the border of Ko-tuu and Hoto-iti area, which underpins such a tension and could indicate that the junior branch got more powerful with time, which can be expressed through the elaborated *ahu* complex at Akahanga.

The clans/tribes (*mata*) of Rapa Nui were separate social groups made up of descendants from a common ancestor and traditional history also suggests that among the Ko-tuu and Hoto-iti branches there are yet other divisions and groupings probably also founded on the senior/junior (west/east) concept. This division is probably deeply rooted in the Rapa Nui traditions. If these divisions and competitions between senior and junior branches actually existed as it is stated in the traditional history, they would also be possible to detect in the practices
of how the Rapanui organised their work, and how \textit{habitus} based distinctions shaped the material remains on the island.

**CORRESPONDENCE ANALYSIS OF IMAGE AHU**

To explore if the general Polynesian senior/junior competition concept can be traced in the monumental architecture of Rapa Nui we use earlier collected archaeological data from all around the island (Martinsson-Wallin 1994), and analyse it using relational statistics. A selection of 78 image \textit{ahu} is used in a Correspondence Analysis (CA). The \textit{ahu} numbers and the variables and their numbers are based on the ones in Martinsson-Wallin (1994: 150-160). A selection and re-arrangement of the original variables has been done. The construction variables used in this analysis are the ones listed below with variable numbers seen in the graph (Figure 4), indicated within brackets.

- Ahu size (three variables Size 1, Size 2 and Size 3)
- Shape of central platform (2.2 and 2.3)
- Dressed rear wall (3.2)
- Undressed rear wall (3.5)
- Rear wall of one layer of blocks (3.8)
- Rear wall of two layers of blocks (3.10)
- Rear wall of three layers of blocks (3.12)
- Dressed front wall (3.15)
- Undressed front all (3.18)
- Front wall with lintel of red lava stone (3.19)
- Location of central platform (4.2 projecting towards the sea, 4.3 parallel with rear wall of the wings, 4.4 pulled back from the sea).
- Construction of ramp (5.5 stepped, 5.6 inclined).
- Paved ramp (6.4)
- Unpaved ramp (6.6)
- Absence of wings (7.2)
- One wing (7.4), two wings (7.5)
- Dressed rear wall of wings (8.4) and (8.9 paved with \textit{poro} stones).
- Construction/appearance of plaza (9.4 enclosed or partly enclosed by wall, 9.7, levelled surface, 9.9 partly paved, 9.10 no paving).
• Number of statues (10.3 presence, 10.4 one statue, 10.5 2-6 statues, 10.6 7-15 statues)
• Presence of Pukao (11.2 absence, 11.3 presence)
• Absence (12.2) or presence of crematoria (12.3)

The CA carried out on the 78 ahu, compares each site in relation to each other, as well as to the variables indicated above. This means that similarities and differences are detected in the graph if the sites/variables appear close to each other or not (Figure 4). Different relations which otherwise would have been quite difficult to detect are thereby visualised. When interpreting the graph, we colour coded the two main island divisions (Figure 4). The red field indicates structures tied to Ko-tuu clan areas dominating the western part of the island and the green field indicates structures tied to Hoto-iti clan areas on the eastern side of the island. An additional grey field was also included that comprises small structures from both areas.

Figure 4. The CA of Rapa Nui ahu structures and their connected variables. Red field indicate the Ko Tu’u senior division, the green field the Hotu Iti junior division and the gray field indicate a mixed field of small low status ahu.
Interpretation of the graph
The CA analysis show that status is expressed differently among the prestige monuments in the two main clan districts Ko-tu’u and Hotu-Iti. Variables tied to high status are large size, number of statues, presence of pukao, red scoria lintel, two wings, poro paved ramp and dressed stones, which appear more frequently in the Ko-tu’u division. The analysis also shows trends that Hoto-iti structures can usually be placed in the middle size group (2) and that status ahu in this area are ahu Mahatua, Tongariki och Akahanga. Small structures indicate lower status and are associated with undressed stones, few statues, and one or no wings. Such monuments are situated in both areas which shows that low status (junior distinctions) were not important to express in any distinctive way. Instead their existence was probably of importance as statements of the existence of competitors, which made the senior expressions even more impressive. Senior and junior branches are more visible in the monuments in Ko-tu’u than in the Hoto-iti area, since the lower part of the red field in the graph (Figure 4) includes exclusively Ko-tu’u (senior) expressions and the upper part of the red field merges together with the Hotu-iti (junior) field. Within the green Hotu-iti field the high status structures (Akahanga and Tongariki) are located in the left part of the cluster in close relation to some of the high status monuments of the Ko-tu’u division. Overall, the CA analysis clearly indicates that there is a distinction between the two traditionally indicated main divisions on the island, which in a more or less unconscious way seems to be driven by the ‘habitus’ driven idea of how things should be done which was deeply rooted in what tradition ordinated them to do.

THE LAPEROUSE CASE: INTERNAL ORGANIZATION OF CENTRAL PLACES WITHIN A DISTRICT
To obtain a detailed understanding of the milieu within a lineage group that dominated a district and the local group relationships, we will conduct an in-depth analysis of the ahu-structures Heki’i (Figure 5) and Ra’ai and the adjacent built and natural environment. Local group relationships can possibly be compared to the kind of house society organisation as described by Kahn and Kirch (2013) concerning the organisation of houses and ceremonial sites in the Opunohu Valley in
the Society Islands (see Wallin this publication). These structures were chosen since we have carried out careful survey and excavations at these two ahu sites and therefore know the area in some detail (Martinsson-Wallin and Wallin 2000, Martinsson-Wallin et al. 1998, Wallin and Martinsson-Wallin 1997, 2008). Secondly, Stevenson and his team (that we also collaborated with in 1996-97) have re-surveyed the surroundings of La Perouse and published the results (Stevenson and Haoa 2008).

LANDSCAPE AND LOCATION OF AHU HEKI’I AND AHU RA’AI

Métraux and Routledge indicate on their maps (Figure 2) that the land area where ahu Heki’i and Ra’ai are situated belonged to the Hoto-iti branch, but according to the legend, recounted by Thompson and Métraux, the land from Anakena and eastward towards Maunga Tea-tea was given to Tuu-maheke the oldest son of Hotu-matua and he belonged to the Ko-tu’u branch. This interpretation is also supported by the CA analysis where ahu Heki’i is clearly placed at one end of the Ko-tu’u field (Figure 4). This might indicate that ahu Heki’i, which is a dominant structure on this part of the north coast, could have belonged to a senior branch of the Tuu-maheke lineage. The senior/junior relationships were of course visible also within the lineage groups, and in that light it is likely that ahu Ra’ai is an ahu belonging to a junior branch in relation to

Figure 5. Ahu Heki’i, rear wall.
ahu Heki‘i. In line with this, small ahu located close to these main structures could belong to other senior/junior relations as well as to specialists tied to the main structures. However, different sizes and kinds of ahu structures clearly indicate different distinctions within the group that together was a unit.

**A quantitative study of local relationships at La Perouse (Hanga Hoonu).**
The survey by Stevenson and Haoa (2008) of the La Perouse area, was based on previous surveys carried out by University of Chile. Prior discoveries of archaeological remains were confirmed and new discoveries added on. Our analysis on the two ahu structures mentioned above focused on the type of sites that were found within a radius of 250 meters from each of ahu Heki‘i and ahu Ra’ai (Figure 6).

