

De-coding the Archaeological Landscape of Samoa: Austronesian Origins and Polynesian Culture

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ABSTRACT

The archaeology of Samoa relates to two key points in Asia-Pacific culture history that may or may not be inter-connected. First, the Samoan islands are situated near the eastern limit of the Austronesian Lapita-associated expansion into Remote Oceania about 2800 years ago. Second, these islands are near the western boundary of the Polynesian cultural region, where distinctive Polynesian language, cultural practice, and archaeological material signature developed by 1000 years ago. When considering how these two points might be inter-connected, variable potential interpretations are in need of updating according to the current archaeological evidence as reviewed here.

Two primary viewpoints have characterized academic debates about the relationship between the earliest and latest material culture records of Samoa. One viewpoint stresses long-term continuity, so that a direct link is claimed between Austronesian origins and Polynesian identity. Another viewpoint stresses long-term transformation, so that a disjuncture is claimed between first human settlement and later cultural developments. In fact, continuity and transformation are not mutually exclusive of each other, but rather they represent the different aspects of how a society has changed in some ways more slowly (stressing continuity) or in other ways more quickly (stressing transformation) over time.

The relative values of continuity and transformation have been misunderstood in the absence of clear archaeological evidence spanning the full chronological range in Samoa. For example, sites of the earliest settlement period 2800–2500 years ago are just very few in number, so their limited records are difficult to compare with the abundant evidence of the last 1000 years. Additionally, the sites dated in the 1500-year-long range between 2500 and 1000 years ago have been under-appreciated, despite their importance in comprehending a decline and eventual loss of pottery production, change in housing forms, and emergence of stonework monument-building traditions.

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An updated review of Samoan archaeology here proposes a new chronological outline, covering the full sequence of 2800 years. Within the limits of available site records and radiocarbon dating, the material culture and associated contexts can be defined in at least five periods of: 1) 2800–2500 years ago; 2) 2500–1800 years ago; 3) 1800–1000 years ago; 4) 1000–200 years ago; and 5) the last 200 years. Each of these periods involved internal change, so that possible sub-periods may yet be discerned according to continued research. The transitions between each period should not be misunderstood as precisely fixed, but rather they are proposed as approximate estimates that undoubtedly will be refined with further evidence.

The chronological sequence serves as a fundamental baseline for addressing several archaeological questions that otherwise have been ignored or misunderstood. The main focus here is to consider the variable rates of cultural change over time. Some aspects of the archaeological record changed more quickly or more slowly than others, but all of these factors were concurrent. Additional questions may yet be addressed more productively, for example concerning chronological change in human-environment relations, economic subsistence strategies, land-use practice, and overseas contacts.

This review of Samoan archaeology potentially can serve as an example of how to reconcile notions of cultural continuity versus transformation over time. These two processes were not necessarily opposing forces, but rather they co-occurred throughout the Samoan cultural history chronology. They unfolded at variable rates and rhythms, and they were associated with changing conditions of culture and environment, as outlined in the comprehensive chronological sequence.

Key Words : Samoa, Polynesia, archaeology, culture history

INTRODUCTION

The islands of Samoa occupy a key position in the large-scale geographic distribution and culture history of Austronesian-speaking populations (Figures 1 and 2). About 2800 years ago, these islands were among the eastern limit of Lapita-associated migrations into Remote Oceania. About 1000 years ago, Samoa was part of a homeland of the Polynesian groups who colonized the farther eastern islands of the Pacific. The archaeological sequence in Samoa potentially can clarify the relationship between an ancient Austronesian settlement and the known Polynesian culture of today, although this potential contribution needs updating with the current archaeological evidence.

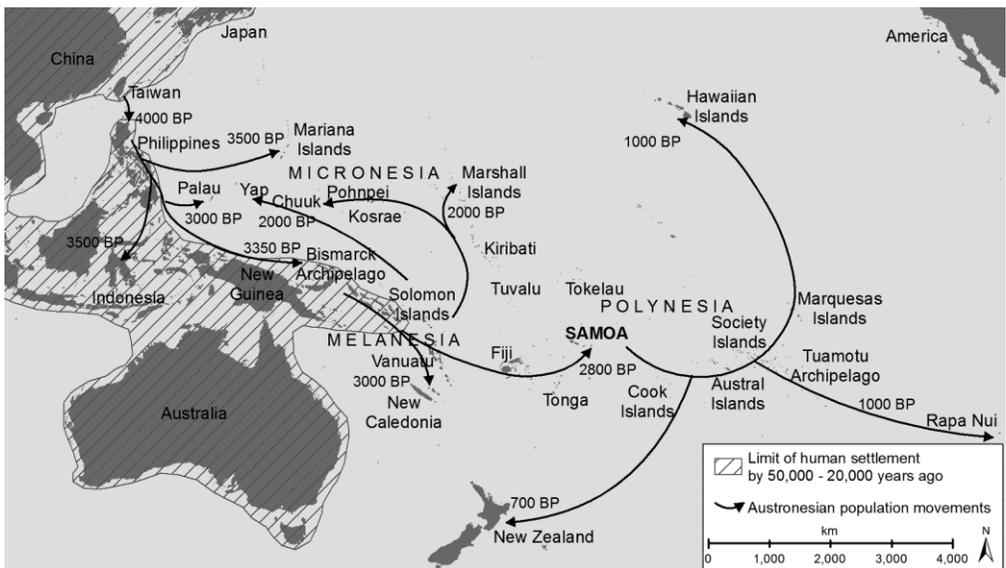


Fig. 1: Position of Samoa in Pacific Oceania, in relation to major patterns of Austronesian settlement.

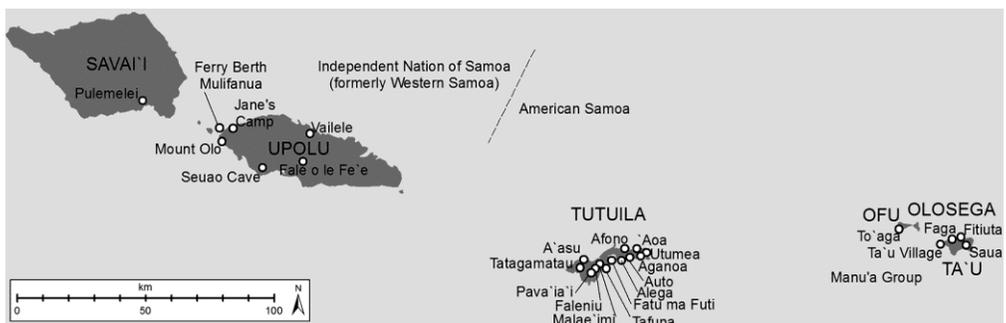


Fig. 2: Islands of Samoa, showing major sites as mentioned in the text.

Archaeologists are not alone in identifying Samoa as crucial in studying cultural origins. In local traditions, the eastern point of Samoa facing the sunrise, specifically at Saua in the island of Ta‘u, was the place of the first *kava* ceremony and closely related with Polynesian cultural identity, as popularized in the famous work of cultural anthropologist Margaret Mead (1930). Other islands of Polynesia bear names that apparently refer to Samoa as a homeland. For instance, Tokelau (literally “windward”) is situated to the windward (northeast) of Samoa, and Tonga (literally “leeward”) is situated to the leeward (southwest) of Samoa. The Polynesian mythical homeland of Hawa‘iki happens to be a linguistic cognate of the Samoan island of Savai‘i, but it also is a linguistic cognate of the island of Hawai‘i.

Linguistic studies have identified the Samoan language as very certainly part of a Polynesian subgrouping within the Austronesian family (Marck 1999), thus implying an older Austronesian ancestry that developed over time into the Polynesian languages as known today (Blust 2013). Today’s Samoan language has developed its own characteristics that are distinguished from other Polynesian languages, yet a mutual ancestry is evident among all Polynesian languages. This shared origin points to a founding population in the distant past, at a time when people first settled in the islands of Polynesia, including Samoa. At that time, attested archaeologically around 2800 years ago, people spoke an older form of Polynesian language now conceptualized by linguists as Proto Polynesian, sharing much in common with ancestral forms of Austronesian languages that subsequently underwent localized change among the speech communities living in Samoa and other places.

For the last several decades, archaeologists have been aware of layers of older Austronesian and newer Polynesian cultural associations in Samoa and more broadly in West Polynesia. This idea first was expressed in the literature by Kenneth Emory (1959:34): “people of somewhat diverse origins came together in a western archipelago in the Polynesian area about B.C. 1500, and, in comparative isolation, their descendants, their language and their culture took on features which the Polynesians now share in common and which give them their distinctive characteristics.” Roger Green (1991) clarified that the first immigrant colonists throughout the remote islands of Melanesia, Micronesia, and Polynesia all shared an Austronesian ancestry dating at least 3000 years old, followed by later periods of localized developments of unique cultures that today are recognized as each different in their own ways. David Burley (2013) proposed that multiple factors of internal cultural change, cross-cultural contact, and varied social and political developments all have contributed to the complex formation of locally specific cultures in Samoa, Tonga, Fiji, and other places over an extended period of time ever since the first Austronesian settlement of these remote islands.

Archaeologists today generally agree that Polynesian culture developed locally within West Polynesia, but they express different viewpoints about how strongly the ethnohistorically known Polynesian culture reflects a deeper Austronesian ancestry. In one view, by emphasizing notions of long-term continuity, Patrick Kirch (2000) has stressed the points of direct linkage between an original Austronesian settlement and an ethnographically attested Polynesian culture, not only in Samoa but also generally in Polynesia (see also Kirch 2010). In another view, by emphasizing the differences over time in the material record, Anita Smith (2002) called attention to an apparent disjuncture

between the oldest and youngest cultural periods in Samoa and more largely in West Polynesia. Addison and Matisoo-Smith (2010) hinted at a two-layer chronology of an older Lapita-associated settlement, followed by a later influence moving through Micronesia into West Polynesia. Although multiple episodes of sea-crossing cultural contact likely occurred, the notion of any large-scale cultural replacement is contradicted by the linguistic evidence and archaeological records of Micronesia in relation to those available for Melanesia and Polynesia, as seen in a recent review of Micronesian prehistory (Carson 2013).

The two viewpoints about Samoan archaeology do not necessarily disallow each other, but rather they give differential emphasis on the roles of sustained enduring culture versus significantly changing culture over time. While some aspects of culture have changed rapidly, others have changed more slowly. As exemplified in the work of Fernand Braudel (1949), those rapidly changing elements of a society are like ripples on the surface of water, while those slowly changing elements are like the enduring depths of the ocean. The slowly changing or long-term stable elements may be understood as the deep structure of the *longue durée* of history, in contrast to the rapidly changing elements of *histoire événementielle* of factual historical events.

Here I propose that the development of Polynesian culture in Samoa can be understood as resulting from concurrently changing elements of cultural history, involving diverse yet co-occurring paces and rhythms of change. Materially detectable elements of settlement structure, resource-use patterns, forms of housing, and types and styles of pottery and other artifacts all have changed for their own reasons and at their own rates or rhythms through time, but occasionally they coincided at the same points in time. When they happened to coincide or inter-relate, then cultural change was more dramatic at a fundamental systemic level of the society.

A deep system-wide cultural change may have been rare, but it evidently occurred at least twice during the 2800-year-long culture history of Samoa (Figure 3). First, the context of initial settlement with dentate-stamped Lapita pottery evidently underwent major transformation around 2500 years ago. Second, the last 1000 years of clear and strong Polynesian association are characterized by a different set of material culture traits than the much older time periods of 2000 or more years ago, including a change from pile-raised housing to ground-level housing and a curious loss of pottery. A closer examination in the present study considers how these transformations in the Samoan archaeological record developed at different yet concurrent paces and time scales.

The present work here examines the material evidence of how the factors of both cultural continuity and transformation have co-occurred in variable degrees over time. Chronological issues have been difficult to resolve, because Samoan sites mostly are restricted to narrow temporal windows that are not always compatible with one another. Most sites hold evidence of just a few centuries each, and multi-site comparisons have been complicated by uneven reporting and inaccessibility of the primary datasets.

The material archaeological evidence is encoded in layers of a landscape, often difficult to disentangle when the landscape is viewed in its present form and cultural

context. Many sites of stone-filled house foundations, large stone-piled mounds and walls, adze quarries and workshops, stone-lined pathways, and entire village complexes are known in surface-visible settings, but these large and impressive sites contain evidence generally of only the last 1000 years in direct association with robust oral traditions and folklore. Subsurface layers in some locations refer to more ancient contexts of earthen-filled terraces bearing pottery and other artifacts, now buried and partly obscured by the more recent site ruins. Even older materials are found in deeper layers that once were shoreline settings, now greatly transformed by change in regional sea level, tectonic movements, and large-scale patterns of slope erosion and re-deposition.

The full chronology of material remnants cannot be ascertained solely from surface surveys and oral histories, but rather a comprehensive chronological perspective requires attention to the processes that have affected the landscape as it is viewed today. The present work de-codes and reconstructs the layers of the Samoan archaeological landscape in five general time periods, calibrated in years before present (BP): 1) initial settlement by seafaring Austronesian immigrants 2800–2500 years BP; 2) adaptations to changing coastal zones 2500–1800 years BP; 3) patterns of earthen-filled terraces and pottery-making 1800–1000 years BP; 4) production of stone-filled house foundations, large stonework monuments, industrial scale and export of stone tools, and eventual absence of pottery 1000–200 years BP; and 5) adaptations to modern conditions of a global context within the last 200 years BP.

