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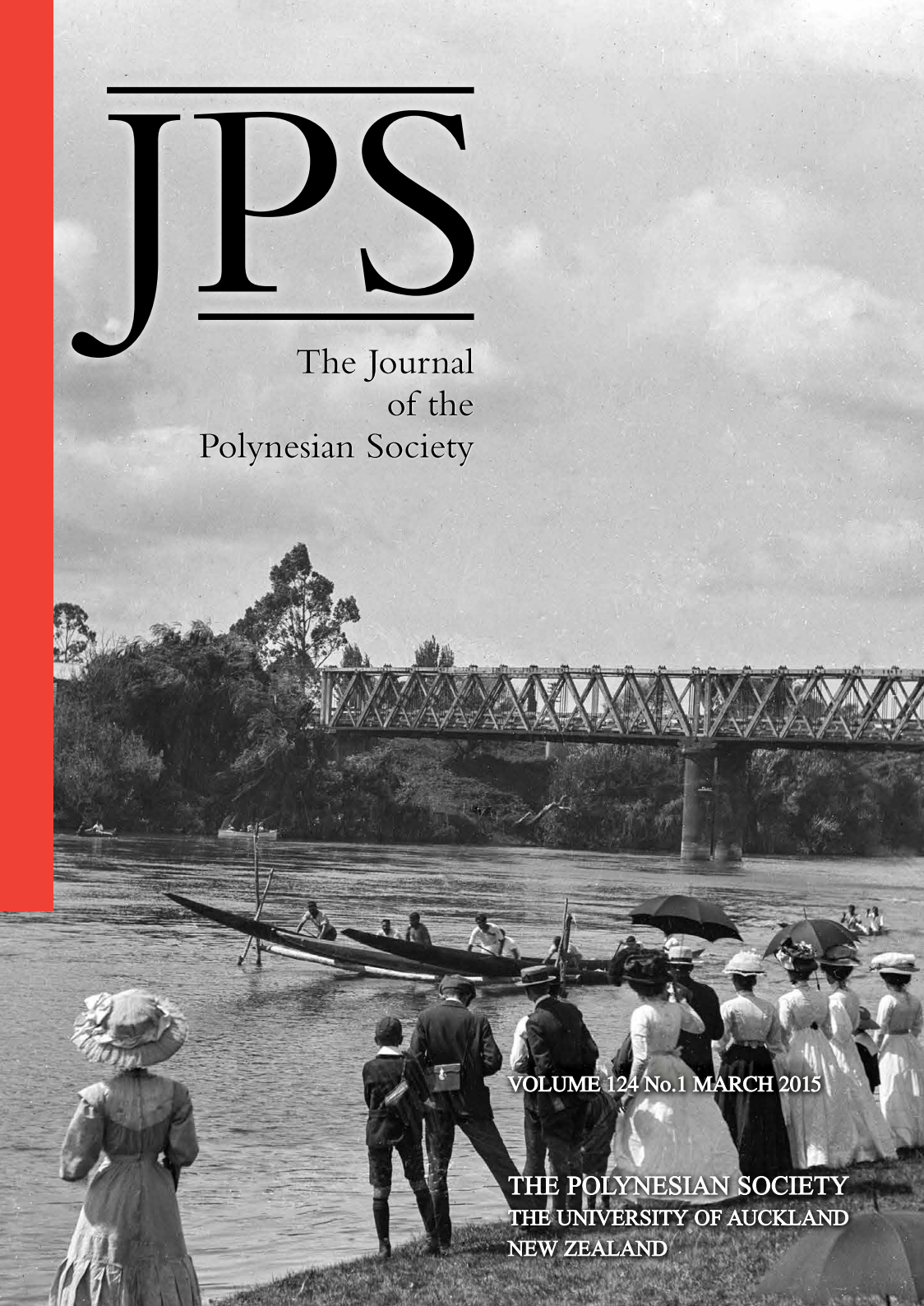

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Cover image: View of Māori waka (canoes) in a hurdle race on the Māori waka hurdle race on the Waikato River at the Ngāruawāhia Regatta. Godber, Albert Percy, 1875-1949 Collection of albums, prints and negatives. Ref: APG-0710-1/2-G. Alexander Turnbull Library, Wellington, New Zealand.
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PHYLOGENETIC ANALYSIS OF POLYNESIAN RITUAL ARCHITECTURE SUGGESTS EXTENSIVE CULTURAL SHARING AND INNOVATION

ETHAN E. COCHRANE
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That Polynesian ritual architecture (Fig. 1) displays similarities due to cultural relatedness is uncontroversial. Like many other aspects of Polynesian life—language, culture, belief—there are architectural similarities across islands and archipelagos that are a product of people learning from each other, shared cultural ancestry and, perhaps less often, independent invention or convergent evolution (Kirch and Green 2001). There is also a long history of research on the cultural relatedness of Polynesian ritual architecture. In the 19th century Fornander (1969: 33-35, 59) suggested that some later Hawaiian *heiau* 'ritual architecture' owed their distinctive form to building techniques learned from voyagers newly arrived from the south. Later, archaeologists and anthropologists such as Emory (1933) and Linton (1925) suggested inter-archipelago interaction and ancestral connections as explanations for similarities in ritual architecture. Discussing the use of shaped, rectangular stone slabs set on end in a variety of ritual architecture, Linton outlined the evidence both for the independent invention of this construction technique throughout Polynesia, and contrastingly for its singular origin and dissemination throughout the region, "although the originating group [of islands] cannot now be determined" (Linton 1925: 19). A few years later Emory (1933: 49-50) argued that shaped stone facings found on ritual architecture in the Marquesas, Australs and Tonga likely originated in the Society Islands. Likewise, Bellwood noted that some similarities in East Polynesian *marae* 'ritual architecture' are a product of ancestral or phylogenetic relationships whereby:

> … following a period of isolation in the Marquesas and possibly also the Society Islands, an Eastern Polynesian polythetic assemblage differing from but overlapping with the Western Polynesian spread to all remaining parts of the Polynesian triangle…[including an] open court *marae* with combinations of walled and/or paved enclosures, upright slabs of stone, and stone platforms (Emory 1970), together with god houses for the storage of ceremonial appurtenances. (Bellwood 1975: 15-16)

Although noting some of the same characteristics of Polynesian ritual architecture, such as the presence of shaped stones, uprights or attached

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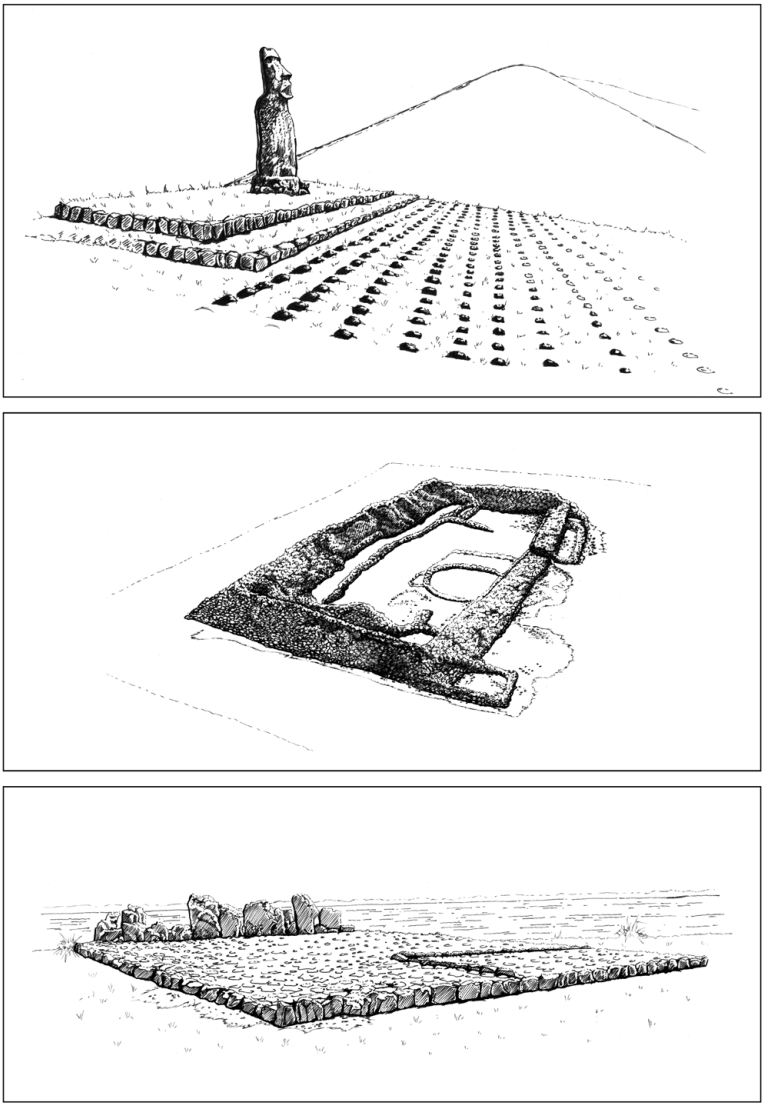

Figure 1. Polynesian ritual architecture. Top, *ahu-moai* Huri a Urenga, Rapa Nui (no. 174, Table 2). Middle, *heiau* Mo‘okini, island of Hawai‘i (no. 50, Table 2). Bottom, *marae* Vaiotaha, Huahine (no. 103, Table 2). Illustrations by Briar Sefton.

structures, more recent analyses of *marae*, *ahu-moai* and other ritual architecture forms have interpreted similarities across structures not in terms of cultural relatedness across Polynesia, but using emic meanings of these structures. For example, Wallin (1993) examined Society Islands *marae* and argued that similarities (i.e., *marae* belonging to the same type) reflected similar ideologically charged meanings in the past, such as the rounded stones in one *marae* type symbolising the heads of turtles, as a proxy for humans, and the importance of human sacrifice (Wallin 1993: 101-2). Kahn and Kirch (2011) also use an emic perspective in their work on Mo'orea and argue that some *marae* similarities can be explained as the material manifestation of an ideology that reinforced chiefly control.

Both the more recent interpretations of Polynesian ritual architecture at an island or intra-archipelago scale (for additional examples see Kahn 2010, Kolb 1994, Martinsson-Wallin 1994, Wallin 2001) and the earlier work which examined cultural relatedness between archipelagos examine architectural similarities that are assumed to be homologous or a product of cultural transmission (cf. Kirch [1990] where some aspects of monumental or ritual architecture are considered analogous). The importance of homologous similarity when identifying cultural phylogenies has been known to archaeologists for over a century. Kirch and Green (2001; see also Lyman [2001]) provide a detailed argument for phylogenetic explanations of Polynesian cultures, including similarities in ritual architecture. To wit, the settlers of East Polynesia had previously developed a common culture over perhaps 1500 years in Samoa, Tonga and nearby islands. This ancestral Polynesian culture included:

> … components of ritual architecture consistently present throughout all three main subregions of Polynesia…(1) an open space…designated by the term *malae* or *marae*; (2) some form of god house…attached or adjacent to the court…; [and] (3) posts or upright stones… (Kirch and Green 2001: 254)

Kirch and Green (2001: 89-90, 276) suggest that these components of ritual architecture were carried to central East Polynesia as populations settled new island groups. Some components of ritual architecture were modified in East Polynesia and spread to multiple archipelagos, for example demarcating the *malae* boundaries in stone, while other innovations, such as adding monolithic anthropomorphic stone statues, had more restricted distributions.

More generally, Kirch and Green (1987, 2001; see also Kirch 1984) see phylogenetic research as necessary for a holistic historical anthropology (combining archaeology, ethnology, linguistics and bioanthropology), a goal of which is to reconstruct the cultural patterns of ancestral societies and trace the branches that diverge from them, explaining similarities and differences

as results of adaptations to new environments, innovations, shared ancestral features, borrowings and the like. Integral to this research is the accurate reconstruction of ancestral societies for which Kirch and Green (2001: 42-52) propose a triangulation method. As survey stations are more precisely placed through measurement from multiple points, components of ancestral societies can be more precisely reconstructed if multiple lines of enquiry describe their existence. For example, comparative linguistics and ethnology both suggest the existence of ancestral Polynesian ritual architecture as described above.

The approach to analysing similarities in Polynesian monumental architecture presented here is related to Kirch and Green's phylogenetic research, but does not share the goal of reconstructing the ritual architecture components of an ancestral society. It has a simpler goal of quantitatively defining the patterns of relative phylogenetic similarity exhibited by ritual architecture and offering some possible explanatory processes for the patterns generated. In cultural phylogenetic research, *patterns of similarity*, such as might be depicted in a seriation order, branching tree or reticulated network, are hypotheses about *patterns of cultural relatedness*. By beginning with the patterns of similarity, we can evaluate the hypothesis that they are patterns of relatedness: (i) by assessing the classification used to describe the artefacts or features (for a particularly relevant example see Cochrane's [1998] assessment of Wallin's [1993] *marae* classification), (ii) by comparing the results of multiple pattern generation techniques (e.g., Buchanan and Collard 2008, Cochrane and Lipo 2010), and (iii) by various technique-specific support statistics (Kitching *et al*. 1998, and see below). If the patterns of similarity are accepted as patterns of relatedness, there are conceivably multiple processes that might explain this cultural relatedness. These include cultural trait hitch-hiking (e.g., Ackland *et al*. 2007), natural selection and drift (e.g., Rogers and Ehrlich 2008) and population structure (e.g., Cochrane 2013); each needs to be systematically evaluated. In short, the approach taken here analyses and evaluates the generation of patterns separately from the conclusion of explanatory process (Cochrane 2001, Tolstoy 2008).

While the analysis of phylogenetic similarity has been largely developed in biology, such analyses are equally applicable to any cultural phenomena that owe some of their characteristics to transmission of information by people (Mace *et al*. 2005, Mesoudi 2011, Shennan 2002), including phenomena such as archaeological artefacts (e.g., Lipo *et al*. 2006), social trends (e.g., Bentley *et al*. 2004), ethnographic material culture (e.g., Tehrani and Collard 2002; also including Polynesian barkcloth, see Larsen 2011 and Tolstoy 2008), folktales (Ross *et al*. 2013), manuscripts (e.g., Spencer *et al*. 2004) and languages (e.g., Gray and Atkinson 2003). Additionally, it is important to consider that phylogenetic similarity does not denote *a priori* a branching

pattern of cultural relatedness. Perhaps many misunderstand this, because the iconic representation of a *biological* phylogeny is a branching tree, but tree-like relationships are not requisite in biology or culture. Finally, identifying phylogenetic similarities in Polynesian ritual architecture contributes to some of the fundamental research topics in Polynesian archaeology and anthropology including spatial patterns of colonisation (e.g., Wilmshurst *et al*. 2011), ancient interaction (McAlister *et al*. 2013) and the development of Polynesian ritual over time and space (e.g., Kahn and Kirch 2011).

PHYLOGENETIC METHODS FOR STUDYING ARCHITECTURE

To investigate phylogenetic similarity in the cultural realm valid techniques should be used to group similar phenomena and, perhaps more so than in biology, particular attention should be paid to how phenomena are classified. The next two sections review cladistics, a phylogenetic technique for grouping phenomena, and the classification of Polynesian ritual architecture for cladistic analysis.

Cladistic Techniques

There are multiple phylogenetic techniques for arranging classes or taxa, to use the jargon of phylogenetic analysis. Cladistics is used here, although Bayesian phylogenetics, phylogenetic networks and archaeological seriation are other options. Cladistics is a technique for arranging taxa in hierarchical sets determined by the distribution of traits across taxa. The traits that describe a taxon, such as length or colour, are termed characters in cladistics and the particular values of characters, such as 5 cm and blue, are character states. In this analysis, the taxa are classes of Polynesian ritual architecture and the characters describing them are particular architectural features with either presence or absence as the character state.