![Figure 6: The two survey areas indicated by circles with a radius of 250 m from the ahu in the center of the circles (Based on survey map by Stevenson and Haoa Cardinali 2008).](image-url)

A closer description of the remains observed follows below to understand the complexity of the milieu included in the case study areas.
The following features described by Stevenson and Haoa Cardinali (2008: 15-34) have been identified:

- **Ahu** structures and their size (same sizes used as in the CA analysis)
- Semi-pyramidal *ahu* late prehistoric shape of *ahu*.
- Alignments, rudimentary alignments of stones, indicating pathways, agricultural areas or unknown purposes.
- Ana kionga, a modified cave with built entrance.
- Water hole, a fresh water resource.
- Cave, can be of different types with open entrance or a hole into the ground, and different sizes.
- Crematoria, usually located on the seaward side of an *ahu* structure and contain burned human bones.
- Avanga, is a tomb in connection to *ahu* structure.
- Enclosure, is usually shelters of stacked stones or boulders.
- Agricultural feature, of the “rock garden” type or visible as depressions in the ground.
- Hare Moa, or so called “chicken houses” are built of stacked stones containing a chamber.
- Hare Paenga an oval shaped house with a crescent shaped pavement in front of the entrance. Usually called elite house.
- House, stone demarcation square or rounded, may have postholes.
- Mana Vai, are usually rounded stone walled garden enclosures, singular or grouped.
- Cairn, of stacked stones in a conical shape, probably marking boundaries of areas.
- Moai, a stone statue generally carved from the Rano Raraku tuff
- Pavement, usually a small set of beach cobbles (poro stones) in front of an oval shaped house without Paenga stones.
- Paenga stone, a stone that originate from an oval shaped house.
- Beach-canoe ramp is a stone paved area slanting into the sea.
- Petroglyphs, are pecked pictures on flat surfaces showing different kinds of animals, canoes, geometric designs etc.
- Pipi Horeko, are solid circular cairns of stacked stones with flat top interpreted as boundary markers.
• Platform, made of stacked stones in different shapes from squared to circular. Working or resting places.
• Shrine, simple ahu structure.
• Taheta, are artificial depressions in the bedrock or on boulders for grinding stone adze.
• Terrace, interpreted as house foundations located sloping ground.
• Topknot, pukao, the cylindrical shaped “hat” of red scoria placed on top of the statues.
• Tupa, is a tower structure with square to rectangular entrance to a room, sometimes called ‘turtle-watching towers’.
• Umu Pae, an earth oven lined with stone slabs on edge.

By quantifying different types of archaeological remains in the two areas it is obvious that the area around ahu Heki’i has almost twice the amount of archaeological remains as around ahu Ra’ai. This fact indicates a higher degree of competing activities around ahu Heki’i. The composition of archaeological remains around the two ahu sites is similar, but the frequency of remains is much higher around ahu Heki’i. We have interpreted this as ahu Heki’i representing the senior branch ahu with Ra’ai being a secondary junior centre. The dating of the sites also point to Heki’i being founded first (Martinsson-Wallin 1998; Wallin and Martinsson-Wallin 2008).

A few significant differences can be distinguished (Figure 7-9) and they are:

• There is a large elite village (hare paenga houses) in relation to ahu Heki’i, indicating the seniority and status tied to this structure. Food production seen in a larger amount of manavai is also present here, as well as a high amount of umu pae earth ovens for preparation of food.
• The terraces/platforms and topknots are more abundant around ahu Heki’i, indicating a higher population as well as a of a higher status complexity.
• Indications of markings of borders (pipi horeko) are more abundant at ahu Ra’ai towards the south which may indicate that this ahu was in the periphery of the district. It is quite possible that the combined complex Heki’i/Ra’ai actually was
located at the border between the Ko-tuu and Hotu-iti areas on the north coast as probably the Akahanga complex was on the south coast. Both Ko-tuu and Hotu-iti have connections to Anakena in that Hotu-matua landed there and his first born son of was given the northern part from Anakena towards Maunga teatea but according to the legend Hotu-matua himself was buried at the other border, at Akahanga.

- A basalt workshop is indicated at ahu Ra’ai as well as a higher frequency of petroglyphs, indicating diversified working and ritual focuses there, perhaps specialized towards adze manufacturing. A high amount of taheta may also indicate grinding of adzes.
- Natural good access to the sea is also indicated close to ahu Heki’i but not at ahu Ra’ai, which suggests a selected favourable landscape position at Heki’i. To access the sea at Ra’ai necessitated the building of canoe ramps.

![Graph showing actual number of features in each area.](Diagram)
Figure 8. The percent shares of different features within the ahu Heki’i area.

Figure 9. The percent shares of different features within the ahu Ra’ai area.
DISCUSSION AND CONCLUSION

Bourdieu has discussed the functions of kinship and the way that there are official and practical ways to express these (Bourdieu 1977: 33-34). Our two analyses can illustrate such relations. In the CA of 78 ahu structures situated around the whole island, a general trend is shown that the strict genealogical and ritualised expression of power relations involved material statements of group unity which ordered the social world as well as legitimised that order. Such general expressions are seen in the religious architecture and in the manufacturing of the moai statues. Here we argue that social groupings based on senior and junior branches can be detected archaeologically in the status of image ahu structures and how they were distinguished by the combination of different construction variables. Official status was expressed differently in the areas tied to the two traditional main groups called Ko-tu’u, which controlled the western part, and Hotu-iti that controlled the eastern part of the island. These were highly visible expressions acted out by the community directed by the prevailing habitus. It was obvious for the individual to what group their belongings were tied. All are born into one or other of the clans, Ko-tu’u or Hotu Iti. This belonging was expressed into the monuments by practice, which is seen in the Correspondence Analysis as similarities and differences. However, in both clans there are senior and junior branches competing in their own ways. Therefore senior actors in the Hotu-iti clan can be seen as equal to some of the lower senior actors in the Ko-tu’u clan as well as some of the junior actors in the senior Ko-tu’u clan. Such relations make it clear to whom it may be a reason to compete with, since too large gaps in status distinctions may be meaningless or impossible to challenge.

Our detailed case studies of the milieu around these strict official ahu expressions are indicative of the practical use of kin relationships expressed within local groups and are different from the official expression since what we see in these contexts was tied to the daily life within such groups. Smaller and less elaborated ahu structures supported the large official structure, and they were not important for status differentiations, hence they are not especially elevated investments. The most striking difference, besides the supporting smaller and/or less elaborated ahu structures, in the comparison between the two compared ahu milieus is the presence of 16 hare
Paenga houses at Heki’i (Figure 7). In contrast only two such houses are close to ahu Ra’ai. The presence of a high status village and the large sized ahu is a visible status distinction that also demanded higher food production/consumption at Heki’i, visible in an abundance of manavai as well as hare moa structures and in a higher frequency of umu pae ovens (Figure 8-9). Such differences indicate the importance of these house societies and the fashions their official genealogies embedded in the habitus they expressed.

The structuration processes founded in senior and junior relations, which is a common trait in Polynesian societies, can also be seen at all levels from surrounding local ahu, between adjacent ahu structures, as well as in the expression of high status ahu on an island wide scale. The CA analysis shows that the same amount of small ahu existed in both areas, and these structures do not express status distinctions in themselves, but instead probably have the function of being junior expressions or expert structures built to support the main structure in the area. Local and practice based kinship relations can be detected. The local practices observed around a senior structure (Heki’i) and a junior structure (Ra’ai) display that certain actions were undertaken in relation to them. However, a clear household distinction, of different domestic features, was seen in a significantly higher density around Heki’i compared to Ra’ai, and clear differences were also seen in the amount of status houses (hare paenga) (Figure 7-9), and other status features. It is also evident that Heki’i had a more favourable landscape location with access to the sandy beach, as well as water-holes and caves.