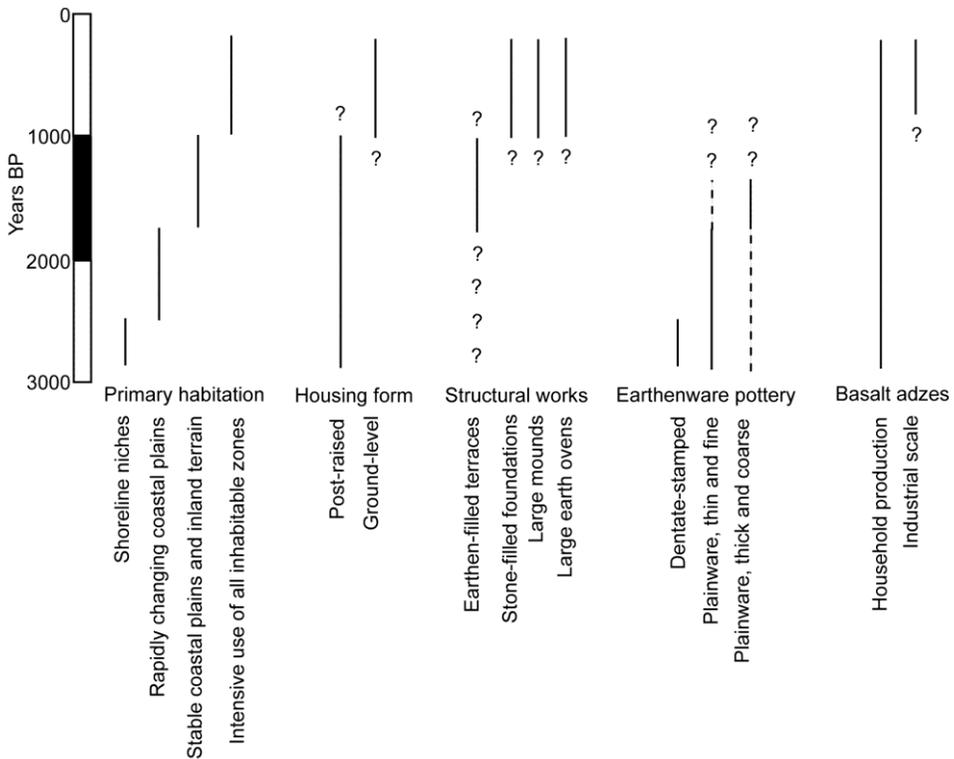


Fig. 3: Summary of Samoan archaeological chronology.

SAMOAN ISLANDS AND ARCHAEOLOGY

The archaeological sites of Samoa are found in each of today's inhabited islands, all classified as volcanic land masses in the humid tropics of the central Pacific. The volcanic origins have created certain types of landforms that have influenced the potential for human habitation and land-use, for instance with mixed areas of rocky ridges, stream-cut valleys, overall steep slopes, and limited coastal plains (Figure 4). The humid tropical environment has been overall productive for plant growth and for creating stream-fed water supplies, thus supportive of long-term residency and varied forms of land-use practice.

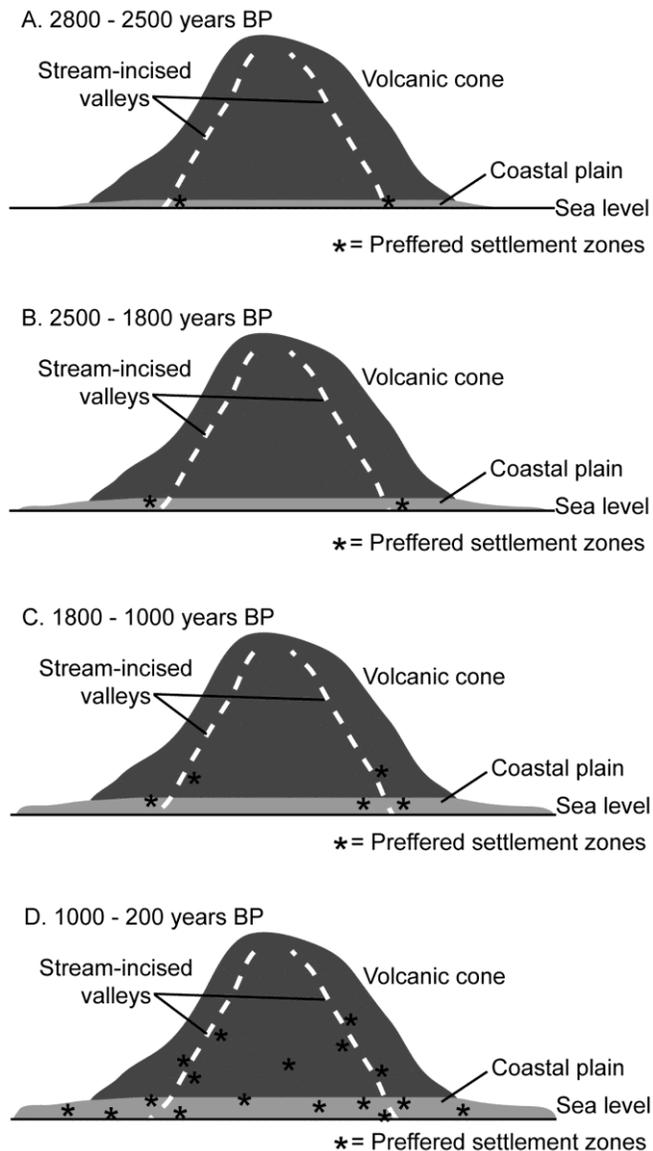


Fig. 4: Schematic model of Samoan landform and settlement chronology.

The core geological formations essentially achieved their present-day basic shapes prior to human habitation about 2800 years ago, but several details clearly have changed over this long time range (Nunn 1994, 1998). The oldest formative volcanic eruptions occurred some millions of years ago in the west and about 100,000 years ago in the east of the archipelago, but considerable volcanic activities have continued historically and even today in several places (Keating 1985, 1992; McDougall 1985; Stearns 1944). These later volcanic events occurred within the temporal scope of human habitation, and they accordingly have influenced human use of the landscape, for example forcing people to abandon the particular areas affected by lava flows and ash falls. Additionally, the distributions of specific landforms and ecological zones have been re-shaped over time by change in sea level, tectonic movements, and slope erosion-deposition patterns, all within the time range of human habitation.

The present study narrates a chronology of how the archaeological landscape of Samoa has changed through time. A prior summary of traditional Samoan land-use practice has been instructive (Carson 2006) and developed more fully in recent studies (Quintus 2012), now updated according to chronological details as outlined here. A similar approach was encouraged by Roger Green (2002), recognizing that the spatial patterns of settlement and land-use in Samoa have changed chronologically. In other words, the present-day appearance of the Samoan archaeological landscape needs to be de-coded of its multiple layers and re-organized in a chronological order.

Chronological change in an archaeological landscape has been under-appreciated in Samoan archaeology and overall in Polynesia for some decades. Most research has emphasized the accessibility of surface-visible ruins, in many cases associated with living cultural traditions. Surface surveys have been extremely productive for understanding the recent past or potentially as much as the last 1000 years of occupation, for example with detailed maps of village settlements as prepared by Holmer (1980) and by Jennings et al. (1982). Nonetheless, the subsurface components still need to be considered for a full understanding of the chronological sequence.

The abundance of surface-visible stonework ruins throughout Samoa can be interpreted with reference to a rich ethnohistorical context, wherein the abandoned stonework features are associated clearly with household residences, cooking houses, workshops, pathways, ritual activity centers, and other components of a traditional settlement pattern. This approach allowed Roger Green (1967, 1970) to formulate a comprehensive model of Samoan and Polynesian settlement patterns, interlinking the archaeological findings with linguistic and ethnohistorical contexts. This approach further was expanded for a “triangulation” of Polynesian archaeology, linguistics, and ethnology as a means to reconstruct an ancient Polynesian society (Kirch and Green 1987, 2001).

A distinctive Polynesian culture must have developed in Samoa and generally in West Polynesia by 1000 years ago. This assertion follows from knowing that the farther eastern islands of Polynesia first supported human settlement about 1000 years ago (Spriggs and Anderson 1993). Those initial founding populations in East Polynesia must have originated from the older established cultural occupations in West Polynesia, including Samoa.

West and East Polynesian sites share much the same forms of stonework construction, spatial organization, and associated cultural traditions linked with language and ethnohistory, as stressed by Roger Green (1986, 1993). Moreover, pottery artifacts were missing from these later contexts in both West and East Polynesia, so pottery-making must have been a dead or dying art prior to the expansion of populations from the West to the East of Polynesia about 1000 years ago. The only exception so far has been one site bearing a few potsherds in the Marquesas Islands of East Polynesia, most likely related to an initial settlement followed by total absence of pottery (Allen et al. 2012).

The evident material culture of East Polynesia logically can be attributed to an ancestry that developed in West Polynesia by 1000 years ago. The specific material signatures in the archaeological record include: a) an emphasis on stonework house foundations, supporting ground-level houses; b) village layouts with specifically designated activity areas for dwelling houses, cooking houses, community rituals, and other purposes; c) increasing production of stonework monument structures; d) decline and eventual loss of pottery; and e) increasing emphasis on stone tools, especially polished adzes made of volcanic stone. When did these traits develop, and how did they relate to older traditions? Can any other aspects of the material culture inventory be added to this list?

Today, the surface-visible sites are recognized as dating generally within the last 1000 years, thus representing only one rather recent portion of a much longer cultural sequence that began about 2800 years ago. These facts force a re-consideration of how the archaeological landscape has changed through time, in ways that cannot be ascertained through surface survey and ethnohistory. The definitively Polynesian cultural contexts of the last 1000 years may be quite well documented, but questions still need to be addressed about how these contexts developed from older periods of Austronesian ancestry.

Of particular interest are the transitions from older pile-raised housing and pottery-making to later ground-level housing and absence of pottery. The older patterns link closely with Austronesian contexts in Island Southeast Asia, whereas the later patterns exemplify the richly known ethnohistorical contexts of Polynesia. Moreover, house forms and pottery are strong reflections of cultural practice and identity, so their apparent chronological transformations are important for understanding the basic culture history sequence.

The entirety of Samoan archaeology cannot be reviewed here, but rather the present goal is to examine the roles of long-term cultural continuity and transformation in the full 2800-year-long chronology. Summaries of the regional material culture and chronology have been available in prior works by Te Rangi Hiroa also known as Sir Peter Buck (1930), Jeffrey Clark (1996), Burley and Clark (2003), and Bayman and Calugay (2014). Additional reviews of the local research history have been published by Martinsson-Wallin (2007) and by Davidson (2008). A compilation of Samoan radiocarbon dating is especially useful (Rieth and Hunt 2008).

2800–2500 YEARS AGO

This earliest period of human settlement in Samoa is known so far through very few sites, all depicting shoreline-oriented communities. Dentate-stamped Lapita style pottery has been reported in one instance of the Ferry Berth Site at Mulifanua of Upolu (Jennings 1974; Leach and Green 1989). Non-decorated earthenware traditions without diagnostic Lapita decorations have been reported at ‘Aoa along the northern coast of Tutuila (Clark 1993a; Clark and Michlovic 1996), at Aganoa also in Tutuila (Pearl and Sauck 2014), and at To‘aga on the southern shore of Ofu (Kirch and Hunt 1993).

The scarcity of diagnostic dentate-stamped Lapita pottery in Samoa appears anomalous in contrast to the more numerous Lapita sites in other island groups such as in Fiji and Tonga, but at least three factors can be considered. First, decorated Lapita pottery typically accounts for just a very small percentage of collections in other sites of the region, so the small scales of excavations in Samoa perhaps have not yet recovered enough material to detect the presence of Lapita pottery except in the one case of massive removal of sediments through dredging of the Ferry Berth Site at Mulifanua. Second, so far no attempt has been undertaken to search explicitly for ancient buried cultural layers that likely are obscured beneath very different landforms and environmental conditions of today (Dickinson and Green 1998; Green 2002). Third, the dating of the oldest habitation sites in Samoa at 2800–2500 years BP was near the end of the production of Lapita pottery throughout the Remote Oceanic region, evidently very short-lived within a window of just a few centuries (Nunn and Carson 2015).

The Ferry Berth Site at Mulifanua now is submerged offshore of the island of Upolu (Dickinson 2007; Dickinson and Green 1998), in a layer containing marine shells dated by radiocarbon about 2850–2700 years BP (Petchey 2001). According to the sedimentary matrix of the cultural layer at Mulifanua, the pottery and shell midden originally were deposited in an ancient sandy beach very close to sea level, perhaps even in an inter-tidal or shallow sub-tidal zone. The submergence more than 2 m below today’s sea level is curious, given that the regional sea level actually dropped by 1.5–2 m since approximately 3000 years BP (Dickinson 2001). In this case, the associated geological landform at Mulifanua most likely has subsided by at least 1–2 m since the time of the Lapita pottery deposition, due to the heavy loading by the weight of young lava flows in this area and throughout the island, as reviewed by Dickinson (2007).