A common output of cladistic analysis, a branching tree, looks similar to the outputs of statistical grouping techniques such as factor analysis and hierarchical cluster analysis. Cladistics, however, is distinguished from these other techniques by the recognition of two kinds of character states, whereas statistical grouping typically considers all character states equally (when unweighted). In cladistics the two kinds of character states are ancestral and derived. Derived character states are those that two or more taxa share with their immediate common ancestor, but not with the preceding ancestor. Ancestral character states are shared by two or more taxa, their immediate common ancestor and the preceding common ancestor. Cladistic techniques find groups of taxa defined by shared derived character states. These groups or clades, should more accurately depict phylogenetic relationships than statistical grouping techniques which are based on phenetic similarity and do

not distinguish between ancestral and derived character states (Buchannan and Collard 2008, O'Brien *et al*. 2001). A clade, a group of related taxa, is also called a monophyletic unit, a concept used by Kirch and Green (2001) to describe the cultures of Polynesia and their postulated ancestral culture, Ancestral Polynesian Society.

Cladistic techniques also seek to generate an optimal arrangement of taxa based on the distribution of shared derived character states and there are several different optimality algorithms depending on the criteria chosen. Here, parsimony is the optimality criterion used. Parsimony techniques attempt to group taxa in a series of hierarchical relationships such that the number of character state changes in a tree required to account for all the taxa is minimised (i.e., most parsimonious). Figure 2 depicts two cladistic trees to illustrate this point. The number of character state changes in the top tree is five, a support statistic (see above) used to evaluate competing cladistic arrangements, and also giving the length of the tree in cladistic terminology. There is one character state change for the ancestor of Taxa 2-4, one for the ancestor of Taxa 3 and 4, and there are three character state changes that occur only in Taxon 4. We can create an alternative arrangement by switching the positions of Taxa 2 and 3. This tree, however, contains six character state changes. Thus the top tree is considered the better hypothesis of phylogenetic relationships using the parsimony criterion.

The cladistic tree in Figure 2 is a simplified example that we would rarely find in an analysis of real data. In this tree only one character reverts to an ancestral state, the switch from B' back to B in Taxon 2 of the bottom tree. Additionally, similar character state changes do not occur across separate branches of the tree. However, with cultural data we might expect character states to sometimes revert to ancestral states, akin to a process of reinvention, and similar sequences of character state change may occur in different cultural lineages or traditions, known as homoplasy in cladistics. Given these possibilities, it is often difficult for cladistic techniques to produce a single best tree consisting only of the bifurcating splits that represent hierarchical similarity relationships. If cladistic results include multiple equally "best" trees (that is multiple trees of the same length), they may be combined into a single consensus tree which depicts only the same bifurcating splits present in each equally best tree (a strict consensus tree). However, consensus trees showing the same bifurcating splits in at least half the equally best trees (a 50 percent majority rule consensus tree) are also used to depict likely taxa relationships. Where there are contradictory taxa relationships across trees of the same length, a consensus tree depicts these relationships as unresolved, with all taxa originating from the same node.

Another way to pinpoint the best cladistic tree is to make assumptions about character state changes. Implementing models of character state change, for

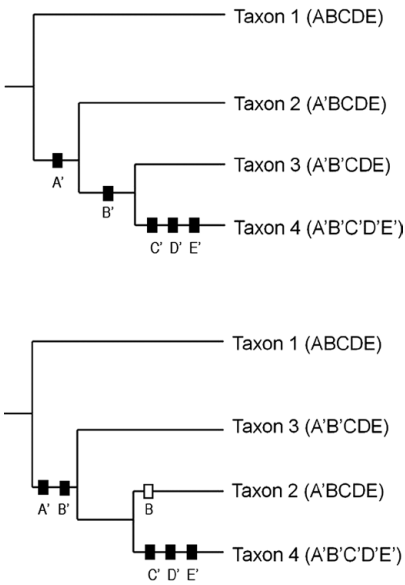

Figure 2. Two cladistic trees of Taxa 1-4 described by non-prime (ancestral) and prime (derived) character states. The top tree is the more parsimonious arrangement as only five character state changes are required as depicted by the black rectangles. On the bottom tree six character state changes are required including the reversal from B' back to the ancestral state B in Taxon 2 denoted by the open rectangle.

example deciding that change in certain characters is more likely than others or that some characters are more likely to undergo reversals than in others, may remove from consideration some trees that are otherwise in a group of equal length trees. However, this approach forces us to make additional assumptions about character state changes. Models of character state change are not inherently bad, but they do require another set of assumptions to be justified (see Tolstoy 2008).

Cladistics software takes care of the computational work of creating parsimonious trees given a dataset and there are several algorithms that can be followed to create trees, each with strengths and limitations that provide further avenues for evaluating competing arrangements. Prior to the computational work, however, researchers must construct a classification that describes taxa by homologous character states (Scotland 1992) and determine for the taxa under consideration which character states are ancestral and

which are derived. This latter task is referred to as determining character polarity and is accomplished through the choice of an outgroup (Kitching 1992, O'Brien *et al.* 2002). An outgroup is a taxon related to the taxa in a cladistic tree, with the stipulation that the particular configuration of character states in the outgroup came together as a set prior to the character states in any of the taxa in the cladistic tree. Thus an outgroup determines which character states are ancestral and which are derived. As different outgroups may produce different cladistic trees given the same set of taxa, the choice of outgroup can influence cladistic results and is yet another way to evaluate cladistic results. There are different methods for determining an outgroup (Kitching 1992) but in general one should construct an outgroup taxon that is close enough to the taxa being ordered to serve as an informative guide to characters' ancestral and derived statuses.

To summarise, cladistic trees are not explanations of phylogenetic similarity among a set of taxa. A cladistic tree is one hypothesis about the *pattern* of phylogenetic similarity or cultural relatedness. Different trees can be generated from the same set of taxa and each of these hypotheses can be evaluated by means internal to the cladistic technique (e.g., tree support statistics, bootstrapping) and through external data such as the chronological and spatial relationships of taxa. And while cladistic techniques attempt to arrange taxa into a series of hierarchical bifurcating sets, cladogenesis or branching evolution is not the only process that may explain a cladistic arrangement of taxa. Transmission within a single cultural lineage, akin to anagenesis, or the combination of different lineages, as with hybridisation, can also explain cladistic trees of perfectly bifurcating taxa (Kimbel *et al.* 2006, Skala and Zrzavy 1994). The most useful way to approach a cladistic tree of cultural phenomena is to consider the arrangement a hypothesis about phylogenetic or cultural transmission-generated relatedness of the human populations that produced the artefacts and that arose through several possible processes (see Cochrane 2008: 140).

Classification of Polynesian Ritual Architecture

To analyse phylogenetic similarity of Polynesian ritual architecture, one must be able to separate the field of ritual architecture from other forms in the archaeological record (see also Rolett 2010). For the following analyses, ritual architecture is defined by a rectilinear level area, the perimeter of which is demarcated by an elevation change (e.g., a line of rocks, rock wall, earth berm) and within which there is no evidence of the range of behaviours associated with domestic activities or food production. This definition of ritual architecture does not require that every structure be excavated to confirm the

absence of, for example, agricultural deposits or shell food remains, but it does indicate that ritual architecture identifications are hypotheses that can be evaluated in the future and that particular pieces of architecture may be added or removed based on new observations. This definition also likely excludes some pieces of architecture that should be included as their characteristics could be explained in terms of phylogenetic similarity with the ritual architecture identified here. For example, some ethnohistorically identified *marae* without bordered rectilinear areas (or courtyards) were not included in the structures examined. However, the purpose of defining the field as above is not to discover ethnohistorically recorded ritual locations, nor to recreate the sometimes ambiguously and idiosyncratically defined categories that are a part of our common sense (e.g., shrines, temples). The purpose is to identify pieces of architecture where there is a good chance that the similarities and differences across them are a result of cultural transmission. If, as part of the process of evaluating this research, the above definition is found to exclude some set of architecture that is likely to be phylogenetically related to the architecture analysed here, then the definition of ritual architecture can be modified, observations of the newly identified set of structures made, and the analyses re-run. Finally, the definition of ritual architecture used here is purposefully conservative to minimise errors of including architecture whose similarities are not a product of cultural transmission.

This definition of ritual architecture was applied to pieces of architecture described and identified by other researchers as presented in various publications, monographs and articles that typically focussed on local representations of ritual architecture such as *marae, me'ae* and *heiau* (e.g., Linton 1925, Stokes and Dye 1991, Wallin 1993). Some of these previously identified pieces of architecture were not included here, principally because no rectilinear and bordered area could be identified even though other observations common to many definitions of ritual architecture, such as upright stones, could be made. Again the justification for this is to conservatively generate a set of architecture across which we can confidently expect similarities related to cultural transmission, and to which other architecture can later be added if warranted by new observations or analyses. Finally, while an attempt was made to examine the major publications dealing with ritual architecture across Polynesia (Fig. 3), hundreds of other publications (e.g., the huge cultural resource or heritage management literature in Hawai'i) might also describe stone and earth architecture that would fit the definition of ritual architecture used here. However, searching every publication was not feasible at this exploratory stage, therefore the structures used in the analyses certainly underestimate the abundance of ritual architecture in Polynesia.

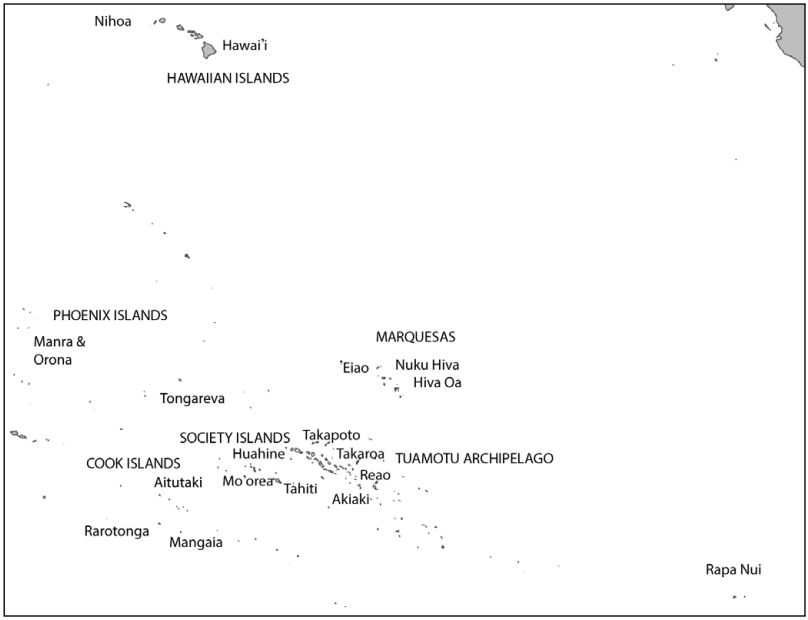

Figure 3. Map of Pacific islands, showing those islands and archipelagos (upper case) with ritual architecture used in this analysis.

After the assemblage of ritual architecture was identified, individual structures were classified. Classification for cladistics should aim to create taxa defined by characters that are homologous or demonstrate similarity due to cultural transmission. The homologous nature of characters is a hypothesis that may be discounted or confirmed with further research, but as a general guide characters should exhibit three qualities. First, they should be independent, so that the state of one character does not automatically force another character to display a particular state. If characters are not independent, the classification may generate variation related to unintended or unexamined relationships between characters, instead of variation that is explicable by transmission processes. Second, characters should not be linked to environmental variation to the degree that particular character state presences and absences may be determined by available raw materials in particular environments. For example, a character describing the use of branch coral (cf. *Acropora* sp.) in architecture construction would likely be

absent in Marquesan ritual architecture, but this absence would not reflect a lack of interaction and cultural transmission (i.e., phylogenetic similarity) with, for example, Hawaiian populations, but simply the likely extirpation of branch coral in Marquesan environments over 7000 years ago (Cabioch *et al*. 2011). A third quality of characters used for cladistic analysis is that that their states should vary spatially and temporally. Note that character states are expected to vary temporally and spatially; this is because we expect the frequency of cultural transmission to vary across space and time, but this variation should not be a result of the differential distribution of ritual architecture raw materials, as just discussed.

Characters here were defined based on the work of previous researchers who identified aspects of Polynesian ritual architecture that changed over time or that were associated with particular islands or archipelagos. Twelve characters were defined, each with two character states, present or absent (Table 1). The characters were defined so that presence-absence states of different characters were independent, so that they did not track the availability of architectural raw materials, and so that they might vary over space and time. It is unclear how much temporal variation is generated by these characters as chronological information for the vast majority of structures is not available, but perusal of the data for each structure in Table 2 does indicate that character states vary, although some (e.g., courtyard raised) more than others (e.g., interior enclosures). Like the definition of the field of ritual architecture, the classification of that architecture can be considered a hypothesis, a hypothesis that the classes generate variation explicable by cultural-transmission processes. If subsequent analyses suggest the classes are not performing as intended, the classification can be modified. This follows Teltser's (1995) trial and error approach to classification. Considering the foregoing classification issues, it should be clear why the cladistics characters and resulting architecture classes might not conform to ethnohistorically justified or common sense categories such as *luakini heiau* 'war ritual architecture', national *marae*, or smaller-scale units such as *ahu* 'altar'. Primarily, there are no unambiguous *archaeological* criteria for placing structures in these categories; there is also no theoretical warrant (see Lyman and O'Brien 2003) for using those categories to measure cultural transmission across Polynesia.

Finally, the results concerning phylogenetic similarity relate to the final forms of pieces of architecture after possible renovations to them over time. As different pieces of architecture were likely renovated to different degrees, some never and some extensively, the results must be considered a summary of phylogenetic similarity over time and space.

Table 1. Definitions of the presence-absence characters used to classify Polynesian religious architecture.

Dimension	Definition
Courtyard Raised	Level rectilinear surface(s) of architecture raised from the ground surface on all sides
Courtyard Walls	Two or more courses of material are placed along any portion of rectilinear boundaries of architecture, but do not have to completely enclose a space
Courtyard Paving	Level surface(s) or architecture are paved to any extent with flat material
Multiple Courtyard Levels	Two or more level surfaces at different elevations within the boundaries of the architecture and abutting two or more sides of the rectilinear boundaries of architecture
Interior Courtyard Walls	Two or more courses of material with a linear dimension greater than vertical dimension are placed within the boundaries of the architecture
Interior Platforms	A raised level surface within the boundaries of the architecture abutting one or no sides of the rectilinear boundaries of architecture
Interior Enclosures	Two or more courses of material are placed within the boundaries of the architecture and completely enclose a space
Courtyard Pits	An artificially excavated or modified area within the boundaries of the architecture that creates a depression below a level surface
Uprights	Single stone/coral object set freestanding in a level surface with height greater than width
Images	Anthropomorphic images in stone are placed within the boundaries of the architecture
Dressed Stone or Coral	Stone or coral used in construction modified through chipping, pecking or grinding after extraction from raw material source
Substructures	One or more enclosed spaces (raised or walled or both) abut the exterior boundary of the architecture

Table 2. Polynesian religious architecture (n=267) classified by 12 presence-absence characters.
∗ Key to references codes. B78: Bellwood (1978); DP04: Di Piazza and Pearthree (2004); E28: Emory (1928); E34: Emory (1934); L25: Linton (1925); MW94: Martinsson-Wallin (1994); S91: Stokes and Dye (1991); W93: Wallin (1993).