To sum it all up we suggest that the distinctions around large ahu structures express the tensions within local groups and their belonging to the larger clan group. It is on the local level that powerful chiefs could exert their power and express themselves through commanding the labour of the bulk of the population. The strong houses could, through strong genealogical connections, attract and feed large groups of people needed for the work involved in the construction of large structures and the making of large moai statues. The attraction of being, as well as belonging to, the realm of a powerful senior high chief dominating large areas decreases the possibilities for competitors to ‘play the same game’. A complete domination of a top title holder ruling over whole islands, was the case in some parts of pre-historic and proto-historic Polynesia.
(Society Islands, Hawaii, Tonga, Samoa), and it resulted in hierarchical solutions where in some cases power became hereditary and divine. However, this was probably not the case on Rapa Nui, instead, competition worked on different levels – from the local family/lineage level to the general clan/island wide level. Internal control was too high to let a single title holder reach the top alone, even if the \textit{ariki-mau} title holder could be distinguished as an island wide authority in certain situations related to ritual. It is also likely that the \textit{ariki-mau} was challenged by the \textit{mata-toa} title holders which are indicated by the violent activities and the deliberate destruction of ceremonial sites and statues.

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THE STONE STATUES AT URAURANGA TE MAHINA, RAPA NUI

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Abstract: Stone statuary represents the most visible monumental feature of the archaeological record for Rapa Nui (Easter Island). The architectural complex at Ahu Ura Uranga te Mahina on the island's south coast reflects a long, complicated sequence of ahu structural evolution, and the centre shows two large, late-period ahu and four earlier or subsidiary structures. At least seven large stone images originally stood on these structures. This paper reports on the statuary study done as part of the UNESCO-JAPON culture heritage conservation project at this complex. The sequence of statuary development represented at Ura Uranga, as well as to the status of images in court areas of ahu, is analysed from the standpoint of sculptural form and shaping, transport, and ritual meaning. A prone court image preserves some detail about the completeness of images that were being transported from the quarry to ahu, and the set of statues overall indicates some aspects of chronological change in style. The research provides new information about specific sets of statues, their use and transformation at ahu complexes, and changes in the monumental significance of stone images on Rapa Nui.

INTRODUCTION

Statuary figures, most often depicting anthropomorphic beings, were traditionally carved both in wood and in stone on Rapa Nui (Easter Island) and in the rest of East Polynesia. The ‘classic’ stone ones on Rapa Nui, called moai, are statues representing humans, typically male figures, and are thought to depict chiefs or ariki. Several are viewed as female figures (Barthel 1958; Van Tilburg 1986). On Rapa Nui, the monolithic statuary ranges in size from smaller than human size to one more than 10 times taller than the human figure. A statistically average image is approximately 4 m tall and weighs an estimated 12.5 metric tons (Van Tilburg 1989). Although there are exceptions, most of these
images consist of the upper portion of the human body, from the top of the head to the base of the buttocks (i.e., head and torso). A few of these human forms were carved from basalt, red scoria, or trachyte, but the majority of statues (some 95%) were made from volcanic tuff, a tephra ash deposit laid down in layers in the Rano Raraku volcanic crater. While nearly 400 moai, in various steps of completion, are still present in the quarry, approximately 350 were moved to ceremonial platforms (image ahu) around the island. The most complete statue inventory includes 961 moai, including those in the quarry and at more than 210 sites (Van Tilburg 2013, pers. comm.). Thus, the statues represent a widely-known example of ‘monumental’ carving both in the statuary and in supporting architecture, the ahu. Treating the statues not in isolation, but as elements of a broader ritual complex provides insight into their significance.

Ahu on Rapa Nui are most often located along the coast and are thought to be the centre of social and spiritual life of the communities that constructed them. Extant ahu monuments show a diversity of form, but four main architectural styles has been described (Métraux 1940). The majority of these ahu are ‘image’ ahu, that is, they were flat platforms (the ‘central platform’) on which the moai statues were erected. Each moai stood on a stone pedestal positioned on the platform and commonly faced inland, overlooking the settlement of those who had erected them. A ramp on the inland side transitions from the platform to a levelled court, sometimes partially paved with stones. In most cases wing-like constructions extend out laterally from one or both ends of the platform, thus visually extending the length of the ahu (Ayres 1988). In many settlements, complexes of two or more image ahu were constructed in close proximity, as new structures were added to the original ahu. Most of these image ahu demonstrate one or more episodes of remodelling, and such structures became typically larger and higher. Older materials were re-used in the new construction (as illustrated in Mulloy 1961; Ramírez and Huber 2000: 56; see also, Martinsson-Wallin 2004).

In addition to the image ahu, other ahu types include the semi-pyramidal ahu, ahu poepoe (canoe shaped), and avanga ahu (burial; see, e.g., Métraux 1940). These three latter ahu types are believed to date to the post-European contact period and all have an important burial function. Many of the former image ahu were converted to create a
semi-pyramidal form by piling up cobble-size rocks; these became locations for burials during the late prehistoric to early historic period, i.e., especially after AD 1722. Cists were made in many former image ahu for tombs and secondary burials (Ayres and Saleeby 2000). Primary or secondary burials were also placed next to or under moai images that had fallen or were pulled down on the ahu (Mulloy 1961; Seelenfreund 2000). The same rocks that often cover human burials also cover fallen images. Cobble- to boulder-size rocks were deposited often on and between two adjoining image ahu, thereby combining them into a new semi-pyramidal formation. These burial functions at ahu seem to have only limited relationship to the carved stone images.

The size and features of moai changed with time, becoming taller and developing more elongated facial features. Stone images of various sizes were being carved in the Rano Raraku Quarry until statue production ceased. Rock characteristics in different parts of the quarry may have played a role in the variability of overall image size and facial features. The statues that once stood on image ahu vary from approximately 1.5 meters to 9.8 meters (Smith 1961; Van Tilburg 1986). Headdresses or topknots made of red scoria, called pukao, once graced the heads of moai on some ahu and these may have distinguished religious leaders or other statuses.

This paper considers the stone statuary that was examined during the 2003 to 2004 UNESCO-JAPON project at the site complex of Ahu Ura Uranga te Mahina (Site EI7-575). The UNESCO project included archaeological investigation and stone material conservation at the site, a ritual centre having at least two large, late-period image ahu that were combined into a partial semi-pyramidal ahu during the late prehistoric–early historic period.

The ahu complex at Ura Uranga consists of two long alignments of partially constructed or destroyed ahu, a nearby architectural set composed of three standard image ahu platforms, and one low terrace without statues (Figure 1).

A naturally raised landform south of the complex shows evidence of construction and burial functions. The ahu supported at least seven Raraku tuff images. An additional intact moai and 5 topknots were also recorded in the fronting ramp and the court inland from the ahu. We wished to determine the specific ages and context of statuary at Ura Uranga, because temporal relationships among differing moai types are
helpful in identifying changes in style, trends in size and architectural association, and possible functional transformations. On Rapa Nui, stone images were likely carved over a period of 400-500 years, from perhaps AD 1200-1300 to AD 1700. We predicted that the images at the investigated site would fall into this range, but recognized at the outset that major differences in style existed. In this paper we discuss the variation in the ages, style, and the context of the moai.

PRIOR RESEARCH ON RAPANUI MONUMENTAL ARCHITECTURE AND STATUARY

Beginning especially in 1955, several archaeologists have examined the structure of ahu and their remodelling stages (Mulloy 1961; Smith 1961; Ayres 1973; Martinsson-Wallin 1994; Martinsson-Wallin and Wallin 2000; Wallin et al. 2010; Martinsson-Wallin et al. 2013). These researchers have shown that ahu construction was underway at least as early as AD 1300 to 1400 (600 to 700 BP). Construction and remodelling of ahu continued until at least the end of the 17th century and statues were transported to and mounted on the image ahu throughout this period. Images deteriorated because of erosion and

Figure 1. View east of the main architecture at Ura Uranga te Mahina, Rapa Nui. The intact Moai UU-15 (7-575-15) is semi buried in the court in front of the ahu. Ahu 4 is to the left in the background (with 3 moai and 2 topknots showing) and Ahu 5 is to the right (with one statue on the surface and 3 buried ones). Ahu 3 is just visible to the left of Ahu 4. (Photo: Joan Wozniak).
purposeful damage and were sometimes replaced and were buried in the ahu during remodelling phases. New images were then carved and erected on the new construction. Later remodelling was oriented towards creating semi-pyramidal structures.