The oldest cultural deposits at ‘Aoa, Aganoa, and To‘aga all are buried beneath present-day coastal plain landforms, but originally they supported habitations very close to ancient seashores, similar to the setting at Mulifanua. The original beachfront contexts were transformed substantially, due to the regional sea-level drawdown of 1.5–2 m and associated changing coastal ecologies. The old beach deposits eventually were buried beneath layers of storm-surge sand and slope-eroded sediments. Although local tectonic movements counter-acted the effects of sea-level drawdown, the total end results were not as dramatic as the offshore submergence of the Ferry Berth site at Mulifanua. Instead, the ancient shoreline-oriented cultural habitation layers at ‘Aoa, Aganoa, and To‘aga all have become stranded somewhat farther inland and buried beneath layers of recent sediments.

Radiocarbon dating has been reported for each of the sites of 'Aoa, Aganoa, and To'aga. Dating at 'Aoa points most likely to an initial settlement around 2900–2700 years BP, judging by overlap of the lowermost and uppermost dating samples (Clark 1993a; Clark and Michlovic 1996). Dating at Aganoa indicates an oldest habitation of the ancient beach at least as early as 2600–2500 years BP (Pearl and Sauck 2014). First cultural use of To'aga is ascertained through a broad error range of a single charcoal sample at 3057–2351 years BP, as compared with much older dates of marine shells that so far cannot be corrected for local marine reservoir effects (Kirch and Hunt 1993).

The initial shoreline settlements in Samoa about 2800–2500 years BP may be compared with others in nearby island groups of Fiji and Tonga. The first human settlement in Fiji is evidenced by Lapita pottery sites, dated as old as 3000–2800 years BP (Nunn and Petchey 2013), originally at stilt-raised houses over the inter-tidal or shallow sub-tidal zones (Nunn 2005, 2007, 2009). Similar findings have been reported for Lapita pottery sites in Tonga, dated as old as 2900–2800 years BP (Burley et al. 2012), originally in unstable beachfront settings that later were transformed by lowering sea level and changing coastal morphologies (Dickinson and Burley 2007).

First human settlement about 2800–2500 years BP in Samoa appears consistent with the larger regional pattern as seen at sites of the same age Fiji and Tonga. These initial occupations all were in beachfront settings, where people relied heavily on coastal and marine food resources. The limited excavations so far do not reveal the specific house structures of this early age in Samoa, but the settings strongly suggest stilt-raised houses near the water's edge. This form of housing was most thoroughly documented at the Bourewa Site in Fiji (Nunn 2009), and a similar situation may be inferred for the oldest sites in Samoa pending further excavations.

Samoa sites at 2800–2500 years ago clearly are within the scope of a later end of the Lapita association of the larger region. The diagnostic dentate-stamping of Lapita pottery so far has been found at only one Samoan site of the Ferry Berth at Mulifanua, but the more abundant findings of plain (undecorated) pottery resemble much of the same plainware tradition as seen broadly throughout the Lapita realm throughout Island Melanesia and West Polynesia. The plain potsherds contain mostly calcareous beach sand temper in a fine clay paste, broken from thin-walled vessels, in contrast to a later preponderance of volcanic sand temper, coarser clay paste, and thick-walled vessels.

In addition to the pottery, the other artifacts of this earliest cultural period are sparse, but they resemble the findings of other Lapita sites as reviewed by Kirch (1997). These materials include basalt adzes and flakes, shell bangles, and very rare occurrence of shell fishing hooks. The few numbers of basalt tools appear to be related to general wood-working activities, and apparently the earliest inhabitants were adept at finding the appropriate geological sources for making these tools in the Samoan volcanic landscape. The cut and polished shell bangles could have been arm-bands, bracelets, anklets, or similar body ornaments. Fishing hooks are quite rare at this time, but they resemble simple rotating hooks, made of *Turbo* sp. shells.

2500–1800 YEARS AGO

By 2500 years BP, undecorated “plainware” pottery characterized sites of Samoa as in most areas of West Polynesia, while decorated Lapita pottery had ceased production throughout the Remote Oceanic islands of Southern Melanesia and West Polynesia. As reviewed by Nunn and Carson (2015), the end of decorated Lapita pottery coincided with a drawdown of sea level, change in coastal morphology, overall less productivity of the nearshore coastal zones of Lapita-age sites, and cultural adaptations to these changing conditions. The older habitation sites no longer could provide the kinds of nearshore food resources that had been targeted prior to 2500 years BP, so instead people shifted to live in slightly different locales where they could rely more on terrestrial-based plant foods.

The impacts of coastal change in Samoa were somewhat different from the larger regional pattern, because the effects of sea-level drawdown were counter-acted at least partially by localized volcanic subsidence in some but not all areas. The Ferry Berth Site at Mulifanua apparently became too far submerged to support further habitation (Dickinson and Green 1998). At the same time, people abandoned the ancient beachfront at ‘Aoa in Tutuila, as this area became covered by slope-eroded sediments and transformed into a prograding coastal plain (Clark and Michlovic 1996). The coastal ecology clearly was changing at Aganoa with a lowered sea level, different composition of sediment budget, and increase in slope-eroded sedimentation although people continued to live there (Pearl and Sauck 2014). Habitation similarly continued through changing coastal conditions at To‘aga in Ofu (Kirch and Hunt 1993).

During the period of transforming coastal conditions of 2500–1800 years BP, people of course continued to use coastal areas, but they needed to adapt to the new settings of available landforms and natural resources. People no longer could rely on exactly the same ecological zones that indeed were changing quickly along the coastlines, so instead they shifted their attention to more stable landforms. Communities abandoned sites such as ‘Aoa, while they made localized adjustments of their occupations at sites such as Aganoa and To‘aga. In addition to the newly modified forms of coastal habitations, people began to live in slightly more landward zones, where they could rely more on tree and root-tuber crops.

In addition to the continued but modified habitations as noted, newly inhabited sites of the period 2500–1800 years BP have been reported at Pulemelei in Savai‘i, at Jane’s Camp and Vailele in ‘Uplou, at Utumea in Tutuila, and at Ta‘u Village in Ta‘u. A partly disturbed layer with plainware pottery was found beneath the Pulemelei Mound Complex in Savai‘i (Martinsson-Wallin et al. 2005). In Upolu, a dense midden deposit with plainware pottery was documented at Jane’s Camp (Jennings and Holmer 1980; Smith 1976), and another subsurface layer with plain earthenware pottery was documented near the Vailele area (Green and Davidson 1969, 1974). At the east end of Tutuila, a newly stabilized coastal area was inhabited at Utumea (Moore and Kennedy 1999). A similar case of a newly stabilized coastal plain landform was occupied in Ta‘u Village at the west end of Ta‘u (Hunt and Kirch 1987, 1988).

The plain earthenware pottery of 2500–1800 years BP overall appears to have continued from the traditions of earlier centuries. The key difference after 2500 years BP

was the absence of dentate-stamped Lapita pottery in the total inventory. The plainware pottery generally was made of fine clay paste and using beach sand temper mixed with varying amounts of volcanic sands or other inclusions. In some cases, the clay paste appears more coarse, and these pieces tend to be somewhat thicker (mostly about 8–11 mm) than those made of the finer paste (mostly about 3–5 mm). Nearly all of the pieces were broken from simple cups and bowls, although a few pieces may represent flatter objects such as platters.

1800–1000 YEARS AGO

The period of 1800–1000 years BP apparently was the most crucial in terms of a changing material culture, not only in Samoa but also generally in West Polynesia. A prior emphasis on coastal zones by now had been adapted into a broad-spectrum subsistence economy and land-use pattern in both coastal and inland areas, beginning as early as 1800 years BP. Pottery ceased production mostly by 1000 years BP, although the precise dating varied from one location to another, followed by increasing prominence of large earth ovens. Also by approximately 1000 years BP, earthen-filled terraces of probable post-raised houses were replaced by stone-filled foundations of ground-level housing.

Beginning as early as 1800 years BP, a significant increase is noted in the cultural use of inland areas, while people also occupied the newly stable coastal plains. Several new inland habitation sites consisted of earthen-filled terraces on the hillslopes, and charcoal-flecking indicated inland forest-clearing or preparation of cultivation fields (Carson 2005, 2006). Meanwhile, the regional sea-level drawdown had slowed considerably by 1800 years BP (Dickinson 2001), and accordingly people could make productive use of the stable coastal plain landforms and associated nearshore ecological zones.

The sites of this period can be characterized by the same general series of earthenware pottery of prior centuries, yet the amount of thick-coarse pottery appears to have increased steadily in comparison to a declining amount of thin-fine pottery. In addition to this overall trend, the production of pottery appears to have ended in some sites as early as 1500 years BP (Addison et al. 2008), although it continued as late as 700 years BP at a few sites (Clark 1996). A precise ending of pottery-making cannot be applied uniformly across the islands of Samoa, but rather it ended mostly (albeit perhaps not entirely) by 1000 years BP.

Reasons for the cessation of pottery-making are not yet understood, although several ideas have been proposed. Probably the most reasonable notions are concerning a change in the role of women as the primary pottery-makers (Marshall 1985), a shift in cooking strategies to emphasize earth ovens rather than pottery (Leach 1982, 2007), and other possible change in the use of pottery for presentation, ritual, and other contexts (LeMoine 1987). In any case, the end of pottery-making in Samoa evidently was part of a larger regional loss of pottery-making throughout West Polynesia and Eastern Micronesia, mostly ended by 1000 years BP, in contrast against the continued traditions of pottery-making farther west in Island Melanesia and in Western Micronesia.

The decline of pottery-making before 1000 years BP coincided with a number of other transitions in the material culture of Samoa and generally in West Polynesia. For instance,

pottery so far never has been reported inside any of the stone-filled foundations of ground-level housing after 1000 years BP, but rather the pottery consistently is found in layers beneath and pre-dating the stonework foundations, inside older earthen-filled terraces, or in ancient beach surfaces unrelated to any clear types of housing structures. Additionally, pottery ended production around the same time of an increasing number of large community-serving ovens, most prominently after 1000 years BP (Carson 2002) and reflecting a new preference for cooking without pots.

The known sites of this period are numerous, although this period has been described as a poorly known “Dark Age” in the region (Davidson 1979; Rieth and Addison 2008). Nearly all of these archaeological deposits are in subsurface contexts. The ancient cultural layers now are covered by more recent slope-eroded sediments and often by constructions of stone-filled house foundations clearly of later-aged associations.

Perhaps the best documentation of this period so far has been at several earthen-filled terraces that each contain plainware pottery in the lower hillslopes of Tutuila, in the present-day villages of Faleniu and Pava‘ia‘i (Figure 5). In the different terrace features, radiocarbon dating of charcoal spans the full period of 1800 through 1000 years BP, but the youngest are dated just slightly later (Carson 2005). These terraces now are obscured beneath ongoing hillslope erosion (Carson 2006), and many have been buried beneath more recent stone-filled house foundations and other stonework structures that lack any pottery whatsoever. In scattered localities without any earthen-filled terraces or pottery, subsurface layers of charcoal flecking indicate that people at one time had cleared the local forests, most likely in preparing the land for cultivation, and these instances of charcoal flecking have produced radiocarbon dating over the same broad range of 1800 through 1000 years BP (Carson 2006).

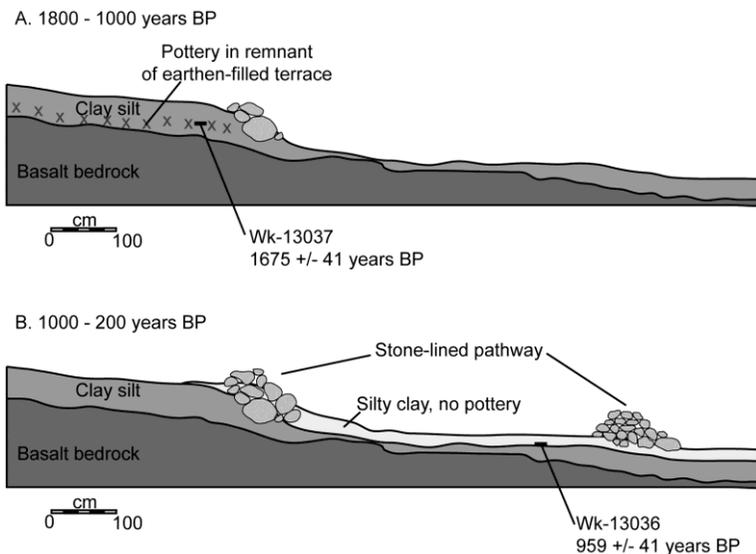


Fig. 5: Excavation profile of a pottery-bearing earthen-filled terrace, overlain by stonework. Modified from data reported for Site AS-31-131 in Faleniu, Tutuila (Carson 2005, 2006).