Identification no.	Reference ∗	Site designation	Site name	Island	Courtyard raised	Courtyard walls	Courtyard paving	Multiple courtyard levels	Interior courtyard walls	Interior platforms	Interior enclosures	Courtyard pits	Uprights	Images	Dressed stone or coral	Substructures
1	B78	AIT1	Toka-pu-moana	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0
2	B78	AIT16	Kaionu	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0
3	B78	AIT18	Tai-pu-tera	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0
4	B78	AIT23	Toko-nga-rangi	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0
5	B78	AIT25	Te Tapere	Aitutaki	0	0	0	0	0	0	1	0	1	0	0	0
6	B78	AIT26	Te Ivi Aitu	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0
7	B78	AIT31	Nukumanini	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0
8	B78	AIT32	A‘u-aitu	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0
9	B78	AIT36	–	Aitutaki	0	0	0	0	0	0	1	0	1	0	0	0
10	B78	AIT34	Atetava	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0
11	B78	AIT35	Vai-roro-i-te-mata-o-Ai	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0
12	B78	AIT37	Pokotutu	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0

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Identification no.	Reference *	Site designation	Site name	Island	Courtyard raised	Courtyard walls	Courtyard paving	Multiple courtyard levels	Interior courtyard walls	Interior platforms	Interior enclosures	Courtyard pits	Uprights	Images	Dressed stone or coral	Substructures
13	B78	AIT42	Paepae Arueia	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0
14	B78	AIT45	Pare-ka-vakevake	Aitutaki	0	0	0	0	0	0	0	0	1	0	0	0
15	E34	1	Hitiaga	Akiaki	0	0	0	0	0	0	0	0	1	0	0	0
16	L25	5	–	Eiao	0	0	1	0	0	0	0	0	0	0	0	0
17	L25	183	Vevau	Fatuhiva	0	0	1	1	1	0	0	0	0	0	0	0
18	S91	3805	Lonohelemoa heiau	Hawai'i	1	0	1	1	0	1	0	1	0	0	0	0
19	S91	3804	Puoa Heiau	Hawai'i	1	1	1	1	?	0	0	1	0	0	0	0
20	S91	3803	Uukanipo/Ukanipō heiau	Hawai'i	0	1	0	0	0	1	0	0	0	0	0	1
21	S91	3800	Ho'opalahuli heiau	Hawai'i	1	0	1	0	0	0	0	0	0	0	0	0
22	S91	3735	Pa'ikapahu	Hawai'i	0	1	?	0	0	0	0	0	0	0	0	?
23	S91	3732	Hikiau	Hawai'i	1	0	1	1	0	0	1	0	0	1	0	0
24	S91	50-Ha-C23-2	Helehelekalani	Hawai'i	1	0	1	0	0	0	0	0	0	0	0	0
25	S91	3725	Kamaiko	Hawai'i	1	0	1	?	?	1	0	1	0	0	0	0
26	S91	50-Ha-C20-236	Hale o Lono heiau	Hawai'i	1	?	?	?	?	0	?	?	?	?	?	?
27	S91	50-Ha-C18-1	Hāhāpō	Hawai'i	?	1	1	1	0	0	0	0	0	0	0	0
28	S91	3719	Kahauwawaka	Hawai'i	1	0	0	0	0	0	0	0	0	0	0	0

29	S91	3718	Koʻa	Hawaiʻi	1	0	0	0	0	0	0	0	0	0	0	0
30	S91	50-Ha-B21-1	Mōlīlele	Hawaiʻi	1	0	0	0	0	0	0	0	0	0	0	0
31	S91	3607	Kalalea	Hawaiʻi	0	1	0	0	0	0	0	1	0	0	0	1
32	S91	3604	Kukuiokaloko/Kanaha	Hawaiʻi	0	1	0	0	0	0	0	0	0	0	0	0
33	S91	3601	Alainamoana/Alainamona	Hawaiʻi	1	0	0	0	0	0	0	0	0	0	0	0
34	S91	3602	Halekane	Hawaiʻi	1	0	0	0	0	0	0	0	0	0	0	0
35	S91	3592	Kalamakoī	Hawaiʻi	1	0	1	0	1	0	0	0	0	0	0	0
36	S91	3562	Imakakaloa/ʻImakakoloa	Hawaiʻi	0	1	0	0	0	1	0	0	0	0	0	1
37	S91	3530	Keʻekū	Hawaiʻi	1	1	1	1	0	1	0	1	0	0	0	1
38	S91	3538	Kohāikalani	Hawaiʻi	?	1	1	?	?	0	?	?	?	?	?	?
39	S91	3512	Lanipao	Hawaiʻi	?	1	?	1	0	0	0	0	0	0	0	1
40	S91	HV-276	Wahaʻula	Hawaiʻi	0	1	1	1	0	1	0	0	0	?	0	1
41	S91	4224	Punaluʻu	Hawaiʻi	?	1	1	1	0	0	0	0	0	0	0	0
42	S91	50-Ha-A21-5	Kekaloa	Hawaiʻi	1	0	1	1	0	1	0	0	0	0	0	1
43	S91	2517	Mahinaakaaka	Hawaiʻi	1	0	1	0	0	0	0	0	0	0	0	0
44	S91	2500	Kūkiʻi	Hawaiʻi	1	0	1	0	0	0	0	0	1	0	1	0
45	S91	1784	Mamala/Haʻakoa	Hawaiʻi	0	1	?	1	?	0	?	?	?	?	?	?
46	S91	2100	Kaʻapeʻape	Hawaiʻi	1	0	?	0	0	0	0	0	0	0	0	0
47	S91	4139	Puʻukoholā	Hawaiʻi	1	1	1	1	0	1	0	1	0	1	0	0
48	S91	50-Ha-E5-2	Mailekini	Hawaiʻi	1	1	1	1	0	0	0	0	0	0	0	0
49	S91	2335	Pōhakupa	Hawaiʻi	0	0	1	0	0	1	0	0	0	0	0	1
50	S91	2328	Moʻokini	Hawaiʻi	0	1	0	1	1	1	1	1	0	0	0	1
51	S91	2422	Kapālama	Hawaiʻi	0	0	1	0	0	0	0	0	0	0	0	1
52	S91	3843	Kawaluna	Hawaiʻi	0	1	?	0	0	0	0	0	0	0	0	0

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53	S91	3842	Palihiolo	Hawai'i	0	1	1	0	0	0	0	0	0	0	0	0
54	S91	3839	Ahu'ena	Hawai'i	1	0	?	?	0	0	?	?	0	1	?	?
55	S91	3834	Mao/Nalupo'o	Hawai'i	1	1	1	0	0	0	0	1	0	0	0	0
56	S91	3836	Kauakaiakaola	Hawai'i	0	1	1	1	1	1	?	1	0	1	0	1
57	S91	3833	Halehau 1	Hawai'i	1	0	1	1	0	0	0	0	0	0	0	0
58	S91	3833	Halehau 2	Hawai'i	1	0	1	1	0	0	0	0	0	0	0	0
59	S91	3833	Halehau 3	Hawai'i	1	1	1	1	0	0	0	0	0	0	0	0
60	S91	3833	Halehau 4	Hawai'i	1	0	1	0	0	0	0	0	0	0	0	0
61	S91	3829	Hikapaia	Hawai'i	1	1	1	1	1	1	0	0	0	0	0	1
62	S91	3831	Hā'ulelani Pu'uhonua/ Pakiha	Hawai'i	0	1	1	0	0	0	0	0	0	0	0	0
63	S91	3827	Keolonāhihi	Hawai'i	?	1	?	0	1	0	0	0	0	1	0	1
64	S91	3830	Hale'a'ama	Hawai'i	1	0	1	0	0	0	0	0	1	1	0	0
65	S91	3832	Haleokekupa	Hawai'i	0	1	0	0	0	0	0	1	0	0	0	0
66	S91	2009	Haukalua	Hawai'i	1	0	0	0	0	0	0	0	0	0	0	0
67	S91	3825	Lahai/Lahae	Hawai'i	1	0	?	0	0	0	0	0	0	0	0	1

68	S91	50-Ha-D4-17	Hale o Kāne	Hawai‘i	0	1	1	0	1	0	1	0	0	0	0	0
69	S91	3822	Halela‘au	Hawai‘i	1	0	1	1	0	0	0	0	0	0	0	1
70	S91	3816	Ku‘emanu	Hawai‘i	1	1	?	1	0	0	0	1	0	0	0	0
71	S91	3817	Hāpaiali‘i	Hawai‘i	1	0	1	0	1	1	0	0	0	0	0	0
72	S91	3818	Ke‘ekū	Hawai‘i	1	1	1	0	0	1	0	1	0	?	0	1
73	S91	3819	Mākole‘ā	Hawai‘i	0	1	1	0	1	0	0	1	0	0	0	1
74	S91	3823	Paoumi/Poumi	Hawai‘i	1	1	1	0	0	0	0	0	0	0	0	0
75	S91	50-Ha-D4-100	Ka‘io‘ena/Keahiolo	Hawai‘i	1	0	1	0	0	0	0	1	0	0	0	0
76	S91	3808	Kualanui	Hawai‘i	1	1	1	1	0	0	0	1	0	0	0	0
77	S91	3807	Mā‘ihi	Hawai‘i	1	1	1	0	0	1	0	1	0	0	0	0
78	S91	3806	Kekuaokalani/Kekuakalani	Hawai‘i	1	0	?	0	0	0	0	0	0	0	0	0
79	L25	97	Pahuone	Hivaoa	0	1	1	?	0	?	0	1	0	0	0	0
80	L25	99	Puniaoha	Hivaoa	1	0	?	0	0	0	0	0	0	0	1	0
81	L25	100	Tetaoautani	Hivaoa	0	1	1	0	1	1	0	1	0	1	1	0
82	L25	101	Muutea	Hivaoa	0	0	1	1	0	1	0	1	0	1	1	1
83	L25	103	Pouau	Hivaoa	1	0	?	0	0	1	0	0	0	1	0	0
84	L25	104	A‘aha	Hivaoa	1	0	0	?	0	?	0	0	0	0	1	0
85	L25	105	–	Hivaoa	0	0	1	1	0	1	0	0	0	1	1	1
86	L25	113	–	Hivaoa	1	0	1	1	0	1	0	0	0	1	1	1
87	L25	116	Faiho	Hivaoa	0	1	0	0	1	1	0	0	0	0	0	0
88	L25	117	Motuoa	Hivaoa	1	0	1	0	0	1	0	0	0	0	1	0
89	L25	118	–	Hivaoa	?	0	1	?	0	?	0	1	0	1	1	0
90	L25	119	–	Hivaoa	0	0	1	1	0	0	0	1	1	0	1	0
91	L25	121	–	Hivaoa	0	0	0	1	0	1	1	1	0	0	0	1

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92	L25	122	Oipona	Hivaoa	0	0	1	1	0	1	0	0	0	1	1	0
93	L25	123	Pouani	Hivaoa	1	0	1	1	0	0	0	1	0	0	1	1
94	L25	129	Meaefaua	Hivaoa	?	1	1	1	?	1	1	1	0	1	1	1
95	L25	130	Faeumanui	Hivaoa	?	0	0	0	0	?	0	0	0	1	1	0
96	L25	134	–	Hivaoa	0	1	1	0	0	1	0	1	0	1	1	0
97	L25	137	–	Hivaoa	?	0	?	?	0	?	0	0	0	1	0	0
98	L25	138	–	Hivaoa	?	0	0	?	0	?	0	1	0	0	1	0
99	L25	146	Tapuohe	Hivaoa	0	0	1	?	0	?	0	0	0	0	0	0
100	L25	167		Hivaoa	0	1	0	?	0	?	0	0	0	1	0	0
101	W93	227	–	Huahine	1	0	1	0	0	0	0	0	1	0	0	0
102	W93	228	–	Huahine	1	0	1	0	0	0	0	0	1	0	0	0
103	W93	229	–	Huahine	1	0	1	0	0	0	0	0	1	0	0	0
104	W93	230	–	Huahine	1	0	1	0	0	0	0	0	0	0	0	1
105	W93	231	–	Huahine	1	1	1	0	0	1	0	0	1	0	0	0
106	W93	232	–	Huahine	0	0	0	0	0	1	0	0	1	0	0	0
107	W93	234	–	Huahine	1	0	1	0	0	1	0	0	0	0	0	0

108	W93	235	–	Huahine	1	0	1	0	0	1	0	0	1	0	0	0
109	W93	236	–	Huahine	1	0	1	0	0	1	0	0	1	0	0	0
110	W93	238	–	Huahine	1	0	1	0	0	1	0	0	0	0	0	0
111	W93	239	–	Huahine	1	0	1	0	0	0	0	0	1	0	0	0
112	W93	242	–	Huahine	0	0	0	0	0	1	0	1	0	0	0	0
113	W93	243	–	Huahine	0	0	0	0	0	1	0	0	1	0	0	0
114	W93	244	–	Huahine	0	1	1	1	0	1	0	1	1	0	0	0
115	W93	245	–	Huahine	0	0	1	1	0	0	0	0	1	0	0	0
116	W93	248	–	Huahine	0	1	1	0	0	1	0	0	1	0	0	0
117	W93	257	–	Huahine	0	0	0	0	0	1	0	0	1	0	0	0
118	W93	260	–	Huahine	0	1	1	1	0	1	0	0	1	0	0	1
119	E34	1	Raiupu	Makatea	0	0	0	0	0	1	0	0	1	0	0	0
120	B78	MAN1	Tenoki	Mangaia	0	0	0	0	0	0	0	0	?	0	0	0
121	B78	MAN6	Areuna	Mangaia	0	0	0	0	0	0	0	0	1	0	0	0
122	B78	MAN7	Manugaroa	Mangaia	0	0	1	0	0	0	1	0	1	0	0	0
123	B78	MAN11	O-te-ano	Mangaia	0	0	0	0	0	0	?	0	1	0	0	0
124	B78	MAN12	Are-vaka	Mangaia	0	0	0	0	0	0	0	0	1	0	0	0
125	B78	MAN14	Para-I-te-paeru	Mangaia	0	0	0	0	0	0	0	0	1	0	0	0
126	B78	MAN15	Taumatini	Mangaia	1	0	0	0	0	0	0	0	?	0	0	0
127	B78	MAN16	Maputu	Mangaia	0	0	0	0	0	0	0	0	?	0	0	0
128	B78	MAN17	Ivanui	Mangaia	0	0	0	0	0	1	0	0	1	0	0	0
129	B78	MAN18	Te Atuapai	Mangaia	0	0	0	0	0	0	0	0	1	0	0	0
130	B78	MAN22	Arangirea	Mangaia	?	0	0	0	0	0	0	0	0	0	0	0
131	B78	MAN25	Rangi-ta-‘ua	Mangaia	0	0	0	0	0	0	0	0	1	0	0	0

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132	B78	MAN26	Are Karioi Marae	Mangaia	0	0	0	0	0	1	0	0	1	0	0	0
133	B78	MAN29	Orongo	Mangaia	?	0	1	0	0	1	?	0	1	?	0	0
134	DP04	Syd-1/2	–	Manra	0	0	1	1	0	0	0	0	1	0	0	1
135	W93	187	–	Mo`orea	0	1	1	0	0	1	1	0	1	0	0	0
136	W93	188	–	Mo`orea	1	0	1	0	0	1	0	0	1	0	0	0
137	W93	191	–	Mo`orea	0	1	1	0	0	1	1	0	1	0	0	1
138	W93	192	–	Mo`orea	0	0	1	0	0	0	0	0	1	0	0	0
139	W93	193	–	Mo`orea	0	0	1	0	0	0	0	0	1	0	0	0
140	W93	195	–	Mo`orea	0	1	1	0	0	0	0	0	0	0	0	1
141	W93	196	–	Mo`orea	0	1	1	1	0	0	0	0	1	0	0	1
142	W93	197	–	Mo`orea	0	1	1	0	0	0	0	0	1	0	0	0
143	W93	211	–	Mo`orea	0	1	1	1	0	0	0	0	1	0	1	1
144	W93	212	–	Mo`orea	0	0	1	0	0	0	0	0	1	0	0	0
145	W93	214	–	Mo`orea	0	1	1	0	0	1	0	0	1	1	1	0
146	W93	215	–	Mo`orea	0	1	1	0	0	1	0	0	1	0	0	0
147	E28	1	–	Nihoa	1	1	1	0	1	0	0	0	1	0	0	0