In the 1930s, Father Sebastian Englert began the process of systematically recording the statues (Englert 1965). Mulloy (1970), Ayres (1988), McCoy (1976), Cristino et al. (1981) subsequently added to this database. Van Tilburg's survey of moai, which was designed to examine how statues were carved, moved and typologically organized, has been the most extensive (Van Tilburg 1989 and later). She describes six moai types, and found that approximately 75% represent her Type 1 (Van Tilburg 1994). This type includes such characteristics as a vertically rectangular body and head configuration and an ovoid, rectangular, or semi-circular base shape; similar attributes independent of the overall height and stylistic variation; a head generally making up one third of the total height and well-balanced spatial relationships of the face, head, and neck. Thus, it appears that most moai exhibit similar stylized shapes. Statue carving was done in Rano Raraku using basalt adzes or toki. These were pointed pick tools as well as more standard adzes, many originating at small basalt quarries along the north coast (Ayres et al. 1998). Moai in various degrees of completion, from those still attached to the quarry bedrock to those having a basically finished form are present at Rano Raraku (Heyerdahl 1961; Van Tilburg 2013). Variation in stone raw material and the localization of quarrying activities (see Van Tilburg et al. 2008) may make it possible to determine the provenance of individual statues, including those from Ura Uranga.

After the moai carving was nearly finished, the statues were moved from the quarry to their ahu. The eyes of the moai in the quarry or in transport are ‘closed’, that is, they lack the carved out oval shape of ‘open’ eye sockets typical of statues which had been erected onto the ahu. Open sockets provided a cavity that could hold eye inserts made of coral and obsidian (Van Tilburg 1994).

Several techniques have been described for transport of the moai along established roads described originally by Routledge (1919). Modern experiments began with Heyerdahl’s efforts in the 1950s, including simply dragging them (Heyerdahl 1989). Based on scale
models, Mulloy (1970) offered the first systematically-designed study of statue transport. Among those proposing use of wooden devices, the debate has focused on whether statues were moved in a horizontal or vertical position (Love 1993, 2000). Attempts to move moai face down include fastening the statue to a sledge and sliding or rolling the sledge over logs. (see Van Tilburg and Ralston 1999). To test the hypothesis of ‘walking’ the moai to the ahu, several researchers (Heyerdahl et al. 1989; Pavel 1990; Lipo et al. 2013) have attempted to move a replica statue in a vertical position using only ropes in a fashion in which the statue was wiggled from side to side. While the actual method or methods used to move the moai have not been conclusively verified, several methods were undoubtedly used. It has been established that the carving of moai was nearly completed in the quarry and then the images were moved to ahu.

QUESTIONS ABOUT THE STONE IMAGES
Because the stylized stone statues are Rapa Nui’s most visible and distinctive artefacts, they have received much attention, but many questions about them remain unanswered. Issues important in prior studies of statuary on Rapa Nui and more generally for the Pacific are relevant in discussing the Ura Uranga statue sets (e.g., Heyerdahl and Ferdon 1961; Mulloy 1970; Skjølsvold and Figueroa 1989; Shepardson 2005; Van Tilburg 1994, 2013; Horley 2006). We investigated the diversity of statue sizes and styles to learn about their manufacture, transport, and use. Here, we examine the stone statues as individual monumental artefacts, as well as consider the primary use context to assess their significance and their role in Rapa Nui monumentality.

Our research included 1) viewing statues as artefacts and as central elements in expressions of monumentality, and establishing the chronological patterns of use and discard evident at the Ura Uranga complex; 2) developing additional perspective on how the statues were carved, that is, stone working methods and distinct stages of shaping, specifically before and after transport to the ahu; and 3) investigating what the statue contexts at the Ura Uranga site tell us about statue uses, and by extension, about attached meanings. Visibility, created through investment in material form, is a critical attribute of monumentality in archaeological or other cultural remains. This is often, but not exclusively, expressed deliberately in architectural terms to create
culturally meaningful information. The combination of megalithic stone architecture and monolithic statuary for Rapa Nui creates a particularly powerful statement. The complex iconography of stone statues on Rapa Nui makes for a strong meaning-embedded and visible aspect of monumentality.

Understanding the chronological patterning of events and activities related to the monumental structures is critical (e.g., Mytum 2013: 9). In the Rapa Nui case, much activity and evidence of ritual is associated with statues and the processes of acquiring material, transporting *moai*, placement, and ceremonies conducted using the statues. Even after the initial and primary functions as a statue had ceased, there were subsequent uses, with regard to burial in particular.

**AHU AND SETTLEMENT AT URA URANGA TE MAHINA**

*Ahu* Ura Uranga te Mahina shows the complexity of many ceremonial sites on Rapa Nui, and for that matter of *marae* found in East Polynesia. As such it serves as a good example of changing expressions of monumentality. Ura Uranga is the ritual centre of a prehistoric settlement situated in coastal Quadrangle 7 (See McCoy 1976 for a description of the quadrangle map system). A small bay separates the site from the *Ahu* Akahanga to the northeast. Prior observations about Ura Uranga established that it was a major site among those on Rapa Nui’s south coast probably for approximately 500 years. This is based on fieldwork by W. Mulloy (pers. comm.); W. Ayres (1975); C. Love (map); C. Stevenson (1984); and J. Van Tilburg (1986 and pers comm, 2013.).

The complex includes at least six monumental structures. Following prior naming methods for identifying components of *ahu* complexes, we refer to these as *Ahu* 1 through 6, while Roman numeral designations differentiate stratigraphic units within such structures. Two disturbed structures (*Ahu* 1 and 2) are located to the northeast of the primary image *ahu* set which had been combined and remodelled into one continuous architectural set (*Ahu* 3-5, Figure 2). These structures face onto an inland plaza or court measuring some 60 by 80m. Two additional architectural features are *Ahu* 6 and 7.

In sum, at least seven large stone images made from Rano Raraku tuff originally stood on the two most recently constructed platforms. In addition to the *moai* found face down or partially buried in the *ahu* ramp, there is a solitary *moai* lying face down in the court to the west of
the ahu. Five red scoria topknots (pukao) and additional red scoria blocks in tombs are present at the ahu.

The primary residential area at Ura Uranga is not clearly indicated archaeologically. Elite house foundations made of carved stone slabs (hare paenga) and other habitation sites are usually found inland from the larger ahu centres on Rapa Nui; these identify the primary residential community. However, the settlement of Ura Uranga is difficult to identify as the area has been disrupted by modern roads and by the re-use of rock to build stone fences. Typical house foundation paenga with pecked cupules were not located at the site.

RESULTS OF ARCHEOLOGICAL EXCAVATIONS
The Main Ahu Complex at Ura Uranga te Mahina

The main ahu complex encompasses two image ahu and one buried platform and we here consider the excavations done in these structures, Ahu 3 (the oldest visible ahu), Ahu 5 (an old image ahu), and Ahu 4 (the most recently built image ahu; see Figure 2). Excavations at Ura Uranga confirmed that the individual image ahu had been remodelled several times prior to the three main platforms being joined into the complex visible today.

![Figure 2. Site plan of the three main ahu platforms at Ura Uranga te Mahina, Rapa Nui. (image: F. Rapu C., J. Wozniak, and W. Ayres)](image)
Similar remodelling of *ahu*, the burying of older statues, and the addition of newly carved stone images, has been identified at various *ahu* on the island (for example, Heyerdahl and Ferdon 1961; Mulloy and Figueroa 1978; Skjølsvold and Figueroa 1989; Skjølsvold 1994; Martinsson-Wallin 2000).