Other site deposits of this period have been studied less intensively, but they can be considered in four major groups. The first group consists of subsurface layers bearing plain earthenware pottery, beneath and pre-dating the foundations of later mounds or house foundations, as documented at Pulemelei in Savai'i continuing as late as 1180–960 years BP (Martinsson-Wallin et al. 2005) and at To'aga in Ofu about 1800–1450 years BP (Kirch and Hunt 1993). The second group similarly consists of subsurface layers beneath stonework foundations or gravel-filled pavings, but these occurrences all are lacking any pottery, as documented at Tulaga Fale about 1260–910 years BP (Hewitt 1980a; Jennings and Holmer 1980), at Apulu about 1280–970 years BP (Holmer 1980; Jennings and Holmer 1980), and at Ten Points about 1700–1370 years BP (Hewitt 1980b; Jennings and Holmer 1980). The third group consists of stone-filled foundations or gravel-filled pavings for ground-level housing, consistently lacking any pottery, as documented at Maloata in Tutuila about 1300–1000 years BP (Ayes and Eisler 1987), at Fatu ma Futi also in Tutuila about 1600–1000 years BP (Addison and Asaua 2006), and at a few separate localities of Faga in Ta'u dated variably over a range of approximately 1300 through 800 years BP (Cleghorn and Shapiro 2000; Shapiro and Cleghorn 2002). The fourth group refers to radiocarbon dates of this general time range, although the cultural associations are unclear in relation to specific artifacts, midden, or burial features at Afono, Amaua, Auto, Fagamalo, Lauli'i, Malae'imi, and Vaiputo all in Tutuila (Addison and Asaua 2006; Eisler 1995; Suafo'a 1998).

Taking all of these findings into account, significant transitions in Samoan material culture were underway prior to 1000 years BP, but the precise dating is uneven from one site to another. Accordingly, these transitions probably occurred over an extended period of a few centuries. The transitions in effect by 1000 years BP included a decline in earthen-filled terraces and pottery making, replaced by stone-filled foundations of ground-level housing without any pottery. Additionally, several new traits eventually characterized the subsequent period clearly post-dating 1000 years BP, such as impressive mound complexes, industrial scale of stone adze quarries, and prevalent use of large community-serving earth ovens.

1000–200 YEARS AGO

Sites of the period 1000–200 years BP can be found throughout each of the inhabited islands of Samoa, almost entirely in surface-visible contexts that are easily accessible today. Abandoned house foundations, pathways, community-serving ovens, adze-making workshops, and other features together reflect the layouts of old villages. Each present-day village is built over the remnants of an older village dating to this period, and in fact many of the older stonework ruins have been re-cycled or re-modelled for continued activities. In the present-day forests and farmlands, additional ruins can be found in great abundance, also dating to this same time period.

Archaeological sites of this period are too numerous to attempt an inventory here. The present summary must be acknowledged as representing only the major patterns of the period 1000–200 years BP, although degrees of diversity and aberrant anomalies exist. The apparently most representative examples are in sites of Mount Olo in Upolu (Holmer 1980; Jennings et al. 1982), Faleniu and Tafuna in Tutuila (Carson 2005), Alega also in Tutuila

(Clark 1993), and Saua in Ta‘u (Bayman and Calugay 2014; Hunt and Kirch 1987, 1988). Large-scale regional surveys depended on surface observations of sites dating to this later period, as reviewed by William “Pila” Kikuchi (1963) and by Janet Frost (1978). Of note, Roger’s Green’s (1967, 1970) analysis of Polynesian settlement patterns referred extensively to his observations of structural features in Samoa dating within the last 1000 years.

Virtually every part of the Samoan islands today is known by a traditional Samoan name, and each place-name is associated with a literal and figurative meaning. The Samoan language has persisted in daily practice, so that the literal meaning of every place-name can be recognized by everyone. The figurative meanings of associated ethnohistories, however, often require local knowledge for the fullest appreciation. For instance, today’s village of Faleniu in Tutuila instantly can be understood as related somehow to a “house of coconut,” knowing the root words of *fale* (literally “house”) and *niu* (literally “coconut”), but interpretations can vary about the origins of the village name in the local ethnohistory.

According to genealogical reckoning, many Samoan oral histories, place-name stories, and other traditions can be traced back as far as 1000 years BP or perhaps slightly earlier, so this information is directly relevant to the archaeological record of 1000–200 years BP. The complexities of Samoan ethnohistory can be comprehended only through long-term familiarity with the language and studying with knowledgeable individuals and families, but certain aspects have been commemorated in written texts. The best known examples were recorded by John Fraser (1892, 1896, 1897a, 1897b, 1897c, 1898), John Stair (1895a, 1895b, 1896), Augustin Kraemer (1902 in German: 1994 translation in English), and J. Derek Freeman (1943, 1944a, 1944b). John Charlot (1990, 1991, 1992) synthesized these and other primary sources, adding a thorough critical analysis.

The abundant surface-visible components of the Samoan archaeological landscape very easily can be understood as reflections of former village settlement systems. Sites of this period have been documented extensively through surface surveys, taking advantage of the accessible conditions to make observations throughout large areas of land (e.g., Green and Davidson 1969, 1974; Frost 1978; Jennings and Holmer 1980; Hunt and Kirch 1987, 1988; Jennings et al. 1976; Kikuchi 1963). These findings naturally refer to the last time when people inhabited the sites in question, where the surface-related layers consistently have been dated within the range of 1000–200 years BP.

Settlement systems of 1000–200 years BP most clearly are detectable in the stonework foundations that once supported ground-level houses (*fale* in Samoan language). These features most often are composed of a perimeter of cobbles and small boulders, surrounding an interior spaced filled with smaller cobbles and pebbles (Figures 6 and 7). The interior filled space typically is covered with a paving layer of small pebbles called *‘ili ‘ili*, in contrast to the larger cobbles or boulders positioned around the perimeter. In plan view, the foundations often are oblong or oval-shaped with rounded ends, but still many others are rectangular in layout. The stonework in effect makes a slightly raised foundation above the natural ground surface, and then a house is constructed directly over the stonework foundation.

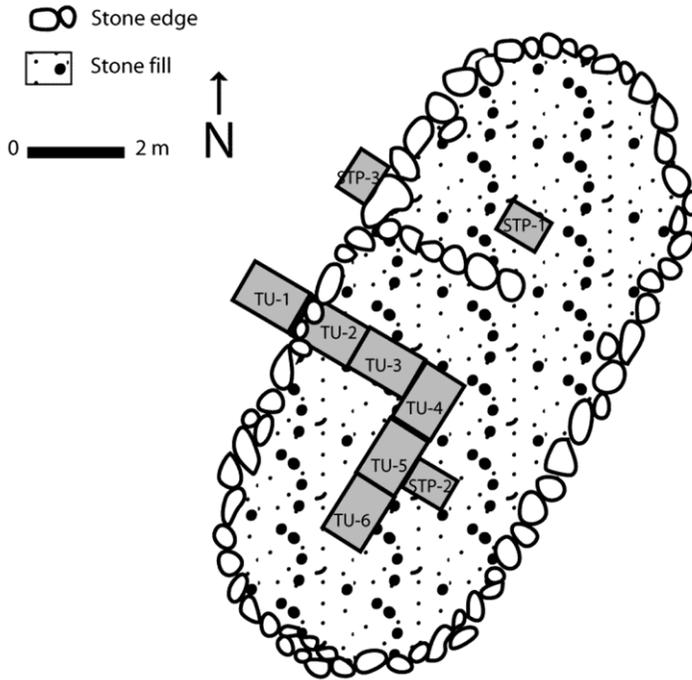


Fig. 6: Archaeological map of stone-filled foundation of a ground-level housing structure, oval in plan view. Modified from data reported for Site AS-31-072 in Tafuna, Tutuila (Carson 2005).



Fig. 7: Photograph of a stone-filled foundation of a ground-level housing structure, rectangular in plan view with interior main foundation and adjoining patio space, in Site AS-31-131 in Faleniu, Tutuila.

Precise functions of any individual *fale* can be inferred from the associated artifacts and midden, the size of a stonework foundation in comparison to others, and the location of each feature within the larger site complex. The larger-sized features likely were more suitable for community-serving events such as public meeting houses, although some were used by chiefs who generally occupied larger houses than others. The smaller-sized features could represent dwellings of ordinary (not chiefly ranked) people, cooking sheds, places of ritual worship and offerings, stone tool-making workshops, or other functional categories that potentially can be ascertained through the associated artifacts and midden. Specific functional categories sometimes are given Samoan names, such as *fale aitu* (literally “god house” in reference to a place of religious ritual) or *fale umu* (literally “earth oven house” in relation to a cooking shed).

The *‘ili‘ili* pavings can be found not only inside house foundations but also outside these foundations, associated with various kinds of activity areas. Often, a thin layer of pebbles can be found covering the ground outside the front edge of a formal house foundation, resembling an outdoor patio space generally one footstep down from the central stonework foundation. In some cases, a layer of pebbles can cover a much larger area, for example covering the ground between two or more houses.

Pathways reveal much of the social use of space, but they are not always detectable in the archaeological record. These features are most obvious in the cases of stone-lined pathways, formed by long rows of piled stones on the two sides of an elongated cleared space (Figures 8 and 9). Many others are difficult to identify without any such long-lasting material marker, for example formed simply by the repetition of foot traffic through the grass, visible to people while in use but eventually becoming completely lost after some generations of non-use.

Pathways most often relate to the use of space within a village, but they sometimes can connect two or more villages. Within a village complex, most of the residential houses are distributed along the edges of the pathway, although some are found at a farther distance that possibly reflect differential social, economic, or political ranking. In some cases, two or more villages are connected by stone-lined pathways, thereby indicating the stronger relations among these villages in contrast to other villages that are not connected by these pathways.

Among residential spaces, earth ovens (*umu*) provide especially durable material markers, often found as small features within cooking sheds (*fale umu*) but also found in isolation as especially large community-serving features (Figure 10). Both types are made by the same strategy of: 1) digging a pit into the ground; 2) making a fire that will heat a set of stones; 3) allowing the stones to radiate heat for cooking the desired food items; 4) covering the food and heat-radiating stones with other material such as banana leaves, other leafy mass, and sometimes portions of the soil-heap from the pit in order to retain heat and moisture inside the oven; and 5) removing the contents after the cooking is ascertained to have been completed. The spoil-heap from such a cooking pit tends to create a raised rim around the edge, and some of those features with notably pronounced rims have been described as “raised rim ovens.”

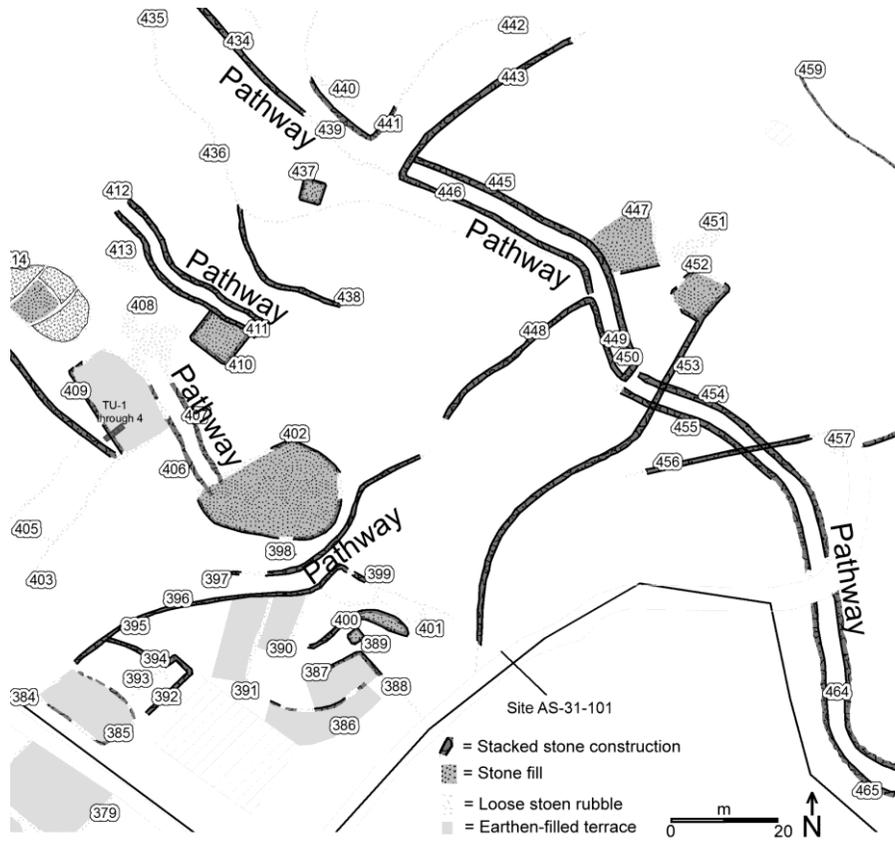


Fig. 8: Portion of an archaeological map showing remnant segments of stone-lined pathways in relation to other features, in Tafuna, Tutuila. Modified from data reported for Site AS-31-101 in Tafuna, Tutuila (Carson 2005).



Fig. 9: Photograph of a portion of a stone-lined pathway, Site AS-31-101 in Tafuna, Tutuila. Scale bar is in 10-cm increments.