148	E28	6	–	Nihoa	1	0	1	0	0	0	0	0	1	0	0	0
149	E28	8	–	Nihoa	1	0	1	0	0	0	0	0	1	0	0	1
150	E28	9	–	Nihoa	1	0	1	0	0	0	0	0	1	0	0	0
151	E28	10	–	Nihoa	0	0	0	0	0	0	0	0	1	0	0	0
152	E28	11	–	Nihoa	0	0	0	0	0	0	0	0	1	0	0	0
153	E28	28	–	Nihoa	1	1	?	0	0	0	0	0	1	0	0	0
154	E28	40	–	Nihoa	0	1	0	0	0	0	0	0	1	0	0	1
155	E28	41	–	Nihoa	0	1	0	0	0	0	0	0	1	0	0	0
156	E28	45	–	Nihoa	0	0	0	0	0	0	0	0	1	0	0	0
157	E28	50	–	Nihoa	0	1	0	0	0	0	0	0	1	0	0	0
158	E28	51	–	Nihoa	1	0	1	0	0	0	0	0	1	0	0	0
159	L25	17	Taputehiavau	Nukuhiva	1	0	1	0	0	1	0	1	0	0	0	1
160	L25	18	Potekava	Nukuhiva	1	0	1	1	0	0	0	0	0	0	1	1
161	L25	19	Takahau	Nukuhiva	0	0	1	?	0	?	0	1	0	0	1	0
162	L25	21	Vaovaoua	Nukuhiva	1	0	?	?	0	?	0	1	0	0	1	0
163	L25	22	Mahaiata	Nukuhiva	1	0	1	1	0	0	0	1	0	0	1	0
164	L25	27	Paetekeika	Nukuhiva	0	0	1	1	0	0	0	0	0	1	1	1
165	L25	34	Ahau	Nukuhiva	?	?	1	?	?	1	0	1	0	0	1	1
166	L25	35	Paeke	Nukuhiva	1	0	1	?	0	?	0	1	0	1	1	1
167	DP04	Hull-1	–	Orona	0	0	1	0	0	0	?	0	1	0	1	0
168	MW94	56	Naunau III	Rapa Nui	0	0	0	0	?	1	?	0	0	1	1	0
169	MW94	156	Vinapu II phase 2	Rapa Nui	0	0	0	0	?	1	?	0	0	1	1	0
170	MW94	14	Hanga Kioe 2	Rapa Nui	0	0	?	1	?	0	?	0	0	1	1	0
171	MW94	66	Hekii 1	Rapa Nui	0	1	1	0	?	1	?	0	0	1	1	0

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172	MW94	20	Akivi	Rapa Nui	0	1	0	0	?	1	?	0	0	1	1	0
173	MW94	124	Ure Uranga te Mahina a-e	Rapa Nui	0	0	?	0	1	1	?	0	0	1	1	0
174	MW94	147	Huri a Urenga	Rapa Nui	0	1	1	0	?	1	?	1	0	1	1	0
175	MW94	11	Ko te Riku	Rapa Nui	0	0	1	0	?	1	?	0	0	1	1	0
176	MW94	106	Moai Tuu-Tahi	Rapa Nui	0	?	?	0	?	1	?	0	0	1	1	0
177	MW94	8	Vai Uri	Rapa Nui	0	0	1	0	?	1	?	0	0	1	1	0
178	B78	51/1	Lower Maungaroa cluster	Rarotonga	0	0	1	0	0	0	1	1	1	0	0	0
179	B78	51/3	Lower Maungaroa cluster	Rarotonga	0	0	1	0	0	0	0	0	1	0	0	0
180	B78	51/5	Lower Maungaroa cluster	Rarotonga	0	0	1	0	0	1	?	0	1	0	0	1
181	B78	51/9	Lower Maungaroa cluster	Rarotonga	0	0	1	0	0	0	0	0	1	0	0	0
182	B78	51/11	Lower Maungaroa cluster	Rarotonga	0	0	1	0	0	0	0	0	1	0	0	0
183	B78	51/15	Lower Maungaroa cluster	Rarotonga	0	0	1	0	0	1	0	0	1	0	0	0
184	B78	51/19	Lower Maungaroa cluster	Rarotonga	0	0	1	0	0	0	0	0	1	0	0	0
185	B78	51/23	Lower Maungaroa cluster	Rarotonga	0	0	1	0	0	0	?	0	1	0	0	0
186	B78	51/24	Lower Maungaroa cluster	Rarotonga	0	0	0	0	0	0	0	0	1	0	0	0
187	B78	51/31	Lower Maungaroa cluster	Rarotonga	0	0	0	0	0	0	0	0	0	0	0	0

188	B78	53/7	Upper Maungaroa cluster	Rarotonga	0	0	0	0	0	0	0	0	1	0	0	0
189	B78	53/14	Upper Maungaroa cluster	Rarotonga	0	0	1	0	0	0	0	0	1	0	0	0
190	B78	48	Avana Valley	Rarotonga	?	?	?	?	?	1	?	?	1	?	?	?
191	B78	104	Marae by stream	Rarotonga	0	0	1	0	0	0	0	0	1	0	0	0
192	B78	105	Marae	Rarotonga	0	0	0	0	0	0	?	0	1	0	0	0
193	E34	25	Manuatika	Reao	0	0	0	0	0	1	0	0	0	0	0	0
194	E34	13	Tepohatu	Reao	0	0	0	0	0	1	0	0	0	0	0	1
195	E34	12	–	Reao	0	0	0	0	0	1	0	0	1	0	0	0
196	E34	26	Heketini	Reao	0	0	0	0	0	1	0	0	1	0	0	0
197	E34	5	Hitiagateata	Reao	0	1	1	0	0	1	0	0	1	0	0	0
198	E34	1	Hitianaunau	Reao	0	0	0	0	0	1	0	1	0	0	0	1
199	E34	4	Tearatavaka	Reao	0	0	0	0	0	1	0	0	1	0	0	1
200	E34	8	Teragituatini	Reao	0	1	0	0	0	1	0	1	1	0	0	0
201	E34	21	Tiave	Reao	0	0	?	0	0	1	0	0	1	0	0	0
202	E34	24	Teteka	Reao	0	0	?	0	0	1	0	0	0	0	0	1
203	W93	4	–	Tahiti	0	1	1	0	0	0	0	0	1	0	0	1
204	W93	6	–	Tahiti	1	0	0	?	?	0	?	?	?	?	?	?
205	W93	8	–	Tahiti	0	0	1	?	0	0	0	0	1	0	0	0
206	W93	9	–	Tahiti	0	0	1	0	0	0	0	0	1	0	0	0
207	W93	10	–	Tahiti	1	0	1	0	0	0	0	0	1	0	0	0
208	W93	11	–	Tahiti	0	1	1	?	?	0	?	?	1	?	?	?
209	W93	12	–	Tahiti	0	1	1	0	0	0	0	0	1	0	1	1
210	W93	13	–	Tahiti	0	1	1	0	?	0	0	0	1	0	0	0
211	W93	14	–	Tahiti	0	1	1	0	0	0	0	0	1	0	0	0

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Identification no.	Reference *	Site designation	Site name	Island	Courtyard raised	Courtyard walls	Courtyard paving	Multiple courtyard levels	Interior courtyard walls	Interior platforms	Interior enclosures	Courtyard pits	Uprights	Images	Dressed stone or coral	Substructures
212	W93	15	—	Tahiti	0	0	1	0	0	0	0	0	1	0	0	0
213	W93	16	—	Tahiti	0	1	1	0	0	1	0	0	1	0	0	0
214	W93	17	—	Tahiti	0	1	1	0	0	0	0	0	0	0	1	0
215	W93	18	—	Tahiti	0	1	?	0	0	0	0	0	1	0	1	1
216	W93	19	—	Tahiti	0	0	?	0	0	0	0	0	1	1	0	0
217	W93	20	—	Tahiti	0	1	1	0	0	1	0	0	1	0	0	0
218	W93	21	—	Tahiti	1	0	1	0	0	0	0	0	1	0	0	0
219	W93	24	—	Tahiti	?	1	?	0	0	1	0	0	0	0	0	0
220	W93	26	—	Tahiti	0	1	1	0	0	0	0	1	1	0	0	0
221	W93	27	—	Tahiti	0	1	1	0	0	0	0	0	1	0	0	0
222	W93	28	—	Tahiti	0	1	1	0	0	0	0	0	0	0	0	0
223	W93	29	—	Tahiti	0	1	1	0	0	0	0	0	1	0	0	0
224	W93	30	—	Tahiti	0	1	1	0	0	1	0	0	1	0	0	0
225	W93	31	—	Tahiti	0	1	1	0	0	1	0	0	1	0	0	1
226	W93	32	—	Tahiti	0	1	1	0	0	0	0	0	1	0	0	0
227	W93	33	—	Tahiti	0	1	1	0	0	1	0	0	1	0	0	1

228	W93	34	–	Tahiti	1	0	1	0	0	0	0	0	0	0	0	0
229	W93	35	–	Tahiti	0	1	1	0	0	1	0	0	1	0	1	0
230	W93	36	–	Tahiti	0	1	1	0	0	0	0	0	1	0	0	0
231	W93	37	–	Tahiti	0	1	1	0	0	1	0	0	1	0	0	0
232	W93	38	–	Tahiti	1	0	1	0	0	0	0	0	1	0	0	0
233	W93	39	–	Tahiti	1	0	1	0	0	1	0	0	1	0	1	1
234	W93	40	–	Tahiti	0	1	1	0	0	0	0	0	0	0	0	0
235	W93	41	–	Tahiti	0	1	1	1	0	1	0	0	1	0	1	0
236	W93	50	–	Tahiti	0	1	0	0	0	1	0	0	1	0	0	0
237	W93	51	–	Tahiti	0	1	1	1	0	1	0	0	0	0	1	0
238	W93	52	–	Tahiti	0	1	1	0	0	1	0	0	0	0	1	1
239	W93	53	–	Tahiti	?	1	?	0	0	1	0	0	1	0	0	0
240	W93	54	–	Tahiti	0	?	1	0	0	?	0	0	1	0	1	0
241	W93	55	–	Tahiti	0	1	1	1	0	1	0	0	1	0	1	0
242	W93	144	–	Tahiti	0	1	1	0	1	1	0	0	1	0	0	1
243	L25	171	Eia	Tahuata	0	1	0	?	0	?	1	0	1	0	0	0
244	E34	1	Hikuragi	Takapoto	0	0	0	0	0	0	0	0	1	0	0	0
245	E34	2	Kotukurere	Takapoto	0	0	0	0	0	0	0	0	1	0	0	0
246	E34	6d	–	Takaroa	0	1	0	0	0	0	0	0	1	0	0	0
247	E34	9b	Tuagiagi	Takaroa	0	1	0	0	0	0	0	0	1	0	0	0
248	E34	6a	Mahina-i-te-ata	Takaroa	0	1	0	1	0	0	0	0	1	0	1	0
249	E34	7	Matatipoki	Takaroa	0	0	0	1	0	0	0	0	1	0	0	0
250	E34	9a	Tuagiagi	Takaroa	0	0	0	1	0	1	0	0	1	0	0	0
251	E34	12a	Patu-o-Rogo	Takaroa	0	0	0	1	0	1	0	0	1	0	0	0

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Identification no.	Reference *	Site designation	Site name	Island	Courtyard raised	Courtyard walls	Courtyard paving	Multiple courtyard levels	Interior courtyard walls	Interior platforms	Interior enclosures	Courtyard pits	Uprights	Images	Dressed stone or coral	Substructures
252	E34	15	Paene	Takaroa	0	0	0	1	0	0	0	0	1	0	0	0
253	E34	18	Kaietetini/Kotukurere	Takaroa	0	0	0	1	0	0	0	0	1	0	0	0
254	B78	TON3	Nui-te-kainga	Tongareva	0	0	0	0	0	0	0	0	1	0	1	0
255	B78	TON4	Te Tohi	Tongareva	0	0	0	0	0	0	1	0	1	0	1	0
256	B78	TON9	Mohra-kura II	Tongareva	0	0	0	0	0	0	0	0	1	0	1	0
257	B78	TON16/II-III	Nukurea	Tongareva	0	0	0	0	0	0	0	0	1	0	1	0
258	B78	TON17	Tongariro	Tongareva	0	0	1	0	0	0	1	1	1	0	1	0
259	B78	TON20	Te Vete	Tongareva	0	0	0	0	0	1	0	0	1	0	1	0
260	B78	TON25	Saeha	Tongareva	0	0	0	0	0	1	0	0	1	0	1	0
261	B78	TON29	Marae Tongaroa	Tongareva	0	0	0	0	0	1	0	0	1	0	1	0
262	L25	47	Mataihumanu	Uahuka	0	1	1	1	0	0	1	0	0	1	0	0
263	L25	52a	Ahau	Uahuka	1	0	1	0	0	0	0	0	0	0	0	1
264	L25	53	Taiaipaitea	Uahuka	0	?	0	0	0	1	0	0	0	0	1	1
265	L25	59	Meaiaute	Uahuka	1	0	0	1	0	0	0	0	0	1	1	0
266	L25	68	Metanioata	Uahuka	0	0	1	0	0	0	0	0	0	0	0	1
267	L25	72	Tapaiupoho	Uapo	0	0	1	0	0	1	0	0	0	1	0	0

CLASSIFICATION AND CLADISTIC ANALYSES

Using the 198 structures with known observations in all 12 characters (i.e., no question marks in Table 2) there are 104 taxa or classes defined by unique combinations of character states and these taxa are distributed across East Polynesia. Computationally, this is too many taxa for efficient cladistic analysis and 80 (77 percent) of these taxa have only one member, suggesting the 12-character taxa definitions do not adequately generate variation that can be analysed with cladistics to examine cultural transmission. Put another way, the 12-character taxa are too exclusive and not repeated at a high enough frequency over time and across space. Therefore, taking a trial and error approach to classification, different numbers and combinations of characters were used to create new classifications, noting with each classification the taxa with empirical members amongst the ritual architecture and the number of structures in each taxon. The resulting classification using six characters generates variation, that when analysed with cladistics, appears to be explicable by cultural transmission. Specifically, there are a reasonable number of taxa (25), these appear across different Polynesian islands and the number of structures in each taxon varies between 1 and 34 (median = 4). The six character classification includes the following characters, in order: (i) courtyard raised, (ii) courtyard partially/completely walled, (iii) courtyard partially/completely paved, (iv) interior platforms, (v) uprights and (vi) images. A taxon definition can be efficiently represented as a string of 0s and 1s, so for example a raised and paved courtyard with an interior platform is defined with the number string 110100.

Without attempting to minimise tree-length, there are over 5.8×10^{49} different branching trees that could be constructed with 25 taxa. Computer software allows us to search this "tree space" for the most parsimonious trees and a sample of one million equally parsimonious trees of length 25 were generated by the cladistic analysis using PAUP*4.0 software (Swofford 2001) and the "branch and bound" heuristic search option. These trees are the most parsimonious arrangements that could be generated given the limits of computer power. A consensus tree depicting the bifurcating relationships present in 50 percent or more of the one million equal length trees is shown in Figure 4. This tree is one hypothesis of the phylogenetic relationships between ritual architecture taxa and suggests that, except for some architecture in the Marquesas and Society Islands, there are no clear phylogenetic relationships for specific sets of taxa. Two architectural taxa found in the Marquesas and Society Islands (101100 and 101101) are defined by raised, paved courtyards, without walls and comprising multiple levels. These taxa are possibly more closely related to each other than to other taxa in the analysis. One of the architectural classes, found only on Hiva Oa (Marquesas Islands), also has

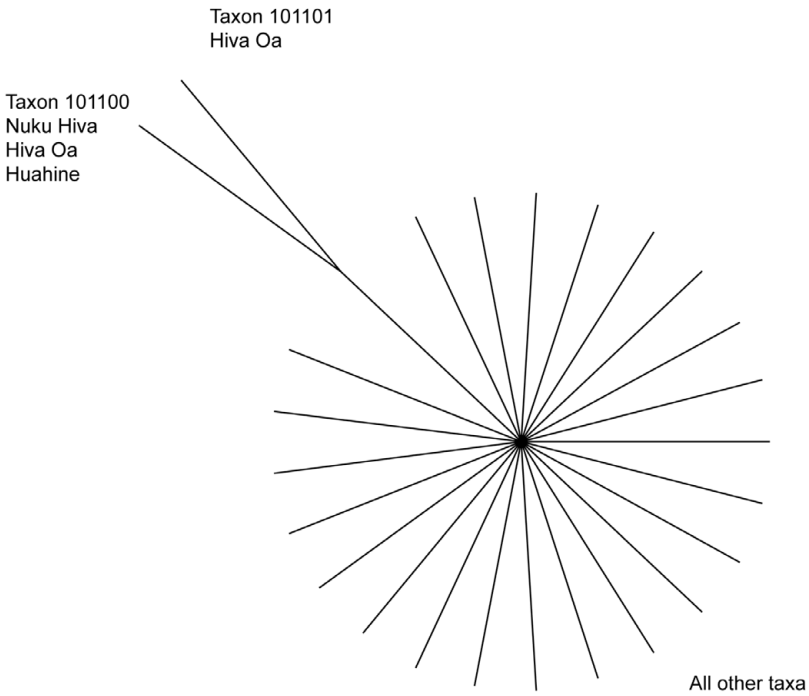

Figure 4. Unrooted cladistic tree showing relationships between 25 ritual architecture taxa. The number string indicates the presence-absence of the six characters defining the taxa (characters are in same order as described in text) and the island name indicates where the taxon is found. The tree has a CI of 0.24 and an RI of 0.61 (see text for definitions).

stone images. The remaining taxa in the group of unresolved relationships are distributed across all islands in Figure 3 except Nihoa, which did not have any architectural features included in the six character classification used here. Finally, Figure 4 is called an unrooted tree as no outgroup has been selected as a kind of "starting point" to trace the relationships in the tree. However, choosing any of the taxa in the tree as an outgroup, including the taxon with an absence in all characters (000000), does not change the structure of the relationships depicted in Figure 4, except that the taxon chosen as the outgroup is removed.