*Ahu* 3 is situated to the northeast of *Ahu* 4 and most of this platform appears to have been partially buried in the most recent reconstruction of *Ahu* 4, and some portions of the major wall of vertical *paenga* slabs forming the seawall retainer appear to have been destroyed by tsunami events (Figure 3). Excavations here explored architectural features and construction sequences, but did not expose any buried *moai*. *Ahu* 3 has no *moai* on the surface. It is the oldest of the three platforms and its use may precede that of an *ahu* stage that focused on erecting images on platforms. While the length of *Ahu* 3 cannot be accurately determined at present because it has been de-constructed in part; it does have a well-constructed rear or sea wall of vertical fitted *paenga* slabs (orthostats) resting on top of horizontally placed *paenga* (*rango*). Both ends of this massive retaining wall have been destroyed by tsunami or heavy wave action (See Figure 3).

![Figure 3. View of the southern end of the sea side retainer wall supporting *Ahu* 3 and *Ahu* 4. This was perhaps the rear wall of the original *Ahu* 3 central platform, now buried.](image-url)
Ahu 4 is located between and partially on top of two other ahu, 3 and 5; it supported three large moai, now face-down on the surface of the steep inland ramp and with their bases resting on top of the platform. One of these images was intact, but the other two images are broken at the neck or head. The platform elevation at 9.5m a.s.l. is the highest of the three main platforms, and reflects that it is the most recently built one (Figure 4). It sits partially over and is backed by the damaged sea wall supporting Ahu 3.

Ahu 5 is located at the south-western end of the main Ura Uranga complex. It has a rear wall of slabs but these are not as refined, nor as precisely fitted as the lower retaining wall considered part of Ahu 3. Platform structure Ahu 5 at one time supported at least 4 moai, and it has parts of several moai partially buried in the front ramp (Figure 5). None are intact, but these 4 are visible on the surface or partially buried in the ramp. That one of the buried moai is resting on bedrock under the ramp indicates that Ahu 5’s stone images were in the process of being decommissioned. Four pedestal slab sets are present on the central platform, and another probable statue base, a basalt slab 145 by 170cm
in diameter, is now out of place in front of the Ahu 5 ramp. A well-defined south wing of 20m extends out from the Ahu 5 central platform, but the north one is obscured by a rubble mantle and the construction of Ahu 4. Radiocarbon dating of charcoal found under the semi-buried moai UU-01 (Figure 6a,b) produced a reading calibrated to a range of AD 1440 to 1630 (with 3 intercepts of the calibration curve at 2 SD; Beta 320661; 390 +/- 30 BP). The majority of the sample intercept values fall between AD 1440 and 1520, which we interpret as the original construction period of Ahu 5 (Figure 11). Obsidian hydration dates for material extracted during the excavation of Ahu 5 indicate that the statue burial occurred between AD 1650 and 1750 (Figure 11).

Ahu 4 and 5 are joined by the addition of small rocks piled between the two platforms. One visible tomb was constructed at the ramp junction of these two ahu; the interior of this tomb has red scoria paenga lining one side of the interior. There are numerous piles of basalt rocks, and some pieces of red scoria or scoria topknots on top of the platform and ramp. These rock piles and red scoria are typical of human burials from the historic period (Seelenfreund 2000).

**Stone Statues at Ura Uranga Te Mahina**

The moai at Ura Uranga have been examined in larger island-wide surveys by several researchers (Englert 1965; J. Van Tilburg (since the 1980s); and B. Shepardson 2005). In this paper we use the Easter Island Statue Project (EISP) designations (Van Tilburg 1994, 2013) as they seem to form the most complete moai inventory for Ura Uranga.

Van Tilburg recorded the moai and topknots as 7-575-01 to 7-575-15. Here, we use ‘UU’ and the EISP numbers to identify individual moai or topknots. For example, EISP 7-575-01 is a moai at Ahu 5, and we signify it as UU-01. A total of eight moai carved of Raraku tuff (and 5 scoria topknots) were located at the ahu complex of Ura Uranga (Table 1). These show two statue size groups, but both are Type 1. The seven moai on the ahu platforms have open (oval shaped) eye sockets typical of moai installed on an ahu (Van Tilburg 1994: 133).

The three Ahu 4 moai stood at between 5.5 and 6.6 meters, and are taller than the set of four moai on Ahu 5. The heights for Ahu 5 moai are between 3.0 and 4.0 meters, but these are approximate because the images are fragmented, badly eroded, and partially buried in the ramp (Figure 5). However, the two torsos UU-01 and UU-03 are sufficiently preserved to provide accurate measurements. UU-01 was exposed
during excavation, while UU-03 rests on the surface of the *Ahu 5* platform.

![Figure 5. Plan View of Ahu 5 at Ura Uranga Te Mahina, Rapa Nui. An excavation unit was placed at the south end of the ramp, exposing the buried torso and head of a moai (UU-01a, b (Figure 6a,b). The light shaded structures are pieces of Rano Raraku tuff (moai torsos and heads) of Moai UU-01 to 06. One of the bodies of these moai (UU-03) is intact, but the head is buried in the ramp. Dark-shaded boulders are pedestal stones on the central platform (Image: F. Rapu C., J. Wozniak, and W. Ayres).](image)

All the *moai* at Ura Uranga te Mahina were carved from Raraku tuff, however, the images at *Ahu 5* were made of tuff exhibiting pronounced volcanic ash layering contrasting with the more homogeneous tuff used for the larger *moai* on *Ahu 4* (Figure 7a). Thus the tuff shows thin ash strata when viewing the bases of the *Ahu 5 moai* (especially *moai* UU-03; Figure 7b). All four *moai* at *Ahu 5* had been fragmented into heads and torsos, and some of these parts were then buried in the *ahu* ramp, but only after they had eroded significantly.
Table 1. Description of statues and topknots at Ura Uranga Te Mahina

<table>
<thead>
<tr>
<th>EISP #</th>
<th>UU #</th>
<th>Englert #</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-575-</td>
<td>1</td>
<td>569</td>
<td>moai torso</td>
<td>supine moai torso buried in ramp, Ahu 5</td>
</tr>
<tr>
<td></td>
<td>1a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1b</td>
<td></td>
<td>moai head</td>
<td>supine moai head buried in ramp_to torso 1, Ahu 5</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>568</td>
<td>moai torso</td>
<td>prone broken moai torso (and head?), Ahu 5</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>567</td>
<td>moai torso</td>
<td>prone moai torso, base on platform, Ahu 5</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td></td>
<td>moai torso</td>
<td>supine moai torso buried in ramp, Ahu 5</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td>moai head</td>
<td>supine moai head buried in ramp-head to torso 4?, Ahu 5</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
<td>moai head</td>
<td>supine moai head buried in ramp-head to torso 3?, Ahu 5</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>570</td>
<td>topknot</td>
<td>topknot with knob on top, upright in court; petroglyphs</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td></td>
<td>scoria</td>
<td>topknot? (buried red scoria paenga in ramp), Ahu 4</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>566</td>
<td>moai</td>
<td>prone moai, broken at chin, base on platform, Ahu 4</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>565</td>
<td>moai</td>
<td>prone moai, broken at nose, base on platform, Ahu 4</td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td>563</td>
<td>topknot</td>
<td>topknot on ramp between Moai 10 and 12, Ahu 4</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>564</td>
<td>moai</td>
<td>intact, prone moai, base on platform, Ahu 4</td>
</tr>
<tr>
<td>13</td>
<td>13</td>
<td>562?</td>
<td>topknot</td>
<td>topknot upright on rocks north of Moai 12, Ahu 4</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>571</td>
<td>topknot</td>
<td>topknot on side in court near pirca fence</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td></td>
<td>moai</td>
<td>intact, prone moai, semi-buried in court</td>
</tr>
</tbody>
</table>

Note: EISP refers to statue coding system developed by the Easter Island Statue Project (Van Tilburg 2013); UU# refers to statue coding abbreviation for this paper; and Englert # refers to Father Sebastian Englert’s statue numbering system done prior to the 1970s.