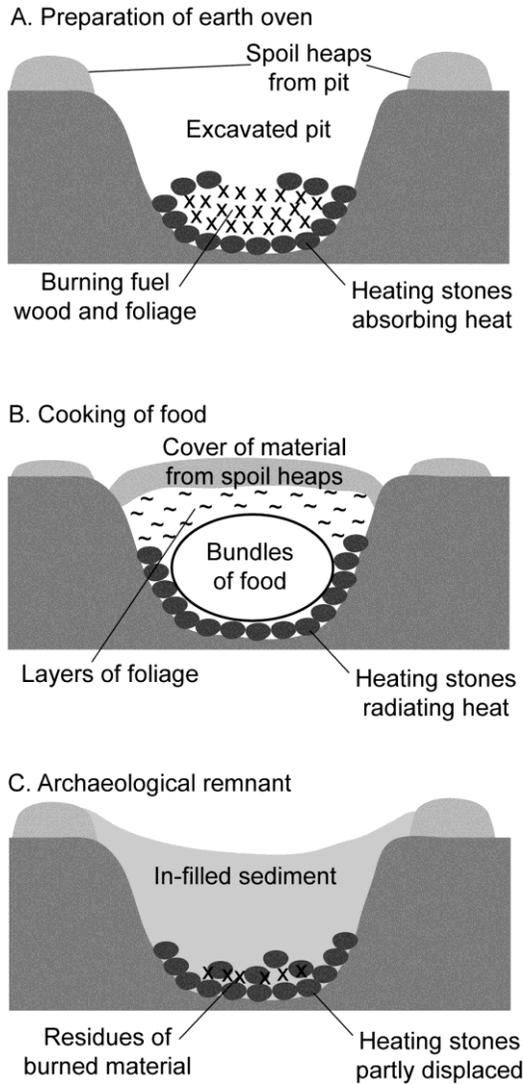


Fig. 10: Schematic diagram of an earth oven.

The larger earth ovens appear to have been used for community-serving purposes, as is still popular today (Figure 11), and accordingly they are found in central locations among village settlements. These features are distinguished by their large size, often 5 m in diameter and nearly 1 m deep (when fully excavated of their in-filled sediments), in contrast to the individual household-serving ovens that typically are about 2 m in diameter and less than 50 cm deep. The community-serving ovens tend to have permanent linings of heating stones, in contrast to the loose collection of easily moveable heating stones in or around the ordinary household ovens. Some of these large-sized earth ovens may have been used as *umu ti* for cooking the roots of the *ti* plant (*Cordyline fruticosa*), requiring long cooking at high temperature (Carson 2002), but in principle they were suitable for cooking a wide variety of foods in large quantity for community-serving feasts.



Fig. 11: Modern example of a feasting event, featuring the presentation of a pig cooked in an earth oven, 2002 in Tutuila.

Perhaps most indicative of an intended permanence of cultural space, burial features are found within and around residential sites (Figure 12). The deceased often are interred in graves at the front of a house, and several individuals could be interred outside a house after multiple generations of occupation. The graves are marked in various ways, perhaps as small as a single standing stone or perhaps as large as a mound of stones covering several square meters and reaching some meters in height. The differential sizes of burial features may be interpreted as reflecting ranks of social or political status. The largest burial monuments tend to belong to chiefs, and these sometimes are found at the edges of pathways at the outer limits of village settlements, where they can be seen by all people entering or exiting the village.



Fig. 12: Stone-piled burial monument with adze-grinding cobble (*fo'aga*) at the far end (top of this image), at Site AS-31-096 in Tafuna, Tutuila (Carson 2005). Scale bar is in 10-cm increments.

In addition to burial features, other monumental markers of cultural space include numerous stone-piled mounds or *tia* (literally “mound”). The most distinctive form of *tia* in Samoa is made of a core piling of stones with radiating external lines or arms, overall making the shape of a star in plan view (Figure 13). A star-shaped mound often is called *tia ‘ave* (literally “star mound”), but it also may be known as *tia seu lupe* (literally “pigeon-snaring mound”) due to an ethnohistorical association with pigeon-snaring rituals (Herdrich 1991; Herdrich and Clark 1993a). Similar traditions of pigeon-snaring mounds have been documented in the islands of Tonga, associated with the ritual performance of chiefs and dated generally within the last 1000 years BP (Burley 1996).

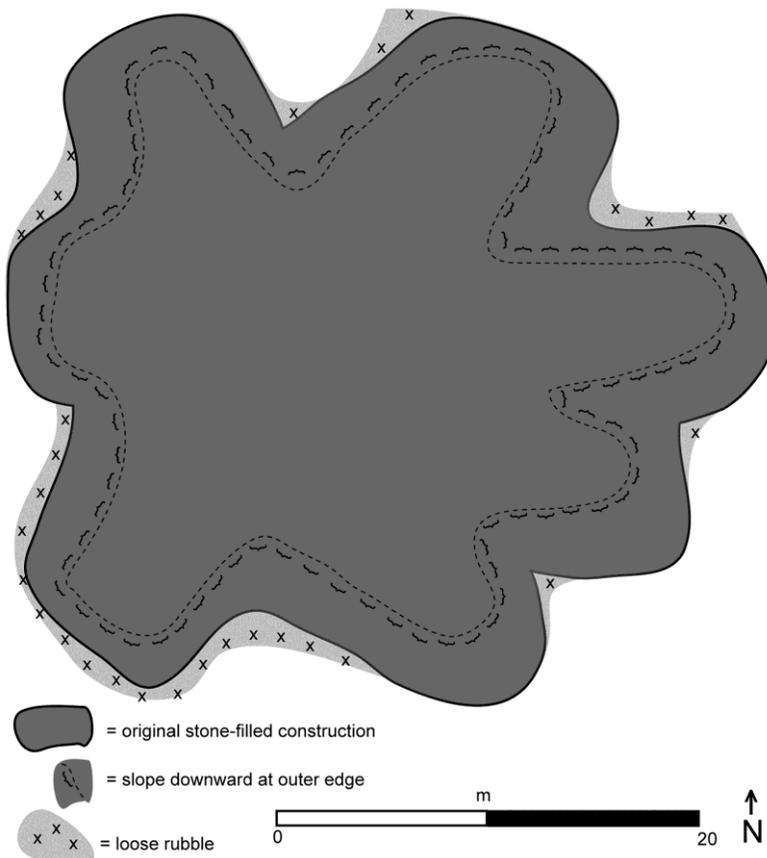


Fig. 13: Archaeological map of a star-shaped pigeon-snaring mound. Modified from data reported for Site AS-31-147 in Tafuna, Tutuila (Carson 2005).

The *tia ‘ave* or *tia seu lupe* in Samoa most often are found outside the spatial limits of village settlements. These settings may be understood as suitable for the purported pigeon-snaring rituals in forested areas without interference from active habitations. Archaeological dating has been problematic, but so far these features appear to post-date 1000 years BP. No pottery has been found within the definite cultural-use surfaces of these features. The stonework foundations typically overlay bare ground, either with no cultural deposit or else with the disturbed remnant of a clearly much older cultural deposit.

In addition to the repeated patterns of burial mounds and star-shaped pigeon-snaring mounds, other large monuments apparently were designed as unique constructions within the last 1000 years BP. The large stone mound of Pulemelei most likely served as a ritual activity center, overlaying a much older habitation (Martinsson-Wallin et al. 2005). Several earthen mounds at Vaialele are associated with the attainment of paramount chief titles, during an ethnohistorically attested event about 250 years BP according to genealogical reckoning (Freeman 1944a), again overlaying the remnants of much older cultural deposits (Green and Davidson 1969, 1974). In a far upland area of Upolu, a peculiar site was formed by an arrangement of upright slabs of basalt columns as if in the pattern of house-supporting posts, called *Fale o le Fe'e*, literally meaning “house of the octopus” and associated with traditions of a chief, a famous warrior, or possibly a god named Fe'e (Freeman 1944b).

The archaeological landscape of 1000–200 years BP was associated not only with residential patterns and ritual complexes, but it also was associated with warfare. In the perspective of many Samoan people today, a major event in their cultural history related to wars with invading forces from Tonga. These events occurred over an extended period of time, mostly estimated between 400 and 250 years BP according to the numbers of generations involved in the varied accounts. Traditions in Tonga suggest that an expanding “Tongan maritime empire” attained its greatest strength about 500 through 250 years BP (Campbell 2001).

The material evidence of warfare most commonly is interpreted in large stone-piled walls and hilltop sites, although interpretations vary. Large stone piled-walls are known as *pa Tonga* (literally “Tongan wall”), and they can be piled more than 2 m high and extended over more than 100 m in length (Figure 14). Hilltop sites resemble habitations, but they include added features of ditches and walls that could be interpreted as defensive fortifications (Best 1993).

Perhaps the most convincing evidence of warfare is seen in a distinctive form of site known as a “refuge cave.” Natural volcanic lava-tube caves were modified with stone-stacked walls and other stone-piled barriers as lines of defense. The deep interior dark spaces were not suitable for regular habitation, lacking natural light or air flow, and these conditions were exacerbated by the enclosing of stone-stacked walls. One famous example is the Seua Cave in Upolu, where excavations found evidence of short-lived occupations, stone adzes and other stone tools, and one radiocarbon date of approximately 250 years BP (Freeman 1943; Golson 1969). Similar refuge caves are known elsewhere in Polynesia, most notably in the lava-tube formations of Hawai'i very strongly associated with warfare and dated generally within the last 400 years BP (Kennedy and Brady 1997).

The surface-visible ruins and monuments dominate the later-aged archaeological landscape of Samoa, but of course the portable artifacts should not be ignored. Pottery production already had ceased by the time of the major stonework constructions, but stone tools were produced in great abundance. Shell and bone artifacts generally are poorly preserved, although examples of fishing gear, small personal ornaments, and other objects are known in cases of sandy beach deposits.

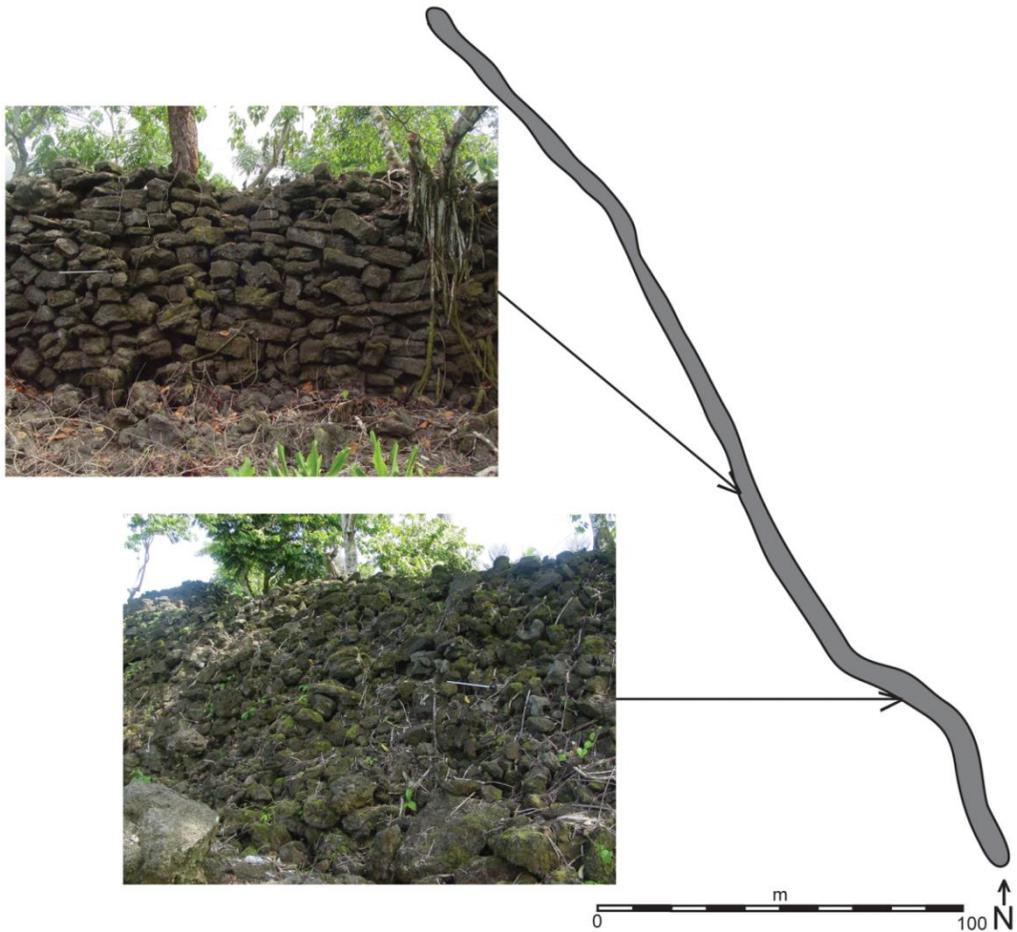


Fig. 14: Stone-stacked wall, identified in oral traditions as related to warfare with invaders from Tonga. Modified from data reported for Site AS-31-072 in Tafuna, Tutuila (Carson 2005).