In addition to length, this tree also can be characterised by two additional statistical summaries that give some indication of the ability to arrange

the taxa in a clearly branching set of relationships. The Consistency Index (CI) is a measure of the amount of homoplasy in a tree, calculated by dividing the number of character states of the analysed taxa (12 here) by the number of character states displayed on the tree. The CI can range between zero (complete homoplasy) and one (no homoplasy). Greater amounts of homoplasy (i.e., CI values approaching zero) confound efforts to generate cladistic trees composed of bifurcating branches. The CI of the tree in Figure 4 is 0.24. The other summary measure is the Retention Index (RI) and is calculated by noting the amount of similarities in different lineages on a tree that do not represent taxa relatedness (i.e., observed homoplasy), and comparing this with the maximum possible amount of these similarities given the taxa definitions (i.e., maximum homoplasy). The RI measures the actual amount of homoplasy relative to the maximum amount of homoplasy and ranges from zero to one. Higher RI values occur when character state changes are concentrated primarily at the branching points of a tree and lower RI values occur when character state changes are concentrated at the tips of branches. Thus the higher the RI the more confidence we have that the tree is an accurate representation of phylogenetic relationships among taxa (Siebert 1992). The RI of the tree in Figure 4 is 0.61 and is similar to the RI of cladistic trees constructed from biological taxa and many cultural data sets (see Collard *et al*. 2006).

Seven of the taxa in the Figure 4 tree describe only a single piece of architecture. If we are interested in examining similarities produced through culturally transmitted and repeated behaviours, removing such unique or idiosyncratic examples may produce phylogenetic patterns that better characterise the majority of the effective population (see O'Brien *et al*. 2001: 1128). To explore this, a second cladistic analysis was run using the subset of 18 taxa that had multiple members. The phylogenetic relationships amongst these taxa are shown in the consensus tree in Figure 5. This is a 50 percent majority rule consensus tree built from the total sample of 378,796 possible trees of length 17, the shortest, or most parsimonious, tree length recovered by the PAUP* 4.0 software. This tree contains more resolved relationships than the Figure 4 tree, but for two-thirds of the taxa ("all other taxa" in the figure) it is still not possible to specify particular patterns of phylogenetic similarity. As with the tree in Figure 4, no outgroup has been specified for the Figure 5 tree. If a particular taxon is chosen as the outgroup, the cultural ancestor-descendent relationships in the tree are reckoned from that "starting point". For example, by choosing taxon 001101 that appears only on Rapa Nui as our outgroup, all remaining structures share a common ancestor in taxon 011101, which appears only in Rapa Nui and Hiva Oa Island in the Marquesas (cf. Martinsson-Wallin *et al*. 2013).

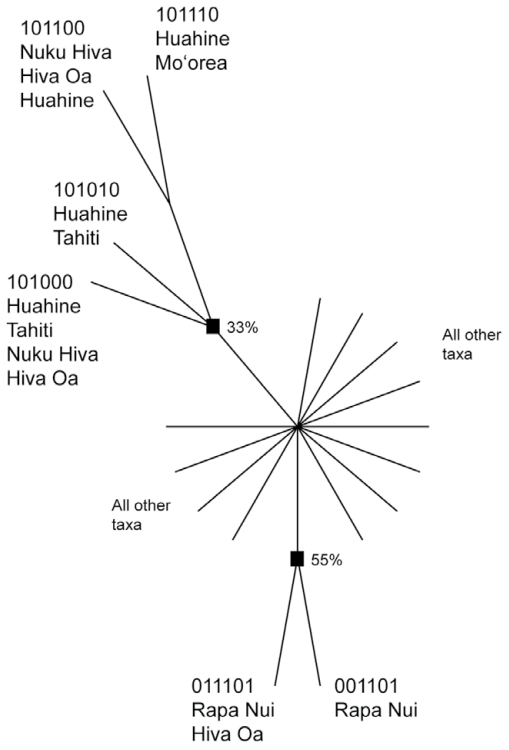

Figure 5. Unrooted cladistic tree showing relationships between 18 ritual architecture taxa with two or more members. The number string indicates the presence-absence of the six characters defining the taxa (characters are in same order as described in text) and the island name indicates where the taxon is found. The tree has a CI of 0.35 and an RI of 0.65. Bootstrap percentages of two branches are noted.

In this tree a series of taxa defined by raised and paved courtyards without walls (101 as first character states in taxa definitions) from the Marquesas and Society Islands have partially resolved relationships. The 101100 and 101110 taxa are more closely related to each other than either is to the remaining taxa on this branch. On another partially resolved branch, taxa from Rapa Nui and Hiva Oa in the Marquesas are more closely related to each other than either is to the remaining taxa. Unsurprisingly, the CI and RI measures for this tree are a bit higher than the Figure 4 tree, 0.35 and 0.65, respectively.

Bootstrap values are another measure of confidence that a tree is valid representation of taxa relationships. Bootstrap values are computed by first creating a number of pseudo-data matrices through randomly resampling the original data matrix (here, the taxon definition number strings) with replacement. This creates a sample of pseudo-data matrices that randomly decreases the importance of some characters and increases the importance of others in generating bifurcating splits. Cladistic analyses are run on the pseudo-matrices and the results compared to the cladistic tree produced from the original data. The frequency with which tree branches from the original analysis appear in the pseudo-data matrix analyses are considered the bootstrap values and can be treated as a measure of confidence in that particular tree branch. If a particular tree branch from the original data appears at a high frequency in the pseudo-data matrix analyses, then we can be confident that even with random data "massaging", the original branches are robust. For this analysis, 25 pseudo-matrices were generated from the original data matrix and each of them subjected to cladistic analysis (using default settings in PAUP*4.0) wherein a maximum of 500,000 equally parsimonious trees were retained. The Rapa Nui-Hiva Oa branch has a bootstrap value of 55 percent and typically researchers only consider values above 50 to indicate a robust relationship between taxa, although this is debated (Kitching *et al*. 1998). The other branches in the tree do not have similar bootstrap support. Bootstrap analysis could not be performed on the 25 taxa tree (see Fig. 4) due to limited computing power.

* * *

Clear phylogenetic patterns among ritual architecture taxa, and the branching cladistic trees that may represent them (e.g., Fig. 2), would be produced if sets of character states were differentially distributed through time and across space, with some character states appearing in more than one set and thus usefully conceptualised in ancestor-descendant relationships. However, cladistic analysis of 198 pieces of Polynesian ritual architecture—*heiau*, *marae*, *ahu-moai* (Rapa Nui statues and platforms) and the like—shows almost no clear phylogenetic patterns or specific lineages of cultural transmission, save for the greater phylogenetic similarity shared by some architectural taxa from Rapa Nui and the Marquesas Islands that display anthropomorphic images. Such a lack of clear phylogenetic pattern might be the result of at least three processes: (i) high cultural trait innovation rates (Nunn *et al*. 2010) resulting in many observed character states, (ii) very high levels of horizontal trait transmission (Greenhill *et al*. 2009) or a great amount of cultural sharing between populations and (iii) taxa definitions that do not generate variation associated with phylogenetic relationships when analysed with cladistics.

While not an explanatory process *per se*, it is possible that the ritual architecture classification does not adequately generate variation that can be readily depicted in a cladistic tree of bifurcating branches. The classes or taxa do appear to exhibit the necessary qualities for an analysis of phylogenetic similarity (see above), but their usefulness might be limited by the presence-absence nature of the character states. Multi-state characters, those with more than two states, would likely produce classes that encompass more variation, but such classes might have fewer members as a consequence and therefore be more limited in their spatial and temporal distributions.

Classification issues aside, a great amount of cultural sharing across East Polynesia would have been facilitated by the rapid initial colonisation of the region (see Wilmshurst *et al.* 2011) and continued interaction between archipelagos for some time after colonisation as evidenced by the distribution of non-local artefacts (Allen 1996, McAlister *et al.* 2013, Rolett 2002, Weisler and Kirch 1996). A high level of cultural sharing or horizontal trait transmission is also suggested by other research. Rogers and colleagues (2009) examined the phylogenetic relationships of ethnographically described canoes across Polynesia using cladistics and other techniques. They created three cladistic trees, one based on stylistic characters, one based on functional characters and a third tree that combined the two. The CI and RI for these trees ranged from 0.42 to 0.66 and 0.33 to 0.5 respectively, similar to the CIs and RIs obtained here (they did not conduct cladistic bootstrap analyses). Rogers and colleagues (2009: 3840) conclude that their "cultural data do not simply reflect a pattern of vertical (i.e., intra-group) trait transmission with sequential bifurcation over time", but that processes such as cultural transmission between different island populations may explain the data. Similarly, Larsen (2011; see also Tolstoy 2008) conducted cladistic analyses of Polynesian barkcloth manufacturing and the trees she generated also do not have very strong support for some of the branching patterns they contain. Her dataset includes barkcloth techniques from the Cook, Society, Austral, Marquesas, and Hawaiian Islands along with Mangareva, Rapa Nui, and a set of West Polynesian islands. In the two trees she generates there are only two East Polynesian branches with greater than 50 percent bootstrap support. The branch or clade containing the Cooks, Society and Austral Islands is supported by a 64 percent bootstrap value and within this the Cooks-Society branch has a 75 percent bootstrap value. Combined with the CI and RI of these trees, 0.48 and 0.54 respectively, her results also suggest cultural sharing or horizontal trait transmission within, but not between, the West Polynesian and East Polynesian regions. Considering quantitative phylogenetic analyses of East Polynesian material culture, there are only these few studies of canoes, barkcloth and the architecture to date, but each has suggested that there was

frequent cultural sharing across islands and archipelagos, at least frequent enough that standard cladistic analysis does not produce statistically robust branches or clades. Other researchers examining different data sets and using a variety of techniques have also identified relatively high levels of interaction between East Polynesian populations, followed by a substantial decline in interaction. Possible explanations for changes in interaction frequency include local socio-political conflict (Rolett 1998), climate change (Bridgman 1983) and resource depression (Weisler 2004). We might expect the most powerful explanations will be those that employ processes relevant to multiple, different data sets and are linked to empirical observations. Processes from population ecology and cultural transmission models (e.g., Shennan *et al*. in press, Steele 2009) are promising starting points.

In addition to high levels of cultural transmission, the cladistic analyses might also indicate that Polynesian ritual architecture was a realm of material culture with high levels of trait innovation. Nunn *et al*. (2010) have demonstrated through simulations that increases in the rate of trait innovation can increase homoplasy (independent invention, see above) in a dataset, possibly resulting in cladistic trees with many unresolved relationships (i.e., Figs 4 and 5). High levels of innovation in ritual architecture are suggested by the early construction of the rather unique *ahu-moai* (Fig. 6) possibly very soon after the colonisation of Rapa Nui (Hunt 2007), and the rapid

Figure 6. Ahu Naunau, Rapa Nui. Photo by Thegn Ladefoged.

change of *marae* forms in the Society Islands, although this pertains mostly to architecture built several hundred years after colonisation (Kahn 2010, Sharp *et al*. 2010). To better assess the possibility of high innovation in ritual architecture, additional classifications using multi-state characters (i.e., not presence-absence) should be created and the character-state distributions examined. What processes might explain high levels of trait innovation in ritual architecture? From the perspective employed here, innovation is a function of population size and the connectedness between populations and environmental and cultural diversity and thus we might begin with concepts that integrate these dimensions of human life (e.g., Fitzhugh 2001, Kandler and Laland 2009, Ormerod 2005).

The only moderately clear phylogenetic relationships occur among two taxa (*ahu-moai* and *me'ae* with images) from Rapa Nui and Hiva Oa in the Marquesas (see Fig. 5). The relationships among the taxa in the Rapa Nui-Hiva Oa clade are unresolved given that no one outgroup seem better than another, although Martinsson-Wallin *et al*.'s (2013) proposal that ritual architecture is first constructed in Rapa Nui might suggest *ahu-moai* taxon 001101 as the best outgroup. Minimally, the cladistic tree here confirms a phylogenetic relationship between some of the Marquesan and Rapa Nui ritual architecture.

Also in the Figure 5 tree is a group of related taxa from the Marquesas and the Society Islands, although this clade does not have strong bootstrap support. The taxa all share raised, paved courtyards without walls, and vary in the presence of interior platforms and uprights. None have anthropomorphic images. Interestingly all the taxa in this clade contain architecture from near Mata'ire'a Hill, Huahine Island and suggest that the clade may result from cultural transmission within the Huahine population and between Huahine and other islands. This clade could be related to new religious practices in the Society Islands, as both Kahn (2010) and Wallin and Solsvik (2010) have noted that the spread of the 'Oro cult from the Leeward Islands (including Huahine) to the Windward Islands (including Mo'orea, also present in this clade) was associated with a new *marae* architecture that would likely fit within some of the taxa definitions in this clade.

These hypotheses concerning innovation and interaction in the realm of ritual architecture and the origins and spread of architectural taxa must be considered in light of classification issues and the assemblage of ritual architecture analysed here. Other taxa definitions using different characters and character states will produce different cladistic trees. However, the taxa arranged in the cladistic trees in Figures 4 and 5 are defined by character states that are both widely recognised to vary among ritual architecture and can be applied to architecture from across Polynesia, two requirements for regional analysis. A previous analysis (Cochrane 2009), which omitted the Tuomotua

data, but using the same or similar characters presented here, generated multiple cladistic trees from different taxa definitions and also concluded that similarities in Polynesian ritual architecture are most likely explained as a product of high levels of horizontal trait transmission or interaction, a finding similar to other quantitative cultural phylogenetic research in Polynesia and stone tool geochemical studies (Collerson and Weisler 2007, McAlister *et al*. 2013). Future research investigating cultural transmission and the similarities and differences of Polynesian ritual architecture should seek to develop architecture classifications to produce better resolved cladistic trees (i.e., trees with a greater number of bifurcations) as well as incorporate additional quantitative methods to explore phylogenetic relationships.

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ABSTRACT

Ritual architecture across Polynesia displays similarities that are evidence of populations' shared ancestry and interaction. Examination of ritual architecture traits—the design of courtyards, the use of uprights and sacrificial pits, the placement of walls and altars—has, for well over a century, contributed to hypotheses concerning the relatedness of different Polynesian groups and the transmission of ritual behaviours across islands and archipelagos. The research presented here follows this tradition

and considers these traits from a quantitative phylogenetic perspective designed to generate hypotheses about the cultural relatedness of ritual architecture classes. Cladistics, a technique specifically designed to arrange classes into hierarchical patterns of relatedness, is presented and then used to construct cultural phylogenies of 198 pieces of ritual architecture from across East Polynesia. The cladistic analyses produce only very limited support for specific phylogenetic relationships between island and archipelago populations and instead suggest Polynesian ritual architectural variation is a product of both extensive horizontal cultural transmission or sharing and high levels of architectural trait innovation.