Two *moai* are lying face down at *Ahu 5*. *Moai* UU-02, which is broken at the upper back, is face down and semi-buried in the ramp. A tomb exists under the torso of this *moai*. The torso UU-03 is also lying prone on the platform surface. Another two *moai* torsos and three heads buried within the ramp of *Ahu 5* are supine. Several of the *Ahu 5* *moai* torsos and heads were closely examined during excavations which exposed the buried statues. Of the three *moai* on *Ahu 4*, two are broken but the heads and torsos are still in alignment; UU-12, the tallest *moai* of the complex, is intact (See Figure 4). In addition to the seven *moai* on the *ahu*, *Moai* UU-15 is semi-buried in the court approximately 50 meters west of the *ahu* complex, was found to be intact and measures 3.25 meters in height. The *moai* lies half-buried and face down in sediments. Two excavation units, one at the head and one at the base, exposed the statue’s south side (Figure 8).
Figure 6. Statue UU-01a and 01b, Ahu 5, Ura Uranga te Mahina. a) View to south of the exposed head (UU-01b, foreground) and torso (UU-01a, background) of moai UU-01 at Ura Uranga, Ahu 5. Both were buried in pits, but the head was placed at a slight angle to the centre line of the torso. b) A view to the east of Torso UU-01a, which was exposed during excavation Unit 2, Ahu 5. (photo: J. Wozniak).

Figure 7a,b. Comparison of tuff deposits used for statues placed at Ura Uranga te Mahina, Rapa Nui. a). View of the torso base and pedestal stones of statue UU-12, an intact moai on Ahu 4 at Ura Uranga te Mahina, Rapa Nui. The fine stratigraphic layering, at a bias, in the tuff contrasts with the coarse, sharp delineations of material in Moai UU-03. b). View of the base of statue torso Moai UU-03 showing layering of the volcanic ash deposit. (Photos: Joan Wozniak)
The two units revealed a developed soil layer, and bedrock was encountered between 70 and 90 cm below the surface. Thus we report a total of 8 moai at Ura Uranga, a set of three about 6 meters tall and another of five moai between 3 and 4 meters in height. Differences in moai sizes, i.e., the Ahu 4 moai being almost twice as large as those of Ahu 5, suggest that Ahu 5 is the older of the two image ahu. The court moai, UU-15, is also just over 3 m long. These lines of evidence, size, material, and architectural position, we argue show that the set of 5 moai represent older images. We have preliminary dating for Ahu 4 and 5.

All moai on the ahu complex have been removed or fell from their pedestals; however, the pedestals are still present on top of the two image ahu. There are three pedestals on Ahu 4, each made up of twenty-five to thirty-cm thick rectangular slabs of basalt worked to make the surface level and corners rounded (as viewed in Figure 7a). These may have originally been paenga from Ahu 1. There are 4 pedestals on Ahu 5 (7-8 flat basalt slabs in sub-quadrangular to circular shapes). There is also a possible statue space at the north-eastern end of Ahu 5’s central platform. A 1.5m diameter basalt slab, similar to pedestals on Ahu 5, is present on the court-ahu ramp interface at the junction between Ahu 4 and Ahu 5. The vacant space on Ahu 5 and the proximity of this circular
slab suggest to us that another moai (possibly UU-15) was intended for Ahu 5.

**Specific Characteristics of Moai at Ura Uranga te Mahina**

The four moai found at Ahu 5 include UU-01a, a supine torso buried in the western end of the ramp of Ahu 5, its severed head (UU-01b), also facing up, proximal to the torso (see Figure 5; Figure 6a,b), UU-02 is a broken moai torso -- broken across the upper back—lying face down on Ahu 5 to the east of UU-01, UU-03, a torso tipped over from its pedestal and is resting in a prone position with its base on the inland edge of the Ahu 5 platform, UU-04 is a supine torso mostly buried in the ahu ramp of Ahu 5 adjacent to UU-03, and the two heads UU-05 and UU-06 belonging to the torsos UU-03 and UU-04

The UU-01 moai would have stood at least 3.31 meters tall. UU-02 is badly eroded and semi buried and so its length and width could not be accurately determined. Total length of the moai made up of torso UU-03 and head UU-06 was originally 4.16 meters. The UU-04-UU-05 moai would stand at least 2.96m tall. (See Table 2 and Figure 5).

**Table 2. Size Attributes of Statues at Ura Uranga te Mahina, Rapa Nui.**

<table>
<thead>
<tr>
<th>UU</th>
<th>Englert</th>
<th>Total Length</th>
<th>Torso Length</th>
<th>Base Width</th>
<th>Base Thickness</th>
<th>Head Length</th>
<th>Head Width</th>
<th>Head Thickness</th>
<th>Face Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>569 moai</td>
<td>331</td>
<td>231</td>
<td>148</td>
<td>87</td>
<td>118</td>
<td>112</td>
<td>n.a.</td>
<td>123</td>
</tr>
<tr>
<td>2</td>
<td>568 moai</td>
<td>&gt;199</td>
<td>&gt;199</td>
<td>187</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>3</td>
<td>567 torso</td>
<td>416</td>
<td>255</td>
<td>204</td>
<td>108</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>4</td>
<td>torso</td>
<td>290</td>
<td>&gt;155</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>5</td>
<td>head</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>141</td>
<td>n.a.</td>
<td>n.a.</td>
<td>161</td>
<td>n.a.</td>
</tr>
<tr>
<td>6</td>
<td>head</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>161</td>
<td>n.a.</td>
<td>141</td>
<td>n.a.</td>
</tr>
<tr>
<td>9</td>
<td>566 moai</td>
<td>549*</td>
<td>343*</td>
<td>204</td>
<td>105</td>
<td>222*</td>
<td>150</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>565 moai</td>
<td>631*</td>
<td>382*</td>
<td>200</td>
<td>120</td>
<td>256*</td>
<td>156</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>564 moai</td>
<td>661*</td>
<td>425*</td>
<td>260</td>
<td>160</td>
<td>250*</td>
<td>178</td>
<td>nr</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>moai</td>
<td>325</td>
<td>195</td>
<td>177</td>
<td>85</td>
<td>110</td>
<td>111</td>
<td>70</td>
<td>105</td>
</tr>
</tbody>
</table>

**Notes:** Table 2. Metric attributes of moai at Ura Uranga Te Mahina. Column 1 indicates the moai artefact number and Column 2 shows the number painted on the statue by Sebastian Englert. Note: Underlined numbers are estimates for broken moai. Asterisk (*) numbers are Van Tilburg’s measurements; added together the total length is longer than the two parts (torso + head). Difficulties arise in recording metrics of eroded and broken moai, and even for the intact and better preserved moai. Basic measurements taken of the same moai by different researchers often differ by 10 cm or more.
There is considerable evidence of burial of statues and human remains in the ramp. A burial cist is located under the torso base of UU-02 (see Figure 5). UU-03 has distinctly carved buttocks, as noted by Van Tilburg (1986: 453) and pronounced layering of volcanic ash in its base (see Figure 7b).

The three moai at Ahu 4 includes UU-09, a prone moai broken across the neck and lower face and lying with its base on the edge of the Ahu 4 platform and its head on the ramp. It is the southwestern most of the three moai on Ahu 4. UU-10 is a prone moai broken in the middle of the head and lying with its base on the edge of the Ahu 4 platform and its head on the ramp. This statue lies between Moai UU-09 and Moai UU-12. A topknot (UU-11) sits on the ramp just north of UU 10 and may have rested on the head of UU-10 (See Figure 4). UU-12 is an intact statue lying prone, with its head down slope, on top of the northeastern end of the Ahu 4 ramp. These moai are 5.9 m, 6.31 m, and 6.6 m long respectively (Figure 4; Figure 9).