As has been noted, pottery production ceased in Samoa prior to the intensive and widespread use of large earth ovens, stone-filled structural foundations, and other elements of the surface-visible remains of the traditional settlement systems. This transition mostly was in effect prior to 1000 years BP, but it has been dated variably over a span of some centuries in different sites. As has been stated previously, the final episodes of pottery production have been dated at variable ages, as early as 1500 years BP at some sites (Addison et al. 2008) but as late as 700 years BP at other sites (Clark 1996).

Stone tools are the most abundant of the artifacts dating in the range of 1000–200 years BP. The most commonly found items are basalt adzes and flaking debris, followed by volcanic glass flakes and cores. These materials were used since the beginning of human settlement in Samoa, but basalt adze-making occurred on an impressively large scale after 1000 years BP.

Beginning at some point after 1000 years BP, intensive quarry sites and workshops reflected an industrial scale of stone adze production in Samoa. The largest quarry was at Tatagamatau in Tutuila (Leach and Witter 1987, 1990), although several smaller quarries have been documented (Clark et al. 1997). In addition to the quarrying of raw material and initial shaping of adzes, the tasks of grinding and polishing occurred throughout the use-life of the objects. Samoan adze-grinding basins (*fo'aga*) often are found as one or two facets carved into cobbles or boulders at household workshops, but they sometimes are found in groups of ten or more carved into solid bedrock at larger workshop sites. More recently, portable cobbles or small boulders with *fo'aga* facets have been re-used as basins for grinding the roots of *kava*.

Basalt adzes in Polynesia sometimes were traded over long distances across the ocean between archipelagoes, often traceable by geochemical analysis to specific sources such as Tatagamatau in Samoa (Best et al. 1992; Clark et al. 1997; Johnson et al. 2007). These long-distance trading activities may have been important in developing economic partnerships, social networks, and political relations (Weisler 1997). Basalt adzes from the Tatagamatau quarry and other sources in Samoa have been found in archaeological sites of Tonga, the Cook Islands, and elsewhere with dating of the last 1000 years BP and most often within the last 500 years BP (Clark et al. 1997).

Overall, the archaeological record of 1000–200 years BP is well documented in Samoa, and it relates clearly with the traditional ethnohistory, language, and cultural practice of Polynesian identity as it is known today. The easily accessible archaeological remnants of this period can be understood as ancient reflections of how many Samoan people live currently, although certain aspects have changed in the modern era with new technologies and raw materials, Christianity, world politics, and globalized economy. Traditional Samoan lifestyle or *fa'a Samoa* (literally “Samoan way”) can be linked with a continuity in material records extending at least as old as 1000 years BP, but these traditions logically must have been built on much older ancestry.

LAST 200 YEARS

The last 200 years BP have been characterized by the local adoption of foreign political systems, Christian religion, and international capitalist economies. This period is well documented through written records. The written documentation in essence adds new layers of comprehension and representation to the body of knowledge from oral traditions, language, and archaeology.

The numerous historical references cannot all be reviewed here in an archaeological summary, but a few key points can be mentioned. The first written records pertain to the accounts of European explorers who made just a few brief encounters in Samoa and other areas of the Pacific during the 1700s. After one famously tragic event in 1787 (see below), Samoa essentially was avoided by foreigners until the visits by Christian missionaries beginning in the 1830s. Another major historical event was related to World War II in the 1940s, followed by increasingly intense American and other influences. Among the many modern studies of the historical records, Serge Tcherkezoff (2004) reviewed the period of

1722 through 1848, and Joseph Kennedy (2009) examined the transformative period of World War II.

Of the early written accounts in the 1700s, three primary sources pertain to specific events in 1722, 1768, and 1787. In 1722, the Dutch explorer Jacob Roggeveen provided the first known written record about Samoa, including trade of supplies at Ta'u and observation from a distance when sailing near other islands (English translation as Roggeveen 1970). In 1768, the French naval admiral Louis-Antoine de Bougainville traded for supplies in the easternmost islands of Samoa, and he commented on the outrigger sailing canoes (translation as de Bougainville 1772). In 1787, another French naval officer, Jean-François de Galaup de la Pérouse, made several observations of the land and the people of Samoa, but a violent encounter in Tutuila suddenly forced a quick departure (translation as la Pérouse 1968).

The unfortunate altercation in 1787 occurred at A'asu in Tutuila, also known as "Massacre Bay." According to the written account of the time (translation as la Pérouse 1968), members of the French crew went ashore for obtaining water and other supplies, but they were overpowered by the local residents and killed. Various interpretations are possible about what actually occurred, knowing that the written account likely was biased by those who wrote it. Archaeological investigations have found evidence that the site was not a residential area, but rather it was used for periodic fishing and other activities, later transformed into a place of showing respect for the past historical events (Pearl and Loiseau-Vonruff 2007).

The initial Christian missionary period in Samoa was part of the larger activities throughout the Pacific, aimed at converting as many people as possible into the Christian religion. In the case of Samoa, the first Christian missionaries visited from Tonga in 1828. Starting in the 1830s, the London Missionary Society (LMS) began major efforts with a strong presence in Samoa. The records of George Turner often are regarded as the most fully informed, based on his sustained years of residence, and a comprehensive account was published (edited version of Samoa section published as Turner 1986). Several other documents of 1836 through 1915 consist of varied letters and reports, attributed to Charles Barff, Aaron Buzzacott, Thomas Hardie, Thomas Heath, George Pratt, John Williams, and others (London Missionary Society 1915).

The 1940s may be viewed as a major turning point in Samoan history, due to the role of Samoa in World War II and the continued effects ever since this time. Many of the road systems and other facilities of World War II still give shape to the landscape today, for example as seen in the remnants of the Tafuna Airbase in and around the Pago Pago International Airport of Tutuila (Carson 2003). Prior to these events, the islands and the people of Samoa mostly were unaffected by external influence other than by the Christian missionaries. During and after World War II, considerable transformations have been evident in material culture, economics, politics, and many aspects of life. Samoan people played notably active roles in these historical events, not to be misinterpreted as passively receiving the impositions of foreign governments (Enright 2001; Kennedy 2009).

Modern life in Samoa continues to blend ancient traditions with new developments. Increasingly less people now are constructing traditional Samoan *fale* on stone-filled foundations, and even less people are using basalt adzes except for specialized crafting. Nonetheless, people are aware of these traditions as part of their Samoan cultural heritage, and the traditions survive with practical modifications of modern life. These trends are visible in the present-day material records of Samoan artworks (Mallon 2002). Additionally, Samoan ethnohistory and language are alive and well, thus providing immediate ways of making past cultural history relevant to the people living in the present.

DISCUSSION AND CONCLUSIONS

A chronologically ordered narrative of the Samoan archaeological landscape provides a baseline for addressing several questions. For instance, what was the relationship between the initial foundation of Austronesian settlement and the later contexts of Polynesian culture? Within a sequence of apparently 2800 years, when did the major transitions occur in the forms of settlement and land-use patterns, housing structures, pottery, and other artifacts that defined the past cultural contexts? What do the resulting chronological trends reveal about the mutual roles of long-term cultural continuity concurrent with transformation?

Continuity of the Samoan population overall must be acknowledged in terms of a continuous human presence ever since the first human settlement in Samoa. The oldest habitation sites are dated at least as early as 2800 years BP, followed by a sustained and unbroken occupation of the islands. In this case, the present-day inhabitants of clearly Polynesian culture can trace their ancestry back to the period of initial settlement by Austronesian ancestors.

Although the sequence of human habitation was unbroken over 2800 years, the foregoing review has shown that the material culture changed significantly over this extended period. Indeed, continuity could exist in some ways while accommodating transformation in other ways. Some elements of cultural change were faster or slower than others, as in Braudel's (1949) depictions of rapidly changing *histoire événementielle* along with slow-moving *longue durée* of history.

The chronological transitions may be understood as reflecting multiple concurrent factors that unfolded at different paces and rhythms over the last 2800 years. Opinions vary about these transitions as reflecting superficial points of change versus more profound transformation of the cultural system. When the individual factors have changed independently of each other and at small scales, then the resulting impacts mostly have been absorbed into a gradually adapting cultural system, for example as seen in the slow transition from thin and fine pottery to thick and coarse pottery over the long period of 2800 through 1000 years BP. When the changing factors coincided or correlated in significant ways, then the resulting impacts have prompted deep reconfiguration of the cultural system as a whole, for example as seen in the multiple points of new material culture and settlement structure emerging around 1000 years BP.

System-wide cultural change occurred at least twice, roughly around 2500 years BP and then again around 1000 years BP. The initial period of Austronesian settlement, dated at least as early as 2800 years BP, underwent a major change by 2500 years BP, as seen in the ending of dentate-stamped Lapita pottery, slight shift in the locations of coastal settlements, and increasing reliance on stable land-based ecological zones instead of the evidently less stable nearshore ecological niches. Following these early adaptations, several factors were set into motion that later would contribute to another major cultural transformation by 1000 years BP when earth ovens gained popularity over pottery, ground-level housing gained popularity over post-raised housing, and overall the diagnostic material traits of Polynesian culture became evident at a system-wide scale.

The present overview can support new research about chronological developments in Samoa, and perhaps similar research can be performed in other regions. In particular, the long-term time scale of the *longue durée* can be appreciated as involving slow-moving change rather than persistent unchanging continuity. Any lingering notions of a deep and unchanging social structure will need to be revised, as shown here in Samoa, by extension for Polynesia overall, and arguably applicable worldwide. Perhaps the most convincing evidence of sustained continuity is in the spoken Samoan language of definite Austronesian ancestry, but of course any language in the world spoken today has changed over the last hundreds or thousands of years. This point underscores that an ancient Austronesian ancestry can be identified, even though much of the culture has changed.

The processes of cultural change have been ongoing ever since the first Austronesian settlement in Samoa, just as in all other inhabited places of the Austronesian world. At no particular point in time did Austronesian people suddenly become Polynesian. The cultural identities of Austronesian people have changed constantly through time, for example as seen in the very different material culture contexts over the last 2800 years in Samoa. Toward understanding how and why these cultural transitions have occurred, basic chronological outlines are necessary as solid frameworks that will continue to be refined with new research.

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REFERENCES

- Addison, David J., and Tautala Asaua
 2006 100 New Dates from Tutuila and Manu'a: Additional Data on Addressing Chronological Issues in Samoan Prehistory. *Journal of Samoan Studies* 2:95-117.
- Addison, David J., and Elizabeth Matisso-Smith
 2010 Rethinking Polynesian Origins: A West Polynesia Triple-I Model. *Archaeology in Oceania* 45:1-12.
- Addison, David J., Jeffrey Toloa, Tuipuavai Tago, and Siaki Vaueli
 2008 Samoan Plain Ware Ceramics of Tutuila Island, American Samoa: Some Thoughts on Their Spatial and Chronological Distribution. In *Recent Advances in the Archaeology of the Fiji/West Polynesia Region*. David J. Addison and Christophe Sand, eds. Pp.97-115. University of Otago Studies in Prehistoric Anthropology Number 21. Dunedin, New Zealand: University of Otago.
- Allen, Melinda S., William R. Dickinson, and Jennifer M. Huebert
 2012 The Anomaly of Marquesas Ceramics: A Fifty Year Retrospective. *Journal of Pacific Archaeology* 3:90-104.
- Ayres, William S., and David Eisler
 1987 Archaeological Survey in Western Tutuila: A Report on archaeological Site Survey and Excavations, 85-2. Unpublished manuscript. Pago Pago: American Samoa Historic Preservation Office.
- Bayman, James M., and Cyril G. Calugay
 2014 Archaeological Overview and Assessment of National Park in American Samoa. Honolulu: Pacific Western Regional Office, U.S. National Park Service.
- Best, Simon
 1993 At the Halls of the Mountain Kings, Fijian and Samoan Fortifications: Comparison and Analysis. *Journal of the Polynesian Society* 102:385-447.
- Best, Simon, Peter Sheppard, Roger Green, and Robin Parker
 1993 Necromancing the Stone: Archaeologists and Adzes in Samoa. *Journal of the Polynesian Society* 101:45-85.
- Blust, Robert
 2013 *The Austronesian Languages*. Revised Edition. Canberra: Asia-Pacific Linguistics, Research School of Pacific and Asian Studies, the Australian National University.
- Braudel, Fernand
 1949 *La Méditerranée et le Monde Méditerranéen à l'Époque de Philippe II*. Three volumes. Paris: Armand Collin.