Keywords: Polynesia, ritual architecture, phylogeny, cultural transmission, Rapa Nui, Marquesas Islands, Society Islands

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THE NGĀRUAWĀHIA TŪRANGAWAEWAE REGATTA: TODAY'S REFLECTIONS ON THE PAST

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Ko Taupiri, ko Onepoto, ko Te Puke o Tahinga ngā maunga, ko Waikato te awa, ko Tainui te waka, ko Waikato te iwi, ko Pōtatau te tangata. Ko Ngāti Amaru, ko Ngāti Tipa, ko Ngāti Tahinga ngā hapū, ko Te Awamarahi, ko Te Kotahitanga, ko Oraeroa, ko Weraroa ngā marae. Nō Te Puaha o Waikato ahau.

My *whakapapa* 'genealogy' ties to the Taupiri, Onepoto and Te Puke o Tahinga mountains, the Waikato River, the Tainui Canoe, the Waikato Tribe and the esteemed Chief Pōtatau. I belong to the subtribes of Ngāti Amaru, Ngāti Tipa and Ngāti Tahinga and my *marae* 'Māori communal complexes' are Te Awamarahi, Te Kotahitanga, Oraeroa and Weraroa.

The township of Ngāruawāhia lies at the confluence of the Waikato and Waipa Rivers and is home to the Ngāruawāhia Tūrangawaewae Regatta. First held in 1896, this is one of the country's oldest regattas, second only to the Auckland Regatta of the 1870s. Although initially a social event centred on water sports, it has come to be closely associated with the Māori King Movement or Kīngitanga. This political movement, dating from 1858, was initially aimed at giving Māori tribes leverage in their dealings with the British Monarchy: today it is more broadly associated with Maori aspirations for social, political, cultural and economic self-determination, including the Regatta described herein. Here I trace the history of the Ngāruawāhia Tūrangawaewae Regatta, from its inception to the present day, focussing on how it has promoted *kotahitanga* 'embracing togetherness' within Ngāruawāhia and the Waikato Region and more generally across Aotearoa/New Zealand. A change in the Regatta's venue, from The Point, a community park at the confluence of the Waikato and Waipa Rivers, to Tūrangawaewae Marae, is identified as pivotal with respect to the event's social and cultural meanings.

The exact beginning of the Ngāruawāhia Tūrangawaewae Regatta was on St Patrick's Day, 17 March 1896, in honour of the patron saint of Ireland. This date was deliberately chosen at the suggestion of one of the first engineers of Irish descent in Ngāruawāhia, who was credited with building the first railway bridge in 1876, or so "Ben"[1] told me. The day would come to be viewed as a social event for all workers and would continue to be held on 17 March or the weekend closest to it. Some knowledgeable people from Tūrangawaewae Marae said that the Mayor initially requested or invited the Māori community to join in the Regatta, and it has come to capture the

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unique links between Ngāruawāhia Māori and Pākehā, also symbolised by the convergence of the Waipa and the Waikato Rivers and even the name now given to the celebration itself. Resident Glenda Raumati (pers. comm, 2013) explained the name's history as follows:

> Until 1973 it was called the Ngāruawāhia Regatta and then was renamed the Tūrangawaewae Regatta. In honour of its 100th centennial in 1996, it was called the Ngāruawāhia Tūrangawaewae Māori Aquatic Regatta for that year only, incorporating the two names of importance within that community. The name reverted to its original title, the Ngāruawāhia Regatta, from 1996 until it was changed back to the Tūrangawaewae Regatta in 2012.

I shall simply refer to it as the Regatta. The reason it was first celebrated all those years ago remains clear and unchanged: "to encourage various forms of aquatic sports and Māori activities, with particular emphasis on the preservation of their ancient customs and traditions" (Ngāruawāhia/Tūrangawaewae Centennial Committee 1996: 5).

The Waikato River, my *awa* 'river', is an important presence in my life, and this attachment prompted me to write this article. I was born among my people at the mouth of the Waikato River where it runs out to the Tasman Sea. My family later moved upriver, nearer to the source of the Waikato and about 32 km southwest of Taupo, where the Waikato River flowed at the back of the farm. Yet we returned regularly to our ancestral *marae* for familial and other events, particularly those of my mother's side of the family which was heavily involved in Kīngitanga. This connection brought us to Ngāruawāhia on many occasions. I cannot claim to have ever lived in Ngāruawāhia, yet the town remains a place of special memories and connections for me; my father's late *tuakana* 'elder brother' still had his family home on George Street, now occupied by his son and his family. There we visited and stayed for many Kīngitanga Coronation[2] and Regatta days. I joined Ngāruawāhia sports clubs while teacher-training (an internship) in the area and later briefly taught nearby and became involved in the daily events of the *marae.*[3] Memories, after a decade's absence from the Waikato, drew me back to the riverbanks once again.

I begin this article with my three day experience, recorded in a journal written in 2013, of the 118th Regatta: on Friday the *waka kopapa*[4] or dug-out canoe races for school children, on Saturday the celebration and that night spent with the Te Atiawa delegates in the Pare Waikato *wharenui* 'sleeping house' at Tūrangawaewae Marae and finally, on Sunday, the farewells and big clean-up after the visitors had left. This first section is written as a narrative, drawing on my journal, aimed at capturing the immediacy of what I was experiencing and seeing.

A 2013 REGATTA EXPERIENCE

It had been such a long time since I had attended the Regatta from a Friday start, so I fully intended to be there from the "get go" at 9.00 am and to remain there through to the end of clean-up on the Sunday. I was curious to know whether my cherished Regatta memories from childhood through to adolescence, and as a young teacher, would be confirmed or bettered by a modern 2013 Regatta experience.

School Childrens' Waka Kopapa *Race Day*

The riverbank was already bustling, with school visitors jostling for the best viewing positions and quickly claiming the pre-erected marquees and tarpaulin shelters for the day. The first *waka kopapa* races were scheduled to start at 9.30 am (Fig. 1). The banks were filled with a mix of uniformed children, parents, grandparents, aunts, uncles and teachers, all preparing for the first races and ensuring their teams had registered. The intercom was blaring out the names of those schools yet to check in.

Soaking up this atmosphere, I was amazed at how the Friday event had grown, maybe quadrupled, from the last time I had attended the schools' race day, some 15 years before. At that time, only teenaged secondary school students from the region competed, but on this day I witnessed children of all ages taking part, with most hailing from local schools or schools from the immediately surrounding districts. One teacher pointed out:

> That wee girl has just turned five and this is her third day at school. We didn't have enough junior boys so I asked her if she wanted to paddle. I don't think she has ever been in a *waka kopapa* before but look at her, anyone would think she has been doing this for ages!

The pint-sized paddler certainly handled her *hoe* 'paddle' like an expert, without a care in the world and in unison with the rest of her team as their *waka* raced down river to the finish line. I would have been none the wiser about her novice status had this not been pointed out to me. Never once in the day did I feel anxious for the paddlers' safety or wellbeing as they deftly maneuvered their craft out into the swift flowing current, then back to shore. The support craft on the river also helped keep my anxiety at bay. With six members in a team, easily the most critical role is that of the steerer. The Waikato River has dangerous currents and this stretch is no different, causing even the most experienced adults grief when paddling the much larger *waka taua* 'war canoes' during the Saturday festivities.

The assumption that the local schools would take all the "silverware" (trophies) was quickly put to rest, as the winners of the various heats appeared to have come from several districts. I think it meritorious that Friday's purpose

Figure 1. School teams competing in a *waka kopapa* race. Photo from Tūrangawaewae Regatta Facebook (TRFB) page, March 2013.

is to race all the heats, with the finals being saved for the Saturday, in front of a much bigger audience. Either way, proud *whānau* 'families' were there in support on both days.

Other than the aquatic activity on the river, a carnival, festive and fair-like atmosphere already prevailed. Food stalls selling a variety of hot and cold selections were doing a roaring trade. The usual sugary treats had caught the children's attention, and parents and grandparents could be seen being lead off to particular stalls. The attraction rides were not due to open until later that afternoon so that part of the grounds remained quiet.

As the day ended, I reflected upon what I had observed and one comment held fast in my mind. It was from another former, non-Māori teaching colleague at one of the local area schools, whom I have known for many years:

> I'm so busy with my IT responsibilities at school and for our cluster that I can't even afford to be here. But this is what it's all about, bringing our students to events like these—they need to celebrate who they are, they need to live these types of experiences, enjoy them and know they are good at them. You cannot teach this back in the classroom.

As I reflected on my friend's remarks, I was reminded that teaching and learning comes in many different forms and neither should be restricted to the confines of a classroom. Even though some schools may have access to the sea, the river or estuaries for training purposes, I imagine posing a

pseudo *waka kopapa* race outside of the real thing would be very hard. I am a staunch supporter of giving students a living and breathing experience and, as much as I could go to great lengths to describe it, I do not believe anything can replace being at the Regatta *waka kopapa* races and experiencing them first-hand. As I glanced around, I wondered how many of the paddlers, their teachers and *whānau* from all schools could *whakapapa* 'link genealogically' back to someone that may have participated in these same pursuits over the 118 years the Regatta has been celebrated. I would think this might be the reality for only a selected few. Looking towards the future, however, I would like to think that the numbers will be significantly increased.

Regatta Day

On Saturday, the unbothered attitude to parking from the previous day had well and truly disappeared. I followed the signs to Gate 4 and at 8.45 am parked the car for a gold coin donation. The entrance fee to the *marae* grounds is $5.00, or more if you wanted to make a donation. I noticed guided tours of Tūrangawaewae Marae were available at a small cost, something that was new to me. Immediately, low-toned, rhythmic male chanting caught my attention and I watched as the *waka taua* crews nearby went through their final paddling and timing drills before the first of two ceremonial parades they would make on the river, one at 11 am and the other at 3 pm. I passed four crews in succession, each immersed in their own final preparations, as I headed to the riverbank (Fig. 2).

The air was a pungent mix of delicious aromas that are synonymous with Regatta and a vicarious welcome home banner to me. I visited the market place *te whare roa* 'long house', which offered a variety of food and merchandise, stands with information on health, wellbeing, and education, as

Figure 2. A *waka taua* crew practising their routine before paddling in the first ceremonial parade (March 2013).

well as raffles for *kete* 'woven flax baskets' of all shapes and sizes. There was a variety of goods on sale, from arts and crafts, to clothing and accessories. A must have is a Regatta tee shirt which I duly purchased. There were also demonstrations of *tā moko* 'tattooing', *raranga* 'weaving' and *whakairo* 'carving'. A popular stand saw people dressed in olden day or period clothes being photographed, complete with mock *moko kauae* 'chin tattoos'. The effects were surreal and I wished I had my *mokopuna* 'grandchild' with me so I too could be photographed with him. Living in the south, away from my own *rohe* 'home region', I immersed myself in the important activity of *whakawhanaungatanga* 'relationship maintenance' when, at 11 am, I realised the first *waka taua* had reached the barge. You could feel tension in the air as the anticipation levels of the crowd and *rangatira* 'captain' of each *waka* were elevated. Each wondered whether the *rangatira* had timed his commands to effectively turn his *waka* past the barge, sweep back around, then draw up alongside the latter to salute King Tuheitia and his guests before paddling upstream again. Only once have I witnessed a *waka* partially sinking when it did not make the turn in time but that is another story.

This year's visiting *waka*, *Te Aniwaniwa*, was from a delegation of the Te Atiawa *iwi* 'tribe' from Waiwhetu in Lower Hutt. Having first participated in the Regatta in 2012, the Waikato River currents did not disrupt the paddlers' flow and they completed the honour of being the first crew to salute King Tuheitia and his guests on the dais by the river barge (Fig. 3). This year's dignitaries reflected the long-standing emphasis on local, diplomatic, international and indigenous representation. The party included the local

Figure 3. Another *waka taua*, *Rangatahi*, in salute to King Tuheitia and guests who are seated to the right and out of view (March 2013).

mayor, the official Representative of the U.S. Ambassador to New Zealand and Samoa, and a group of Hawaiian celestial navigators.

The six other *waka* followed in quick succession. The first, *Tangi Te Kiwi*, was the smallest in the fleet and required the paddlers to apply more stength to ensure the *waka* made the turn in time. Next came the two *waka* commissioned by Te Wānanga o Aotearoa. *Tātahiora*, or the King's *waka* as it is more commonly known, is predominantly crewed by paddlers from Waahi Pā in Huntly. This *waka* is the newest in the fleet and was commissioned to commemorate the 150-year celebrations of the Kīngitanga from 1858 to 2008. The *Waikura* came after that, crewed by Ngāti Mahanga of Waikato. Three other *waka*, *Rangatahi*, *Taheretikitiki* (Fig. 4) and *Tumanako*, the "old guard" of Regatta Day, closed out the parade. As with the opening pass, *Te Aniwaniwa* was also afforded the closing salute and was greeted by a rousing impromptu *haka* from the six other crews as they made their way back to shore (Fig. 5). As a gesture of reciprocal respect, the *Te Aniwaniwa* crew also responded in kind with a *haka* once they alighted.

The aquatics programme scheduled for Regatta Day was held in the stretch of water before the main arena. In addition to the two *waka taua* ceremonial parades, the schools' *waka kopapa* finals were scheduled intermittently, along with the adult OC1 *waka* (outrigger canoes for one person with single *ama* or outrigger floats) 10-km dash downstream to Taupiri and back (Fig. 6).

As with the previous day, all manner of food items were available for purchase, however, the firm favourites remained the *hāngi* 'earth-oven cuisine' and mussel fritters, both of which quickly sold out. Seafood cooked in any style was soon sold out as well. For the numerous children present, carnival foods were popular choices, as were ice creams, cold drinks and fruit on this sunny day.

Figure 4. *Taheretikitiki* heads upstream and back to the shore after the closing ceremonial parade at Regatta (March 2013).

Figure 5. The six *waka taua* crew perform an impromptu *haka* in acknowledgement of the *Te Aniwaniwa* crew (March 2013).

Figure 6. The adult single *waka* race (OCI) competitors line up ready to get underway to Taupiri and back (March 2013).

Sideshows and carnival rides also have been long-standing and popular features of the Regatta (Figs 7 and 8); I recall seeing them at each Regatta I have attended. Judging by the length of the waiting lines for tickets this year, it seemed the attraction of carnival rides and sideshows has not diminished—they were as busy as ever. I watched interactions between Māori and non-Māori, Māori and other indigenous peoples of the world, my Waikato people (mostly working the stalls) and other *iwi*, and New Zealanders and internationals visitors. It was not hard to distinguish local organisations whose national bodies had come to support their information stands or presence at the Regatta either. Even when I included Friday in the mix, there was a recurrent, underlying theme evident; students, schools, parents, *whānau* and spectators were all united for the one purpose of competing in the different events, partaking in the activities available or simply spectating at the 2013 Regatta.

Figure 7. Queuing at a sideshow ride (March 2013).

Figure 8. The ever-popular Hurricane ride for older children (March 2013).

Figure 9. One of the three *kapa haka* troupes entertaining the crowd (March 2013).

Figure 10. The last of the three bands that entertained the crowd, with the *kaumātua* 'male elder' offering the day's closing prayer. Photo from TRFB page, March 2013.

The main stage was a barge (Fig. 9), used in much in the same way as when the Regatta was held at The Point. It was anchored at the northern end of the riverbank, the main arena, next to the reserved seating for King Tuheitia and the invited dignitaries. This was also the Master of Ceremonies station. The entertainment this year featured the three Waikato-Tainui *kapa haka* 'performing arts' groups which represented the region at the National Te Matatini o Te Rā *kapa haka* 'Māori performing arts' competitions held in February at Rotorua. Three bands rounded off the day, with the closing *karakia* 'prayer' held at approximately 6 pm (Fig. 10), some nine hours after the opening *karakia* was offered at 9 am.