UU-15 is an intact, prone moai that is semi buried in the court 46 m northwest of Ahu 5. The statue is 3.25 m tall. Excavation at the corners of the head and base of this moai demonstrated that it was in transport.
rather than a finished statue. Exposing the buried face showed that the eyes were unopened (Figure 8; Figure 10), its ears were unfinished and although the arms and hands were present, the fingers had not been carved.

The ears of UU-15 were curved forward rather than lying flat along the head and they were set in the middle of the side of the head rather than close to the back of the head, a position typical of many other moai. The face surface (which was completely buried prior to excavation) was smoothly finished and golden in colour. Chicken bones and human bones were found during excavations of both the head and the base, suggesting that the moai was ritually significant, even though never positioned on an ahu, and was used as a burial site after it became prone.

Comparison of Metric Attributes of Moai at Ura Uranga Te Mahina
We calculated ratios of various moai attributes in order to compare statues (Table 3).
### Table 3. Ratios of Selected Metric Attributes of Moai at Ahu 4 and Ahu 5, Ura Uranga te Mahina, Rapa Nui

<table>
<thead>
<tr>
<th>UU #</th>
<th>HL (cm)</th>
<th>TL (cm)</th>
<th>HL/TL</th>
<th>HD (cm)</th>
<th>HW (cm)</th>
<th>HD/HW</th>
<th>HW/HL</th>
<th>BD (cm)</th>
<th>BW (cm)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>118</td>
<td>331</td>
<td>0.36</td>
<td>n.a.</td>
<td>112</td>
<td>n.a.</td>
<td>0.95</td>
<td>87</td>
<td>148</td>
<td>0.59</td>
</tr>
<tr>
<td>2</td>
<td>n.a.</td>
<td>&gt;199</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>187</td>
<td>n.a.</td>
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<tr>
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<td>n.a.</td>
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<td>85</td>
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</table>

Mean: 75.7 (HL) 458.4 (TL) 0.39 70.00 141.4 0.51 0.79 110.8 197.1 0.56

AHU 5: 140.0 347.7 0.41 n.a. 112.0 n.a. 0.95 97.5 179.7 0.56

AHU 4: 0.0 613.7 0.40 70.00 161.3 0.46 0.67 128.3 221.3 0.58

UU-15: 110.0 325.0 0.34 70.00 111.0 0.63 1.01 85.0 177.0 0.48

SDM: 0.37 0.44 0.59

**Notes:** Table 3. Concatenated statue numbers indicate body parts that fit together. Underlined numbers are estimates for broken moai. Asterisk (*) numbers are Van Tilburg’s measurements.

TL = total length; HL = head length; HD = head depth; HW = head width between ears; BD = base depth; BW = base width HL/TL = head length/total length; HD/HW = head thickness/head width; HW/HL = head width/total length; and BD/BW = base thickness/base width.

nr = not recorded; n.a. = not available.

Mean = mean values for all statues in the set. Ahu 5 shows mean values for the statues from that structure; Ahu 4 shows values for moai on that ahu; and Moai UU-15 = values for that individual statue for comparison.

SDM = Average moai values from Van Tilburg 1986 for >100 moai.

A basic ratio measure is that of head length (HL) to total length (TTL). Van Tilburg (2013) has argued that this ratio is typically close to 0.37. The ratios here are as follows: On Ahu 5, Moai UU-01a + b has a ratio of 0.36; UU-03+ head UU-06 have a ratio of 0.39. On Ahu 4, UU 09 shows a ratio of 0.40, UU-10 has a ratio of 0.41, and UU-12 calculates as a ratio of 0.38. Head length (HL) to total moai length (TTL) has a ratio of 0.34 for the court moai, UU-15. Thus, the ratios are consistent with the broader pattern of the head being somewhat over 1/3 of the total statue height. However, it appears that the Ahu 4’s later images have a somewhat longer head relative to the total length compared to the earlier ones.

Another basic ratio is the torso base thickness (BD) to base width (BW). The moai of Ahu 5 for which we have measurements show the BD/BW ratios of 0.59 (UU-01) and 0.53 (UU-03), while the court moai (UU-15) had a ratio of 0.48. We were not able to measure UU-02 because the
The figures show that moai UU-09 and UU-10 have ratios of 0.51 and 0.60, while UU-12 has a ratio of 0.62. Its thickness was slightly greater than the other two moai on the same ahu, although it was only slightly taller than those two.

Thus, there is considerable variation in the entire group positioned on an ahu, however, the figures suggest a relationship between increasing statue height and increasing ratio values of BD/BW for the Ahu 4 set. It may be a larger sample will show that the shorter statues tend to have a lower ratio (see Table 3). Although preservation problems limit the number of measurements, some ratios of head thickness (HD) to head width (HW) are available, specifically, to compare the court statue UU-15 (0.63) to moai UU-09 on Ahu 4 (0.42). This suggests that the older moai may have a higher value for this comparison. However, more measurable faces would be required to test this association.

Statue head length makes up slightly more than one third of the total height of the Ura Uranga statues, in line with the one third figure as calculated by Van Tilburg for the majority of moai in her larger sample. This suggests that dimensions had been worked out by the carvers to create images that were stable when placed on the ahu and that these ratios were adhered to over an extended period of time even as moai increased in size. Moai UU-15 appears to be an outlier in this regard. However, because we have found that it was on its way to the ahu, it cannot be directly compared to moai standing on central platforms, as additional carving was planned. The base and head of UU-15, and likely those of other moai in transit to an ahu, was thicker than the final intended dimensions. This may be to account for damage expected to vulnerable parts of the moai during transport from the quarry to the ahu.

**Dating the Ahu and Moai at Ura Uranga Te Mahina**

Preliminary dating from charcoal retrieved from the excavation of moai UU-01 at Ahu 5 indicates that the latest image stage was constructed in the late 15th or early 16th centuries (Figure 11). Ahu 5 was in the process of being remodelled at the turn of the 18th century as shown by obsidian hydration dates of volcanic glass retrieved from upper layers of the same excavation.
Obsidian from the excavation of the court *moai*, UU-15, demonstrates that UU-15 was being transported across the court when it fell or was laid down in its prone position in the latter half of the 17th century. Additionally, the UU-15 excavation indicates the court *moai* was used ritually in the early 16th century. The overlap of obsidian dates from both the court *moai* and the remodel of *Ahu* 5, as well as the radiocarbon date, suggest the *ahu* construction and *moai* transport activities were related. Additional obsidian hydration readings, not shown here, confirm that the statue bearing phase of *Ahu* 4 post-dates the statue-related activities at *Ahu* 5.

**DISCUSSION AND CONCLUSIONS**

A model from oral history and comparative Polynesian evidence is that the Rapanui people viewed their ancestors as directly descended from their founding father, Hotu Matua, and through him, the gods Tangaroa and Rongo (Métraux 1940: 58-60, 127). Ancestors were represented in the *moai* statuary, and placing them on *ahu* served to put them in active ritual status. Certain ancestors eventually became deities or were so
personified; they would become larger than life, and we see the tendency of the *moai* carvers to make them larger and larger over time. At Ura Uranga, we can view the ceremonial *ahu* with statues in the process of being remodelled, reconstructed, and deconstructed—a common ritual and spiritual process in the life of a Rapanui community. We have investigated the range of image sizes and styles at Ura Uranga and provide here new data on the manufacture, transport, and use of stone images on Rapa Nui. Prior observations suggested that at least three, probably four, building stages represent the main constructions, and at least two of these involve the use of monumental statues and stone building.