- Burley, David V.
1996 Sports, Status, and Field Monuments in the Polynesian Chiefdom of Tonga: The Pigeon Snaring Mounds of Northern Ha'apai. *Journal of Field Archaeology* 23:421-435.
2013 Fijian Polygenesis and the Melanesian/Polynesian Divide. *Current Anthropology* 35:436-462.
- Burley, David V., and Jeffrey T. Clark
2003 The Archaeology of Fiji/Western Polynesia in the Post-Lapita Era. In *Pacific Archaeology: Assessments and Prospects*. Christophe Sand, ed. Pp. 235-254. *Cahiers de l'Archéologie en Nouvell-Calédonie* 15. Nouméa: Services des Musées et du Patrimoine de la Nouvelle-Calédonie.
- Burley, David V., Marshall I. Weisler, and Jian-xin Zhao
2012 High Precision U/Th Dating of First Polynesian Settlement. *PLoS ONE* 7: e48769. doi:10.1371/journal.pone.0048769
- Campbell, Ian C.
2001 *Island Kingdom: Tonga Ancient and Modern*. Revised Edition. Christchurch, New Zealand: Canterbury University Press.
- Carson, Mike T.
2002 Ti Ovens in Polynesia: Ethnological and Archaeological Perspectives. *Journal of the Polynesian Society* 111:339-370.
2003 Inventory Survey of Archaeological and Historical Properties Associated with the WW II Tafuna Airbase, Tualauta County, Tutuila Island, American Samoa. Report prepared for American Samoa Historic Preservation Office. Honolulu: International Archaeological Research Institute, Inc.
2005 Archaeological Data Recovery for the American Samoa Power Authority Sewer Collection System in Tualauta County, Tutuila Island, American Samoa. Report prepared for American Samoa Power Authority. Honolulu: International Archaeological Research Institute, Inc.
2006 Samoan Cultivation Practices in Archaeological Perspective. *People and Culture in Oceania* 22:1-29.
2013 Austronesian Migrations and Developments in Micronesia. *Journal of Austronesian Studies* 4:25-52.
- Charlot, John
1990 Aspects of Samoan Literature I: the Structure of the Samoan Single Story Form and Its Uses. *Anthropos* 85:415-430.
1991 Aspects of Samoan Literature II: Genealogies, Multigenerational Complexes, and Texts on the Origin of the Universe. *Anthropos* 86:127-150.
1992 Aspects of Samoan Literature III: Texts on Historical subjects and Bodies of Literature. *Anthropos* 87:33-48.
- Clark, Jeffrey T.
1993a Radiocarbon Dates from American Samoa. *Radiocarbon* 35:323-330.
1993b Prehistory of Alega, Tutuila Island, American Samoa: A Small Residential and Basalt-industry Valley. *New Zealand Journal of Archaeology* 15:67-86.

- 1996 Samoan Prehistory in Review. In *Oceanic Culture History: Essays in Honour of Roger Green*. Janet Davidson, Geoffrey Irwin, Foss Leach, Andrew Pawley, and Dorothy Brown, eds. Pp. 455-460. Auckland: New Zealand Journal of Archaeology Special Publication.
- Clark, Jeffrey T. and Michael G. Michlovic
1996 An early Settlement in the Polynesian Homeland: Excavation at 'Aoa Valley, Tutuila Island. *Journal of Field Archaeology* 23:151-167.
- Clark, Jeffrey T., Elizabeth Wright, and David J. Herdrich
1997 Interactions within and beyond the Samoan Archipelago: Evidence from Basaltic Rock Geochemistry. In *Prehistoric Long-distance Interaction in Oceania: An Interdisciplinary Approach*. Marshall I. Weisler, ed. Pp. 68-84. Monograph 21. Auckland: New Zealand Archaeological Association.
- Cleghorn, Paul L., and William A. Shapiro
2000 Archaeological Data Recovery Report for the Proposed Ta'u Road Reconstruction at Faga and Fitiuta, Ta'u Island, Manu'a, American Samoa. Report prepared for U.S. Army Corps of Engineers. Kailua, Hawaii: Pacific Legacy, Inc.
- Davidson, Janet M.
1979 Samoa and Tonga. In *The Prehistory of Polynesia*. Jesse D. Jennings, ed. Pp. 82-109. Cambridge: Cambridge University Press.
2008 The Archaeology of the Polynesian Homeland: A Retrospective View of the Early Years. In *Recent Advances in the Archaeology of the Fiji/West Polynesia Region*. David J. Addison and Christophe Sand, eds. Pp.7-31. University of Otago Studies in Prehistoric Anthropology Number 21. Dunedin, New Zealand: University of Otago.
- de Bougainville, Louis-Antoine
1772 *A Voyage round the World: Performed by Order of His Most Christian Majesty, in the Years 1766, 1767, 1768, and 1769 by Lewis de Bougainville, Colonel of Foot and Commodore of the Expedition, in the Frigate la Boudeuse and the Store-ship l'Étoile*. Translated from French into English by John Reinhold Forster. London: J. Nourse Bookseller to His Majesty and T. Davies Bookseller to the Royal Academy.
- de la Pérouse, Jean-François de Galaup
1968 *Voyage round the World, Performed in the Years 1785, 1786, and 1787 by the Roussole and Astrolabe, under the Command of J. F. G. de la Pérouse*. Three volumes. Translation from French into English. New York: Da Capo Press.
- Dickinson, William R.
2001 Paleoshoreline Record of Relative Holocene Sea Levels on Pacific Islands. *Earth-Science Reviews* 55:191-234.
2007 Upolu (Samoa): Perspectives in Island Subsidence from Volcano Loading. *Journal of Island and Coastal Archaeology* 2:236-238.

- Dickinson, William R., and David V. Burley
2007 Geoarchaeology of Tonga: Geotectonic and Geomorphic Controls. *Geoarchaeology* 22:229-259.
- Dickinson, William R., and Roger C. Green
1998 Geoarchaeological Context of Holocene Subsidence at the Ferry Berth Lapita Site, Mulifanua, Upolu, Samoa. *Geoarchaeology* 13:239-263.
- Eisler, David
1995 Fagaitua Bay Phase II Research Project: Final Report on the American Samoa Power Authority Watermain Project from Alega to Alofa. Unpublished manuscript. Pago Pago: American Samoa Historic Preservation Office.
- Emory, Kenneth P.
1959 Origins of the Hawaiians. *Journal of the Polynesian Society* 68:29-35.
- Enright, John
2001 A Walking Tour of Historic Fagotogo, Tutuila, American Samoa. Pago Pago: American Samoa Historic Preservation Office.
- Fraser, John
1892 The Samoan Story of Creation: A Tala. *Journal of the Polynesian Society* 1:164-189.
1896 Some Folk Songs and Myths from Samoa. *Journal of the Polynesian Society* 5:171-183.
1897a Folk Songs and Myths from Samoa. *Journal of the Polynesian Society* 6:19-36.
1897b Folk Songs and Myths from Samoa. *Journal of the Polynesian Society* 6:67-76.
1897c Folk Songs and Myths from Samoa. *Journal of the Polynesian Society* 6:107-122.
1898 Folk Songs and Myths from Samoa. *Journal of the Polynesian Society* 7:15-29.
- Freeman, J. Derek
1943 The Seuao Cave. *Journal of the Polynesian Society* 52:101-109.
1944a The Vailele Earthmounds. *Journal of the Polynesian Society* 53:145-162.
1944b O le Fale o le Fe'a. *Journal of the Polynesian Society* 53:121-144.
- Frost, Janet O.
1978 Archaeological Investigations on Tutuila Island, American Samoa. Ph.D. dissertation. Eugene: University of Oregon.
- Golson, Jack
1969 Preliminary Research: Archaeology in Western Samoa, 1957. In *Archaeology in Western Samoa, Volume 1*. Roger C. Green and Janet M. Davidson, eds. Pp. 67-76. Bulletin 6. Auckland: Auckland Institute and Museum.

Green, Roger C.

- 1967 Settlement Patterns: Four Case Studies from Polynesia. In *Archaeology at the Eleventh Pacific Science Congress*. Wilhelm G. Solheim II, ed., Pp. 101-132. Asian and Pacific Archaeology Series 1. Honolulu: Social Science Research Institute, Inc., University of Hawaii.
- 1970 Settlement Pattern Archaeology in Polynesia. In *Studies in Oceanic Prehistory, Volume 1*. Roger C. Green and Marion Kelly, eds. Pp. 13-32. Pacific Anthropological Records 11. Honolulu: Department of Anthropology, Bernice Pauahi Bishop Museum.
- 1986 Some Basic Components of the Ancestral Polynesian Settlement System: Building Blocks for More Complex Polynesian Societies. In *Island Societies: Archaeological Approaches to Evolution and Transformation*. Patrick V. Kirch, ed., Pp. 50-54. *New Directions in Archaeology*. Cambridge: Cambridge University Press.
- 1991 Near and Remote Oceania: Disestablishing “Melanesia” in Culture History. In *Man and a Half: Essays in Pacific Anthropology and Ethnobiology in Honour of Ralph Bulmer*. Andrew Pawley, ed. Pp. 491-502. Auckland: the Polynesian Society.
- 1993 Community-level Organisation, Power and Elites in Polynesian Settlement Pattern Studies. In *The Evolution and Organisation of Prehistoric Society in Polynesia*. Michael W. Graves and Roger C. Green, eds. Pp. 9-12. Monograph 19. Auckland: New Zealand Archaeological Association.
- 2002 A Retrospective View of Settlement Pattern Studies in Samoa. In *Pacific Landscapes: Archaeological Approaches*. Thegn N. Ladefoged and Michael W. Graves, eds. Pp. 125-152. Los Osos, California: Bearsville Press.

Green, Roger C., and Janet M. Davidson, eds.

- 1969 *Archaeology in Western Samoa, Volume 1*. Bulletin 6. Auckland: Auckland Institute and Museum.
- 1974 *Archaeology in Western Samoa, Volume 2*. Bulletin 7. Auckland: Auckland Institute and Museum.

Herdrich, David J.

- 1991 Towards an Understanding of Samoan Star Mounds. *Journal of the Polynesian Society* 100:381-435.

Herdrich, David J., and Jeffrey T. Clark

- 1993 Samoan Tia ‘Ave and Social Structure: Methodological and Theoretical Considerations. In *The Evolution and Organisation of Prehistoric Society in Polynesia*. Michael W. Graves and Roger C. Green, eds. Pp. 52-63. Monograph 19. Auckland: New Zealand Archaeological Association.

Hewitt, Nancy J.

- 1980a Tulaga Fale. In *Archaeological Excavations in Western Samoa*. Jesse D. Jennings and Richard N. Holmer, eds. Pp. 42-50. Pacific Anthropological Records 32. Honolulu: Department of Anthropology, Bernice Pauahi Bishop Museum.
- 1980b Ten Points. In *Archaeological Excavations in Western Samoa*. Jesse D. Jennings and Richard N. Holmer, eds. Pp. 38-41. Pacific Anthropological

Records 32. Honolulu: Department of Anthropology, Bernice Pauahi Bishop Museum.

Hiroa, te Rangi (Sir Peter Buck)

1930 Samoan Material Culture. Bulletin 75. Bishop Museum Press.

Holmer, Richard N.

1980 Mt. Olo Settlement Pattern Interpretation. In *Archaeological Excavations in Western Samoa*. Jesse D. Jennings and Richard Holmer, eds. Pp. 93-103. Pacific Anthropological Records 32. Honolulu: Department of Anthropology, Bernice Pauahi Bishop Museum.

Hunt, Terry L., and Patrick V. Kirch

1987 An Archaeological Reconnaissance of the Manu‘a Islands, American Samoa. Unpublished manuscript. Pago Pago: American Samoa Historic Preservation Office.

1988 An Archaeological Survey of the Manu‘a Islands, American Samoa. *Journal of the Polynesian Society* 97:153-183.

Jennings, Jesse D.

1974 The Ferry Berth Site, Mulifanua District, Upolu. In *Archaeology in Western Samoa, Volume 2*. Roger c. Green and Janet M. Davidson, eds. Pp. 176-178. Bulletin 7. Auckland: Auckland Institute and Museum.

Jennings, Jesse D., and Richard N. Holmer, eds.

1980 *Archaeological Excavations in Western Samoa*. Pacific Anthropological Records 32. Honolulu: Department of Anthropology, Bernice Pauahi Bishop Museum.

Jennings, Jesse D., Richard N. Holmer, Joel Janestski, and Howard L. Smith

1976 Excavations on Upolu, Western Samoa. Pacific Anthropological Records 25. Honolulu: Department of Anthropology, Bernice Pauahi Bishop Museum.

Jennings, Jesse D., Richard N. Holmer, and Gregory Jackson

1982 Samoan Village Patterns: Four Examples. *Journal of the Polynesian Society* 91:81-102.

Johnson, Phillip R., Frederic B. Pearl, Suzanne L. Eckert, and William D. James

2007 INAA of Pre-Contact Basalt Quarries on the Samoan Island of Tutuila: A Preliminary Baseline for an Artifact-Centered Provenance Study. *Journal of Archaeological Science* 34:1078-1086.

Keating, Barbara H.

1985 Paleomagnetic Studies of the Samoan Islands: Results from the Islands of Tutuila and Savaii. In *Investigations of the Northern Melanesian Borderland*. Thomas M. Brocher, ed. Pp. 187-199. Earth Science Series Volume 3. Houston: Circum-Pacific Council for Energy and Mineral Resources.

1992 The Geology of the Samoan Islands. In *Geology and Mineral Resources of the Central Pacific Basin*. Barbara H. Keating and Barrie R. Bolton. Pp. 127-178. Circum-Pacific Council for Energy and Mineral Resources Earth Science Series Volume 14. New York: Springer.