The Wharenui, Pare Waikato

An important aspect of the Regatta in previous times for many Māori visitors was the opportunity to gather and sleep in the community's *wharenui* or meeting house. It has been many years since I have had occasion to sleep at Tūrangawaewae Marae. *Whanaunga* 'relatives' from my mother's *marae*, Te Awamarahi, had been rostered to cater and care for the Te Atiawa delegation upon their arrival on the Friday morning. Given my close friendship with some of the Te Atiawa visitors, I chose to stay overnight on Saturday, to *whakawhanaunga* 'renew relationships' with them and help with the evening meal, and the breakfast preparations and to clean up the next morning. This also allowed me the opportunity to reconnect with my relatives from Te Awamarahi. The modern kitchen facilities in the *wharekai* 'kitchen and dining hall' were a pleasure to have on hand but unnecessary, as we did not have to prepare any meals from scratch but were merely reheating meals that were

previously prepared. All that was required was a quick trip in the van about 40 m away to collect the meals from Kimiora, the main kitchen and dining house. Obviously, another crew was responsible for cooking all meals. This highlights the precision and faultless clockwork with which Tūrangawaewae Marae operates, as a principal *marae* of the Kīngitanga, and the pride and care taken in extending hospitality to visitors. After breakfast, in accordance with *tikanga* 'custom', a *kaumātua* 'male elder' arrived to formally farewell Te Atiawa. These formalities concluded with votes of thanks followed by *hongi* 'the pressing of noses in greeting and fare-welling people',[5] then hugs and kisses between the departing visitors and the hosts.

Our attention then turned to the clean-up. As we breakfasted, other cleaners, arriving to take care of their assigned areas of responsibilities, joined us. I was amazed by the diversity of jobs that needed to be completed. Most of these folk were local and middle-aged to elderly, and they spoke of how it would take them the rest of the week to complete the tasks on their rosters. Two uncles deliberated over which parts of the adornments from the *waka taua* they should start with, both agreeing they should dry the *puhi-ariki* 'upper feather streamers from the stern piece of the *waka*' before tackling the *puhimoana-ariki* 'feather streamers' from the *taurapa* 'sternposts'—steps to insure the *waka* parts would be safe until the next Regatta or their next outing.

KO NGĀRUAWĀHIA TŌKU TŪRANGAWAEWAE: CONTEXTUALISING INFORMATION

Drawing on several fulsome accounts of the Waikato Land Wars and the Kīngitanga Movement (e.g., Belich 1996, King 2003a, 2003b, McCan 2001, Rice 1992, Turongo House 2000, Ward 1973), this section provides some contextual information for my discussion of the Regatta event.

In the 19th century, the Waikato *iwi* and their allies endured three major battles within a nine-month period resulting in much loss of life: the first at Rangiriri in November 1863, the second at Rangiaowhia in February 1864 and, finally, at Ōrākau in March and April 1864. Earlier, both the original King Pōtatau (also known as Te Wherowhero) and his son, King Tawhiao[4] who succeeded him, resided in Ngāruawāhia. "Their 'original pā' [traditional village]… was known as Pikiarero… [and] the location was at 'The Point', where the Waikato and Waipa rivers join" (Muru-Lanning 2010: 46). They considered this place their home and the capital of the Kīngitanga. Here, Tawhiao felt secure. In 1863 that all changed with the Land Wars and the ensuing Crown confiscation of over 1,000,000 acres of fertile land. King Tawhiao and his Waikato people were driven out by this invasion and exiled to the forests of Te Rohe Pōtae, or the King Country (King 1984: 13) (Fig. 11), where they steadfastly refused to bear arms against the Government's soldiers. The words of his father King Pōtatau before his death had foretold what had

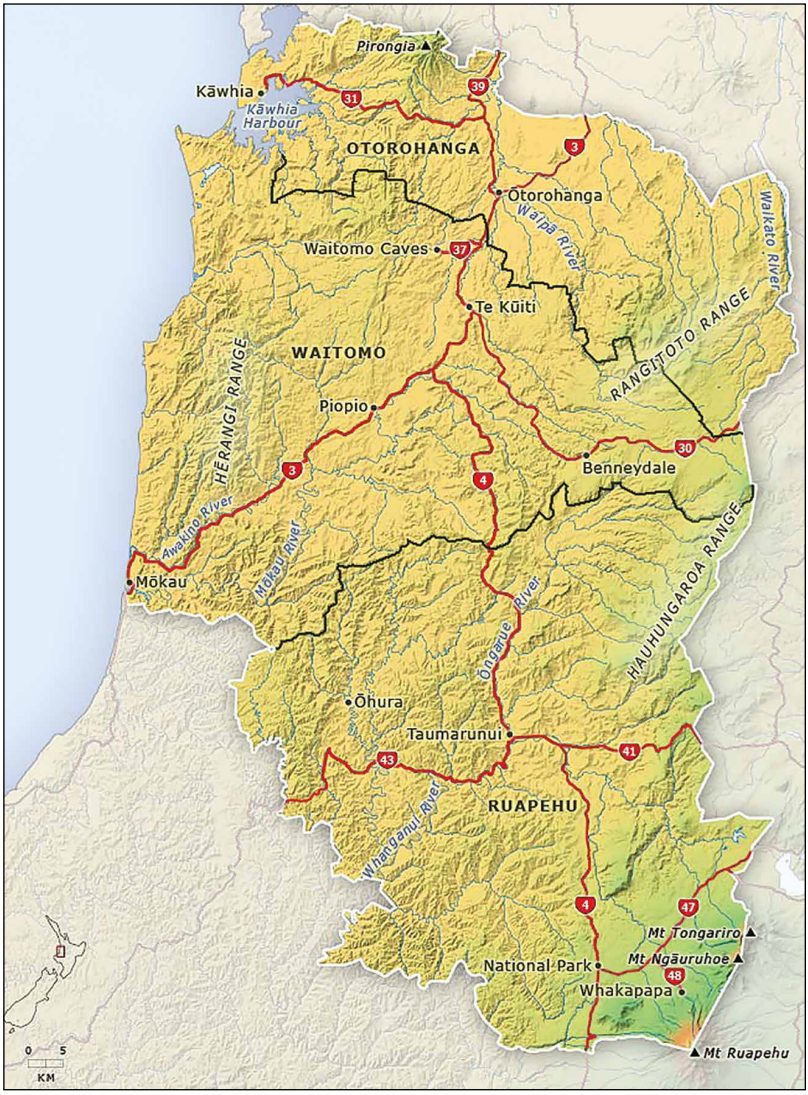


Figure 11. Map showing the King Country region where King Tawhiao sought refuge. (Image from http://www.teara.govt.nz/en/interactive/34819/king-country-region-map.)

come to pass for King Tawhiao: "Should war come upon this land, holdfast to the Nehenehenui…" (Turongo House 2000: 42). Te Nehenehenui was a name for the King Country, which became a place of refuge for Tawhiao and his followers.

King Tawhiao died in 1894, two years before the first official Regatta was held. Though he returned from voluntary exile in the King Country in 1881, he did not live again at Ngāruawāhia. When he and his followers visited the township, they found it had become a town with Pākehā owning the land and buildings; it was very different from the place he knew intimately as his former home. Lamenting his memories and weeping over his father's grave he uttered the second of two key *tongi* 'prophetic sayings' of that period, predicting his people's return in the future to the Ngāruawāhia he loved:

> *Ko Arekahānara tōku haona kaha,*
> *Ko Kemureti tōku oko horoi,*
> *Ko Ngāruawāhia tōku tūrangawaewae.*
>
> Alexandra will be a symbol of my strength of character,
> Cambridge a washbowl of my sorrow,
> And Ngāruawāhia my tūrangawaewae. (King 1984: 16, 2003b: 104)[6]

Alexandra is a former name for Pirongia and is situated 40 kms southwest of Ngāruawāhia. Cambridge is a further 38 km heading east from Pirongia, and 41 kms south of Ngāruawāhia. As I understand it, this saying embodied and reflected the emotions Tawhiao was experiencing at the time. In particular, he referenced these three towns, describing the significance of these places to him. He had not long come out of exile and was visiting all the Pākehā towns that had been built on the confiscated or *raupatu* lands of his Waikato people (Turongo House 2000: 137). As he visited, he reiterated messages of peace to the Government with whom he had reconciled, and was well received by the new residents of each town. Despite their gestures of goodwill towards him, he still did not approve of or accept the Pākehā dominance apparent in those towns.

Several prophecies are attributed to Tawhiao. The first referred to here was uttered after the Rangiriri Battle in November 1863. As Tawhiao passed through Ngāruawāhia, filled with emotions of anger, pain and concern for his *iwi*, he climbed a knoll, Puke i ahua, and as he looked back, vowed: "*E kore tēnei whakaoranga e huri ki tua o aku mokopuna, ka puta ka ora*—This suffering will not survive beyond the days of my grandchildren when we shall reach salvation" (Turongo House 2000: 60). Another translation is: "This phase of salvation shall not pass beyond the days of my grand-child, when we shall be reborn" (King 1984: 16). These words became embodied in the

work and actions of Tawhiao's granddaughter, Princess Te Puea, who indeed created a *tūrangawaewae* (see below) for the grandchildren as prophecised by Tawhiao. She dedicated herself to the purchase of the old dumpsite on River Road and, after moving her people there from Mangatāwhiri in 1921, continued to raise money through the undertaking of various menial jobs to fund the building of Tūrangawaewae Marae at its current and original site. It was a long and arduous struggle with many, seemingly impossible and unimaginable hurdles to overcome, but one that was pursued nonetheless.

The messages were crystal clear and unambiguous from some of the Ngāruawāhia Pākehā town folk of the day. They did not want a Māori community establishing, or re-establishing in this case, on their doorstep. As "Ben" recounted:

> As it was told to my father and passed down in our family, this house we live in here has been in our family since 1939. It used to be owned by a Mr Potter, a former money person of the time. When he got wind that [Princess] Te Puea was looking to buy land on this side of the river, near The Point here, close to where the original *pā* used to be, he convinced her that the current site [River Road] was the best value for money and the best place to be.

This history of struggle against the odds, resulting in triumph and emancipation, provides an unseen but never forgotten historical and political context to the significance of Tūrangawaewae Marae and part of the second prophetic quote by King Tawhiao mentioned earlier: "*Ko Ngāruawāhia tōku tūrangawaewae*; Ngāruawāhia shall be my footstool", alluded to in this section's title. King's biography of Princess Te Puea provides a fuller explanation (2003b: 104-5):

> The expression 'turangawaewae' provides the key to understanding Te Puea's behaviour and her obsession for reciting Tawhiao's sayings. It has rarely been fully explained to non-Maori; it is perhaps difficult to explain. The concept has no precise equivalent in English. It is conventionally translated by the archaic biblical term 'footstool'. More recently it has been conveyed as 'a place to stand'. Literally it means 'a place where one puts one's feet'. But it has connotations of birthright, of ancestral continuity, of a place to which a person really belongs, of roots that are the source of identity and consequently the origin of the right to speak and behave as a Maori. For most older Maori, their turangawaewae is the place where they were born if that place has long-standing Maori significance; or it is the marae with which their family (traced through either parent) has been longest associated. Not having a turangawaewae is, in terms of recent tradition, tantamount to not having Maori credentials, not having the right to speak on the marae.

Dean Mahuta (2010: 26) also referred to this Tawhiao saying, in writing about the establishment of Tūrangawaewae Marae:

> *Ki a au nei, ko ngā kōrero e pā ana ki te whakatūnga o Tūrangawaewae marae, ka tino whakamārama pai i te tikanga e kīia nei ko te 'tūrangawaewae', nā te mea, koia hoki tērā ko te tino pūtake o te marae nei, hei tūrangawaewae mō Waikato, hei tūrangawaewae mō te Kīngitanga, hei tūrangawaewae mō te ao katoa.*
>
> To me, the discussion relating to the construction of Tūrangawaewae Marae distinctly describes the word *tūrangawaewae*, because at its very heart that is what is meant, a place for Waikato to stand, a place for the Kīngitanga to stand, a place for the world to stand. (author's translation)

Dislocation by war and the confiscation of the land did not deter, diminish or undermine the prophecy that Tawhiao's Waikato people would once again return to Ngāruawāhia, and this was accomplished by Te Puea's actions. King's (2003b: 105) commentary further described Tawhiao's reference to Ngāruawāhia as 'hei tūrangawaewae' as follows:

> He [Tawhiao] was referring to Waikato's intimate association with that place, to the fact that his father had been confirmed in the kingship there, and to his own childhood and long residence there…. he was suggesting that the loss of Ngaruawahia symbolised and contained all the connotations of Waikato defeat…. His followers took the saying one step further… that until Ngaruawahia was re-established by Maori occupation, that the loss of mana would not be recovered.

The above quotes illustrate the deep-rooted connection of the Kīngitanga movement to Tūrangawaewae Marae and Ngāruawāhia, and to Te Puea's desire to see her grandfather's prophecy come to fruition.

The memories of that war period, the invasion by the Imperial troops and the subsequent land confiscation have not been extinguished, nor has the significance of these actions and their subsequent impact on the Waikato people lessened. These issues were finally redressed by the Crown some 132 years after the event, when a Deed of Settlement was signed between representatives of the Crown and the Waikato-Tainui Tribe on 22nd May 1995. Five months before this event, on 21st December 1994, a Heads of Agreement document was agreed to, including three key points: a Crown apology for the Waikato land confiscations, a trust fund of $170 million to acquire land, and the transfer of 14,483 hectares of Crown-controlled land back to the Waikato-Tainui Tribe (McCan 2001: 315).

TE AWA O WAIKATO—THE WAIKATO RIVER

The Regatta is staged along the prominent and picturesque Waikato River (Fig. 12). The river has always held significance to Waikato *iwi* and Waikato identity, both inextricably intertwined and bearing the same name. This is evident in many tribal sayings such as: *He piko he taniwha, Waikato taniwha rau* (At every bend in the river is a chief or guardian, Waikato of a hundred chiefs or guardians). It is also the subject of many tribal songs, for example: *Waikato te awa* (Waikato the river). The river runs from one end of the confederation of the Tainui *waka* tribes,[7] traversing the regions of its four *iwi,* as well as other *iwi,* as it flows through the land. Described and venerated as an ancestor to some, as the life force of the tribe to others, and an obvious source of food and sustenance, it was once a renowned bustling highway of trade, commerce and communication between Auckland, Port Waikato and Hamilton, before the tribulations of 1863. Having spiritual significance to yet other users of the river, Muru-Lanning (2010) wrote of the connection between those growing up at Tūrangawaewae Marae and the intimate associations they developed with the river, as illustrated in Hukiterangi Muru's reflections derived from his interview of January 2006:

> The strength of the people is derived from the river. When we were growing up, every time we got sick our father would carry us on his back, throw a blanket over our shoulders and whoever was sick would be taken down there [to the river]…. We would sit there and then my father would karakia [pray], ask for a blessing for us. (Muru-Lanning 2010: 47)

Figure 12. The Point showing the convergence of the Waipa River (left) flowing into the Waikato River (right) at Ngāruawāhia (August 2013). Beyond the bridge (at right) is Tūrangawaewae Marae and the venue for the Regatta since 1973.

Over time the river itself had gradually become a casualty of ill-health owing to pollution, abuse and misuse by its various users. Many protracted and controversial arguments raged over the governance and guardianship rights to the Waikato River culminating in a Deed of Settlement signing between the Crown and Waikato-Tainui in 2009 (see Morgan and Te Aho 2013, Muru-Lanning 2010, Te Aho 2011, 2012). The settlement allowed the tribe more say in the scope of the river's co-management, state of health and care into the future.

With the continued interest and growth in water sports, particularly *waka ama,* this was especially important. For example, one of the Waikato-Tainui tribe's investments is in Te Tira Hoe, a bi-annual hands-on opportunity for tribal members to learn about the *awa.* The journey begins at the source in Taupo, covers 300 kms by road and moves downstream so the contingent can paddle some 125 km along the river in the process, before reaching the river mouth at Port Waikato. Involvement of the *iwi* was also in keeping with the original intent of the Regatta "… to encourage various forms of aquatic sports and Māori activities…" (Ngāruawāhia/Tūrangawaewae Centennial Committee 1996: 5). It is hard to describe the Regatta without mentioning the Waikato River in the same breath, such is its importance and significance to the event, particularly after the venue relocation in 1973 from The Point to Tūrangawaewae Marae.