The large number of distinct structures for which the term *ahu* would be appropriate (*Ahu* 1-7), suggests a long period of remodelling and expansion, as well as probable functional variation, covering the latter part of the Rapa Nui archaeological record. At least two different sets of images were made for these *ahu* platforms. The set of four *moai* placed on the older *Ahu* 5 range from 3 to 4 m tall and the group of three placed on *Ahu* 4 are 5.5 to 6.6 m tall. The range of these *moai* sizes, from 3.0 to 6.6 m in length, overlaps the size of the average *moai* size for the island as a whole (4.05m and 12 tons) calculated by Van Tilburg and the average size (3.78m) of images placed on *ahu* (Van Tilburg 1994: 23, 28). The age of the Ura Uranga images covers at least 200 years, from perhaps AD 1500 to possibly AD 1700, although there is a longer sequence at Ura Uranga te Mahina that is not at present known in early statuary.

**Chronological Patterns of Statue Use and Discard**

New evidence about the chronological context of stone statue use on Rapa Nui comes from recent work on a number of sites, including the Rano Raraku quarry (Van Tilburg et al. 2005), *Ahu* Hekii (Martinsson-Wallin 1998; Wallin et al. 2010), and Poike (Cauwe et al. 2006) as well as Ura Uranga. Major *ahu* construction around the island may have commenced by about 750-600 BP/AD 1250-1400 (Wallin et al 2010; Martinsson-Wallin et al. 2013). However, the installation of larger than life *moai* made of Rano Raraku stone is towards the end of this range. Smaller stone images or wood ones may have been used on the earliest *ahu*, as was typical of East Polynesian cultures, and such stone images, now out of context, are known; however, the date at which the first *moai* were carved and transported to an *ahu* has not yet been determined.
Based on the emerging dating of Ura Uranga and other sites, we estimate that the larger *moai* on Rapa Nui were likely carved over a period of 300 years, from perhaps AD 1400 to 1700. We have offered evidence for the specific ages of statuary at Ura Uranga, and examined the temporal relationships among these *moai* types and architectural elaboration.

With regard to *ahu* constructions, we considered whether the platforms with the statues (image *ahu*) represent contemporaneous or sequential constructions, and which construction was the earliest part of the complex. Dating of Ura Uranga is not completed; however, based on architectural relationships, stratigraphic indicators, state of conservation, radiocarbon readings, and obsidian hydration dating results at present, the use of the latest set of images (the three on *Ahu* 4) is thought to date to the AD 1650s era, but possibly as late as the early 18th century (See Figure 11). There are structures earlier than this at *Ahu* 4, but no statuary is known for those. *Ahu* 3, which has no known statues in association, predates both *Ahu* 4 and *Ahu* 5. The set of smaller images on *Ahu* 5 pre-dates the *Ahu* 4 statue set by approximately 100 years, thus AD 1450 to 1550 for their initial use. Abandonment of the *Ahu* 5 platform as an altar for *moai* may date to the late 1500s to early 1600s. We conclude that statue UU-01 was buried in the *ahu* ramp before AD 1750 (and perhaps as early as AD 1650). In addition to breakage, the *Ahu* 5 statue UU-01 shows extensive erosion prior to being buried. The court image, UU-15, was lying face-down as early as AD1650-1700, and contrasts with UU-01 in showing only post-depositional erosion on its exposed surfaces. Thus, radiocarbon evidence suggests that *Ahu* 5 was used in the 15th century, and more recently (late 17th century to early 18th century) it was being remodelled for non-statue use and increasingly as a site for burial. The *Ahu* 5 statues, based on their sizes, context, and other attributes such as ear shape, stone type, body form, can also be chronologically placed in this order.

**Statue UU-15 and its Significance**

Statues were carved and finished to a high level in some cases while still in the Rano Raraku quarry or prior to transport as seen in the statue UU-15. Based on the examples of statues put into use and those eventually replaced or removed during *ahu* remodelling we observe that those *moai* transported from the quarry had the appropriate head and
torso proportions and many facial and body details configured while still in the quarry. However, as Moai UU-15 indicates, statues destined for ahu placement exhibit proportionally larger head and base sizes than ones already erected on an ahu. Those parts of moai images most likely to sustain injury and wear during transport, such as the torso base, were carved, in at least some cases, to leave extra material in place until the moai was in position on the ahu. This then included reducing the depth of the head, the depth and width of the torso base, the detailed carving of the ears and eyes, and in some cases the carving of fingers along the moai stomach.

The isolated moai (UU-s15) located face down in the court and positioned closest to Ahu 5 is most similar to the set of smaller moai found on that structure. The significance of this moai is that based on its style and size it was being transported to and added to the set already on Ahu 5. The north end position in the statue line on the platform appears to be vacant, and a pedestal slab lies near the ramp. A significant point is that the court moai has its head facing away from the ahu for which it was intended, and this is contrary to most of the proposed methods of transport of moai to ahu. Prior to it being abandoned, we conclude that the statue was being reversed on its way to the ahu platform.

The court moai can be compared to those that have been clearly modified for active use that stood on the two late ahu platforms at Ura Uranga. The image is considerably smaller than, and shows distinct stylistic features compared to the three large images on Ahu 4. We interpret this to mean that the wide base was to be reduced in size and other details were to be finished once it was placed on Ahu 5; however, the finely carved head features and smooth surface of the face indicates that most of the facial carving was done prior to placement on the ahu.

While there is evidence that moai UU 15 was still in transport, it does, nonetheless, provide some evidence of having been actively involved in ritual. Cobblestones (poro), red scoria, and coral pieces were placed systematically at the head and at the torso base of the moai after it came to rest. As well, human and avian bones were found in the excavated pit under the stomach of the statue. We conclude that this moai was still considered imbued with mana as burials and offerings took place despite it being unfinished (i.e., carved ears, eye sockets, hands).
Context and Meaning of Statuary
The context of the statues at Ura Uranga informs us about the logistics of using stone images, the specific functions of statuary and their meaning systems. The meaning attached to moai images is thought to be closely associated with the concept of mana, which is embodied in the statuary that represented the ancestors of the community, in this case, with the chiefs and religious leaders of the community. Together with a population increase, ahu-structures were added, and formed a larger architectural complex consisting of separate platforms increasingly being integrated into one overall arc of ritual facilities on the shoreline. Each of the image ahu within the complex was itself remodelled multiple times. Often, the older statues were buried within the new ahu and the statues of their descendants were erected over them on the new platforms. The addition of platforms with new moai is likely to represent newly added chiefs as ancestors, providing a means for a new chief to show ritual power (see Martinsson-Wallin 1994, 2001).

There is no evidence at present to contradict the widely referenced idea that the Rapa Nui stone images represent ancestors of distinct social groups residing in and using a ritual complex, ahu, for ceremonies that connected the ancestors with their descendants. Among many significant meanings associated with stone statues, one must have been related to size, which is exaggerated for effect, a fundamental concept of monumentality. The evolution of statue size and of some other attributes can be related to the idea that ancestors could become deities and thus their status and significance could be reflected by increased size. The expansion of ceremonial contexts for Rapa Nui statuary may be usefully compared to Hawai’ian and other East Polynesia elaborations of the marae complex over periods of several hundred years. This represents increasing - but clearly spatially-limited and fluctuating - chiefly control over monumental constructions (e.g., see Kolb 2006). What is different about these expressions of visual impacts of monumentality on Rapa Nui is the exceptional role of stone statuary.

As the period of primary moai use in the form of images standing on a platform came to an end, the statues at Ahu Ura Uranga te Mahina continued to retain their mana. Those moai, which were pulled or fell down, served as special locations where rituals were performed and that people were buried long after they were removed as standing images. This applies to the red scoria topknots as well as statues. Human
bones, placed next to or under the fallen moai or in the ahu ramp, may replicate the burying of the ancestor statues, i.e., the moai buried in the ramp of ahu, as at Ahu 5. Interring the statues themselves appears to reflect a burial concept parallel to how humans were treated, that is, burial at an ahu.

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