- Kennedy, Joseph
 2009 *The Tropical Frontier: America's South Sea Colony*. Mangilao, Guam: Micronesian area research Center, University of Guam.
- Kennedy, Joseph, and James E. Brady
 1997 *Into the Netherworld of Island Earth: A Reevaluation of Refuge Caves in Ancient Hawaiian Society*. *Geoarchaeology* 12:641-655.
- Kikuchi, William Kenji
 1963 *Archaeological Surface Ruins in American Samoa*. M.A. thesis. Honolulu: University of Hawaii.
- Kirch, Patrick V.
 1997 *The Lapita Peoples: Ancestors of the Oceanic World*. Cambridge: Blackwell Publishers.
 2000 *On the Road of the Winds: An Archaeological History of the Pacific Islands before European Contact*. Berkeley; University of California Press.
 2010 *Peopling of the Pacific: A Holistic Anthropological Perspective*. *Annual Review of Anthropology* 39:131-148.
- Kirch, Patrick V., and Roger C. Green
 1987 *History, Phylogeny, and Evolution in Polynesia*. *Current Anthropology* 28:431-456.
 2001 *Hawa'iki; Ancestral Polynesia: An Essay in Historical Anthropology*. Cambridge: Cambridge University Press.
- Kirch, Patrick V., and Terry L. Hunt, eds.
 1993 *The To'aga Site: Three Millennia of Polynesian Occupation in the Manu'a Islands, American Samoa*. Contribution 51. Berkeley: Archaeological Research Facility, University of California.
- Kraemer, Augustin
 1902 *Die Samoan Inseln*. Two volumes. Stuttgart, Germany: Schweizerbartsche Verlag (in German).
 1994 *The Samoa Islands: An Outline of a Monograph with Particular Consideration of German Samoa*. Translated from German into English by Theodore Veerharen. Two volumes. Honolulu: University of Hawaii Press.
- Leach, Helen M.
 1982 *Cooking without Pots: Aspects of Prehistoric and Traditional Polynesian Cooking*. *New Zealand Journal of Archaeology* 4:149-156.
 2007 *Cooking without Pots Again*. In *Vastly Ingenious: The Archaeology of Pacific Material Culture in Honour of Janet M. Davidson*. Atholl Anderson, Kaye Green, and Foss Leach, eds. Pp. 53-68. Dunedin, New Zealand: Otago University Press.
- Leach, Helen M., and Roger C. Green
 1989 *New Information for the Ferry Berth Site, Mulifanua, Western Samoa*. *Journal of the Polynesian Society* 98:319-329.

Leach, Helen M., and Dan C. Witter

1987 Tataga-matau "Rediscovered." *New Zealand Journal of Archaeology* 9:33-54.

1990 Further Investigations at the Tataga-matau Site, American Samoa. *New Zealand Journal of Archaeology* 12:51-83.

le Moine, Genevieve

1987 The Loss of Pottery in Polynesia. *New Zealand Journal of Archaeology* 9:25-32.

London Missionary Society

1915 South Sea Mission Papers, circa 1800-1915. Unpublished documents collection. Sydney: Mitchell Library.

Mallon, Sean

2002 *Samoa Arts and Artists: O Measina Samoa*. Honolulu: University of Hawaii Press.

Marck, Jeffrey

1999 Revising Polynesian Linguistic Subgrouping and Its Culture History Implications. In *Archaeology and Language IV: Language Change and Cultural Transformation*. Roger Blench and Matthew Spriggs, eds. Pp. 95-122. London: Routledge.

Marshall, Yvonne

1985 Who Made the Lapita Pots? A Case Study in Gender Archaeology. *Journal of the Polynesian Society* 94:205-233.

Martinsson-Wallin, Helene

2007 *Samoa Archaeology: A Review of research History*. *Archaeology in Oceania* 42 Supplement:11-27.

Martinsson-Wallin, Helene, Geoffrey Clark, and Paul Wallin

2005 The Pulemelei Project, Samoa, Savai'i. In *The Renaca Papers: Fourth International Conference on Easter Island and the Pacific*. Christopher M. Stevenson, José Miguel Ramirez Aliaga, Francis J. Morin, and Norma Barbacci, eds. Pp. 225-232. Los Osos: Bearsville Press.

McDougall, Ian

1985 Age and Evolution of the Volcanoes of Tutuila, American Samoa. *Pacific Science* 39:311-320.

Mead, Margaret

1930 *Social Organization of Manu'a*. Bulletin 76. Honolulu: Bishop Museum Press.

Moore, James R., and Joseph Kennedy

1999 Results of an Archaeological Cultural Resource Evaluation for the East and West Tutuila Water Line Project, Tutuila Islands, American Samoa. Report prepared for the American Samoa Historic Preservation Office. Hale'iwa, Hawaii: Archaeological Consultants of the Pacific, Inc.

- Nunn, Patrick D.
 1994 Oceanic Islands. Oxford: Blackwell Publishers.
 1998 Pacific Island Landscapes: Landscape and Geological Development of Southwest Pacific Islands, especially Fiji, Samoa and Tonga. Suva, Fiji: Institute of Pacific Studies, University of the South Pacific.
 2005 Reconstructing Tropical Paleoshorelines Using Archaeological Data: Examples from the Fiji Archipelago, Southwestern Pacific. *Journal of Coastal Research Special Issue* 42:15-25.
 2007 Space and Place in an Ocean of Islands: Thoughts on the Attitudes of the Lapita Peoples towards Islands and Their Colonization. *South Pacific Studies* 27:25-35.
 2009 Geographical Influences on Settlement-Location by Initial Colonizers: A Case Study of the Fiji Islands. *Geographical research* 47:306-319.
- Nunn, Patrick D., and Mike T. Carson
 2015 Collapses of Island Societies from Environmental Forcing: Does History Hold Lessons for the Future? *Global Environment New Series* 8:pages in press.
- Nunn, Patrick D., and Fiona J. Petchey
 2013 Bayesian Re-evaluation of Lapita Settlement in Fiji: Radiocarbon Analysis of the Lapita Occupation at Bourwea and Nearby Sites of the Rove Peninsula, Viti Levu Island. *Journal of Pacific Archaeology* 4:21-34.
- Pearl, Frederic B., and Sandy Loiseau-Vonruff
 2007 Father Julien Vidal and the Social Transformation of a Small Polynesian Village (1787-1930): Historical Archaeology at Massacre Bay, American Samoa. *International Journal of Historical Archaeology* 11:32-59.
- Pearl, Frederic B. and William A. Sauck
 2014 Geophysical and Geoarchaeological Investigations at Aganoa Beach, American Samoa: An Early Archaeological Site in Western Polynesia. *Geoarchaeology* 29:462-476.
- Petchey, Fiona J.
 2001 Radiocarbon Determinations from the Mulifanua Lapita Site, Upolu, Western Samoa. *Radiocarbon* 43:63-68.
- Quintus, Seth J.
 2012 Terrestrial Food Production and Land Use in Prehistoric Samoa: An Example from Olosega Island, Manu'a, American Samoa. *Archaeology in Oceania* 47:133-140.
- Rieth, Timothy, and David J. Addison
 2008 How Dark Are They? The Samoan Dark Ages, ~1500-1000 BP. In *Recent Advances in the Archaeology of the Fiji/West Polynesia Region*. David J. Addison and Christophe Sand, eds. Pp.87-96. University of Otago Studies in Prehistoric Anthropology Number 21. Dunedin, New Zealand: University of Otago.

- Rieth, Timothy, and Terry L. Hunt
2008 Radiocarbon Chronology for Samoan Prehistory. *Journal of Archaeological Science* 35:1901-1927.
- Roggeveen, Jacob
1970 *The Journal of Jacob Roggeveen*. Translated from Dutch publication into English by Andrew Sharp. Originally published in 1838 as *Dagverhal der Ontdekkings-reis van Mr. Jacob Roggeveen in der Jaren 1721 en 1722*. Oxford: Clarendon Press.
- Shapiro, William, and Paul L. Cleghorn
2002 Archaeological Monitoring for the Construction of the Ta'u Road, Faga and Fitiuta, Ta'u Island, Manu'a, American Samoa. Report prepared for U.S. Army Corps of Engineers. Kailua, Hawaii: Pacific Legacy, Inc.
- Smith, Howard L.
1976 Jane's Camp (SUF1-1). In *Excavations on Upolu, Western Samoa*. Jennings, Jesse D., Richard N. Holmer, Joel Janestski, and Howard L. Smith, eds. Pp. 61-74. *Pacific Anthropological Records* 25. Honolulu: Department of Anthropology, Bernice Pauahi Bishop Museum.
- Smith, Anita
2002 *An Archaeology of West Polynesian Prehistory*. *Terra Australis* 18. Canberra, Australia: Pandanus Books, Research School of Pacific and Asian Studies, the Australian National University.
- Spriggs, Matthew, and Atholl Anderson
1993 Late Colonization of East Polynesia. *Antiquity* 67:200-217.
- Stair, John B.
1895a Samoa: Whence Peopled? *Journal of the Polynesian Society* 4:47-58.
1895b Floatsam and Jetsam from the Great Pacific: or, Summary of Early Samoan Voyages and Settlement, with Supplementary Notes and Comments. *Journal of the Polynesian Society* 4:99-131.
1896 Jottings on the Mythology and Spirit-lore of Old Samoa, *Journal of the Polynesian Society* 5:33-57.
- Stearns, Harold T.
1944 Geology of the Samoan Islands. *Geological Society of America Bulletin* 55:1279-1332.
- Suafo'a, Epifania
1998 *Samoan Ceramics: Evidence from the Malaeimi Site, Tutuila*. Unpublished M.A. thesis. Eugene: University of Oregon.
- Tcherkezoff, Serge
2004 *First Contacts in Polynesia: The Samoan Case (1722-1848): Western Misunderstandings about Sexuality and Divinity*. Christchurch, New Zealand: Macmillan Brown Centre for Pacific Studies.

Turner, George

- 1986 Samoa: Nineteen Years in Polynesia. Reprint of Samoa section of original 1861 publication by John Snow. Apia, Samoa: Western Samoa Historical and Cultural Trust.

Weisler, Marshall I. ed.

- 1997 Prehistoric Long-distance Interaction in Oceania: An Interdisciplinary Approach. Monograph 21. Auckland: New Zealand Archaeological Association.
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解碼薩摩亞 (Samoa) 的考古地景： 南島起源和波里尼西亞文化

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摘要

薩摩亞 (Samoa) 的考古和亞太文化史有兩項重要關連：第一，薩摩亞群島座落於大約 2800 年前南島語族拉皮塔 (Lapita) 文化於遠大洋洲 (Remote Oceania) 的東界。第二，這些島嶼靠近波里尼西亞文化區的西界，因此，特殊的波里尼西亞語言、文化習俗和考古的物質特徵約於 1000 年以前在此形成。考慮這兩項要點之間的關連，其可能的詮釋則需依據目前的考古證據，本文將回顧這些證據。

對於薩摩亞的最早和最晚的物質文化之間的關係，有兩個主要觀點引發學術爭論。第一種觀點強調長期的連續性，主張南島語族的起源和波里尼西亞居民有直接聯繫。另一種觀點則強調長期的轉化，主張當地最早人類聚落和後來文化發展之間的不相關性。事實上，連續性和轉化不應是絕對對立的，而是代表一個社會變化的不同面向：一個社會或許在某些方面的發展較慢（例如強調連續性），但在其他方面卻更迅速地隨著時間的推移（例如強調轉化）。

由於沒有明確的考古證據涵蓋全時限的薩摩亞，連續性和轉化的相對值也就容易被誤解。例如，距今 2800 至 2500 年的早期聚落數量相當少，因此，它們有限的記錄難以與 1000 年前的大量證據匹比。此外，距今 2500 到 1000 年間、延續 1500 年的遺址卻被低估，儘管這些遺址對於幾個問題的理解相當重要，這些問題包括陶器製作的減少而最終消失、住房形式的變化，以及石製紀念碑建築傳統的出現等。

本文對薩摩亞考古的回顧，提出了一個新的年代大綱，涵蓋了 2800 年的年代序列。根據有限的遺址記錄和放射性碳素年代，物質文化和相關的遺留至少可以分為五個階段：1) 2800 年至 2500 年前；2) 2500 年至 1800 年前；3) 1800 年至 1000 年前；4) 1000—200 年前；5) 過去的 200 年。上述每個階段都有內部變遷，因此根據後續研究可能進行再分期。至於每期之間的轉換，不應被誤解為是精確固定的，將來可運用新證據進一步確認。

以年代序列作為基礎底線來處理這些考古學的問題是必要的，否則這些問題可能被忽略或是誤解。重點是要考慮長時間內文化變遷的不同速率。我們可以看到考古記錄的某些方面變遷較快或者其它方面較慢，但這些情形是同時發生的。有些問題或許可以得

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到更有效地理解，例如關於人與環境的關係會長時間的交互變化、經濟生業策略、土地利用模式或是海外接觸等。

本文回顧的薩摩亞考古可以作為文化傳承與轉化隨著時間推移如何調和的案例。這文化傳承與轉化的兩個過程不必然是對立的兩極，他們同時出現在薩摩亞文化史。在此可以看出它們展現的變化速率和節奏；就如同年代層序表中所呈現的，這些變化與不斷改變的文化和環境等因素是息息相關的。

關鍵詞： 薩摩亞、波里尼西亞、考古學、文化史