EARLY REGATTA DAY FEATURES

Waka Taua *and Official Salutes*

The Regatta is the sole New Zealand festival that allows the public an opportunity to view ornately carved *waka taua* (Fig. 13) except on the few occasions when Waikato *waka* have also appeared at Waitangi Day celebrations. The oldest of these *waka*, *Te Winika*, was originally built in 1845 by the Ngāti Tipa and Ngāti Māhanga *hapū* 'sub tribes'. With the threat of war pending in 1863, Major Von Tempsky and his Forest Rangers undertook to prevent *Te Winika* engaging in the war by breaking it into pieces. For 73 years, *Te Winika* lay in a muddy grave near Port Waikato, undisturbed until Princess Te Puea returned it to Tūrangawaewae (King 1984: 52). *Te Winika* was then restored to its previous state of splendour and has enjoyed many more years in the Regatta and other ceremonies of significance. This was the beginning of Princess Te Puea's efforts to revive canoe-building and racing in the 1930s. *Te Winika* was retired after the 1974 Regatta and gifted to the Waikato District Art Museum by the late Māori Queen, Dame Te Atairangikaahu. Two other *waka taua, Rangatahi* and *Tumanako*, both similar in age to *Te Winika*, also have a long association with the Regatta. Younger paddlers generally crew *Rangatahi* (the name means 'youth or the younger generation') and are drawn from Ngāti

Figure 13. Ornately carved *waka taua* moored on the bank of the Waikato River. Photo from TRFB page, March 2013.

Koroki Kahukura. Hoturoa Barclay-Kerr (pers. comm, 2014) recollected that over the last 30 years different *hapū* on the river have been allocated to a *waka*. For instance, he explained that *Tumanako* paddlers are drawn from Tūrangawaewae and the Ngāruawāhia area. The *waka Taheretikitiki*, carved by the late Tūrangawaewae master carver Piri Poutapu, was launched in 1973. He added that *Taheretikitiki,* which is considerably younger than the other three, is predominantly crewed by paddlers from Māngere, Manukau, Papakura and Whātāpaka. This *waka* is the second to carry the *Taheretikitiki* name after the first one, built in approximately 1820 at Kaipara, was later gifted to King Tawhiao by Pāora Tūhaere of Ngāti Whātua (Ngāruawāhia/ Tūrangawaewae Centennial Committee 1996: 12).

The *waka taua* salutes easily command the most interest from the spectators on Regatta Day. This involves 20 to 30 warriors keeping perfect rhythm as they manoeuvre these remarkable vessels downstream where they make a turn. They then paddle upstream past the dignitary stage (today a barge) and salute the guests of the day, before returning to shore.

Competitions

During early Regatta a variety of fiercely-contested competitions were held throughout the day and most were for monetary prizes. In those early years, the aquatic component was made up of *waka kopapa* 'canoe hurdling' and *kawhāki tamāhine* 'chase for a bride', along with rowing and speed boat races. There were also mounted swimming races, requiring riders to be mounted on their horse at the start and finish of the race (Fig 14).

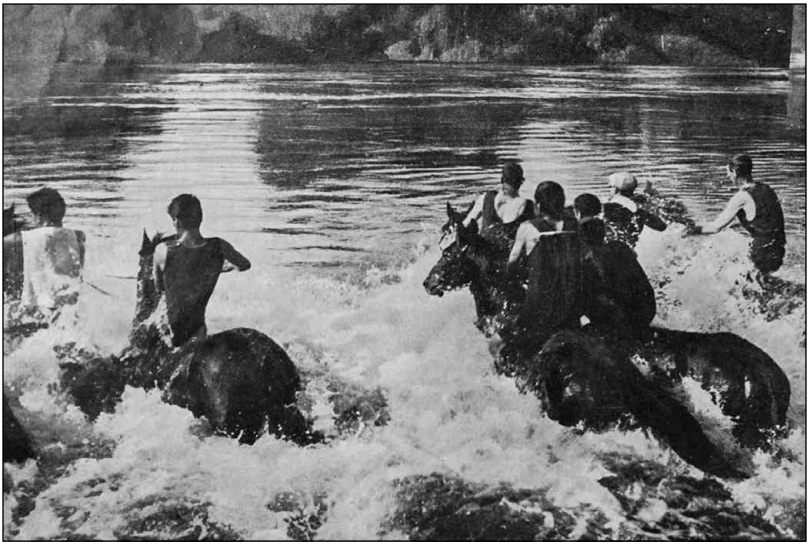


Figure 14. The start of the mounted swimming race at the Ngāruawāhia Regatta. (http://www.aucklandcity.govt.nz/dbtw-wpd/HeritageImages/Images/AWNf/AWN_19100331_p006_i002_b.jpg)

The favourite competitive event was canoe hurdling (Figs 15 and 16). This race required two competitors in one canoe to negotiate a series of hurdles with cross-bars placed a foot or so above the water level. Upon approaching the hurdle, one person would continue paddling furiously, while the other moved along the canoe to ensure they could cross over the hurdle safely, without the canoe slipping backwards or the nose diving forward and the *waka* being swamped, or worse, sunk. The spectators delighted in watching the two-man crew either furiously paddling or frantically bailing out water. Canoe hurdling races were held for both men and women.

The other unusual event, 'chase for a bride', involved a Māori maiden or bride setting off in a *waka* only to be pursued by crews of six males in their own *waka*. The first crew to reach and hold the bride's *waka* were deemed to have captured her, and she would then board her captor's *waka*. The first to cross the finish line with the bride on board were announced the winners and awarded the prize. At any stage before crossing the line, the bride could be captured by any of the pursuing *waka* and could change *waka* any number of times before the end of the race. This race commemorates a true story

Figure 15. A Māori canoe hurdling race at Ngāruawāhia (http://www.gutenberg.org/files/41716/41716-h/images/illo_274b.jpg).

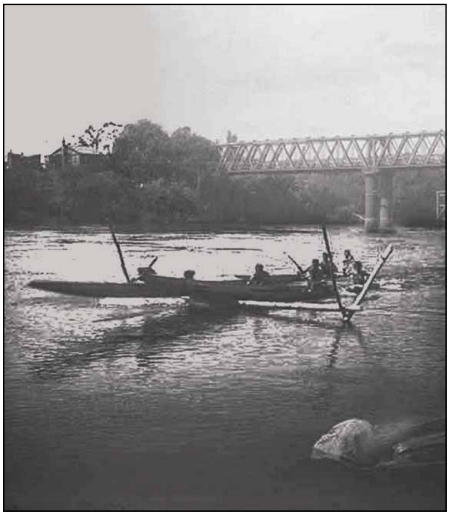


Figure 16. A *waka* taking part in hurdling races at the Ngāruawāhia Regatta on the Waikato River, and the railway bridge at right rear (Sir George Grey Special Collections, Auckland Libraries, 4-8595).

but one with a more gruesome outcome for the well intentioned suitor of the original bride (Latta 1980: 281).

From early advertising posters it was evident that the events were clearly split and classified as either rowing events or Māori events, incorporating a mix of both aquatic and land based activities. The land based events often became part of the national calendar of events for those sports or competitions, such as Highland dancing, which was added to the Regatta repertoire in 1914. Marching girls and piping competitions were also on offer. A special barge, often provided by Mr Roose (Ngāruawāhia/Tūrangawaewae Centennial Committee 1996: 9), was anchored offshore from the main public area at The Point especially for the two Māori land based events: competitive Māori *poi* dance, in which a light ball on a string was swung or twirled in time to song or music, and the *haka* 'posture based dance' (Fig. 17). *Iwi* travelled to Ngāruawāhia primarily to participate in these popular, well contested events.

In 1961, two additional land based competitions, wood-chopping and sawing, were introduced and proved to be very popular. Another big drawcard in those early years was Wirth's "internationally famous circus and zoo from Australia" (Latta 1980: 277), the likes of which had never been seen before on that scale in New Zealand. The animals are no longer around but there remains the continuing appeal of the carnival rides and sideshows, which have remained a prominent part of Regatta over the years.

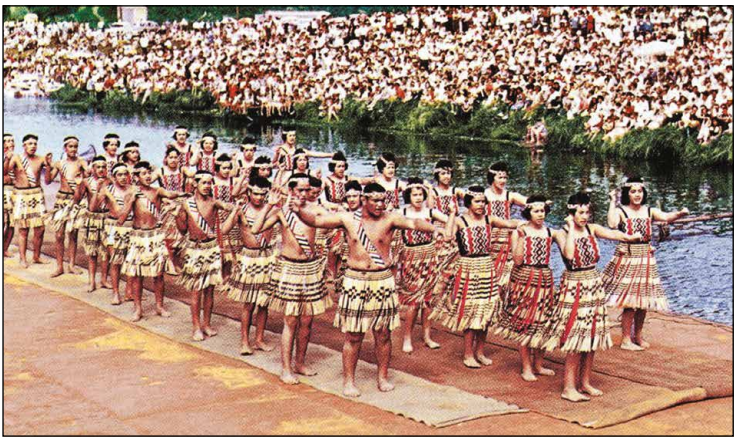


Figure 17. Performers on the barge at The Point during the Ngāruawāhia Regatta, 1965 (http://www.davidcade.net/images/PortraitPics/Ngaruawahia_Royal_Regatta_1965.jpg).

Distinguished Guests

Through the years prominent dignitaries have graced Regatta Days with their presence, and their numbers have extended beyond the paramount *whānau* 'immediate family' of the Kīngitanga and local council members and politicians to other *iwi* delegates from across the country, as well as international visitors. The practice stretches back to the origins of the first Regatta itself. According to "Ben", "In 1896 the Governor held the prime viewing spot of the day from the Squash Court balcony." In 1944, the Minister of Native Affairs and high ranking officers of the United States Army were the guests of honour (*Evening Post*, 27 March 1944: 6) as was the Governor-General, in 1963. In 1983 Prince Edward from Great Britain was a significant international guest. According to *kuia* 'female elder' Rena Ngataki (pers. comm, 2013), in former times many dignitaries requested an invitation to attend the day if one was not already forthcoming. On rare occasions members of aristocratic families from Tonga, Samoa, Hawai'i or other islands, as well as other indigenous leaders, attended the Regatta, but usually they planned their visits for the week-long Coronation celebrations of the reigning Kīngitanga monarch in August.

Some of the more interesting invitations to the Regatta were not to individuals but to groups such as bands. Locally, the Ngāruawāhia Pipe Band was formed after the Second World War and would often play at Princess Te Puea's request. American Marine bands, along with other military bands, are recorded as being in attendance over the years. During early Regatta, the bands played at the rotunda at The Point. The rotunda still stands in the same place today (Fig. 18). There is reason to believe that the distinguished guests are an intrinsic part of the Regatta; one is always nominated to receive the salute from the *waka taua* during the ceremonial passes. Also, on many occasions the current mayor of Ngāruawāhia is jointly extended this courtesy—another embodiment of *kotahitanga* at a local level.

Regatta Locations and Hosts

In the early years the Regatta was attended by thousands from nearby settlements and neighbouring towns, and even from further afield (Ngāruawāhia/Tūrangawaewae Centennial Committee 1996). Organised from the outset by the NRA, it attracted worldwide attention and was a notable event. In the early days, the Regatta was held at The Point where the Waipa joins the Waikato River, slightly to the northwest of the town (Fig. 19). Surplus funds raised from previous Regatta Days purchased the land at The Point, making this into a public reserve (Latta 1963: 47). As a place already renowned for its bustling river trade, The Point was a logical, even strategic, location to host such a prestigious event. It was also close to the old Ngāruawāhia

railway station, an important factor when the main mode of travel to Regatta was by steam train. Extra trains were put on for the day to accommodate all who wished to attend. Many of the travellers did not enjoy the comforts of plush seats for the ride, but travelled in what were known as "cattle trucks":

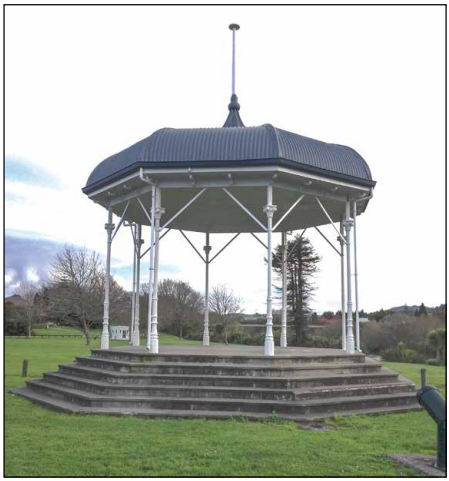
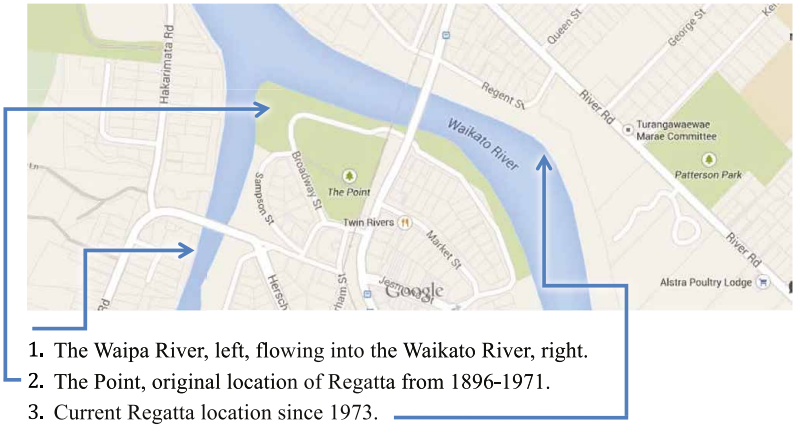


Figure 18. The band rotunda at The Point (August 2013).



1. The Waipa River, left, flowing into the Waikato River, right.
2. The Point, original location of Regatta from 1896-1971.
3. Current Regatta location since 1973.

Figure 19. Map of past and current Regatta locations.

> These were long low freight waggons covered with railway tarpaulins, and seats back to back across and along the waggon. As the train moved at speed, 30 miles an hour if you please, the tarps flapped, smoke from the engine penetrated through to the passengers who were soon grimy and dirty but little the worse for their drafty ride. (Latta 1980: 277)

The Regatta was cancelled for the first time in its history in 1942, owing to the serious war conditions (Latta 1963: 47), and as the community focussed on the important business of rallying support for New Zealand soldiers overseas (Latta 1980: 284; Ngāruawāhia/Tūrangawaewae Centennial Committee 1996: 4). On two further occasions, in the early 1940s, the Regatta was held at Tūrangawaewae Marae. On the second of these occasions, in 1945, it was hosted by King Koroki, the fifth Māori king, and Princess Te Puea to raise funds to build the Aotearoa meeting house. Some people remember that, for a time, two Regatta were held a week apart: One *kuia* 'female elder' commented "It was like a mini Regatta run by Te Puea over at the *marae*, then the big Regatta would be at The Point the following week". This was also referred to briefly account in Ngāruawāhia/Tūrangawaewae Centennial Committee (1996: 20) but scant detail is recorded. In 1972 the Regatta was cancelled because the river was in flood (Ngāruawāhia/Tūrangawaewae Centennial Committee 1996: 4) and caused the town to lose interest. In fact, the financial adversity suffered from cancelling the 1972 event meant that the NRA could no longer afford the financial risk of hosting it (Latta 1980: 283-84).

From 1973 the Regatta remained at Tūrangawaewae Marae permanently and the Kimiora Fundraising Appeal Committee from the Marae took over organisation of the day. This would also signal the formal involvement of the Kīngitanga in the organisation of the Regatta up to the present.

The NRA, established in 1896, had successfully run the Regatta nearly continuously for 73 years. Revenue from the event also supported local initiatives such as the purchase of The Point. In 1944, it was the establishment of a Māori Health Clinic at Ngāruawāhia and, as noted earlier, building of Aotearoa meeting house in 1945. In 1973, Kimiora, the *wharekai* and cultural centre at Tūrangawaewae Marae, was the beneficiary of Regatta Day proceeds. During the early years at The Point, the workers running the Regatta on the day itself were waged, as the Regatta was run as a separate business entity under the NRA. When the responsibility for planning and organising the day shifted to the Marae, the changes in the socio-cultural importance of the event were reflected and embedded in all aspects of the day's operations, along with all roles and responsibilities which became voluntary. This continues right through to the current time with many dedicated people continuing to volunteer their time to ensure the annual Day's success.

KOTAHITANGA: CELEBRATING UNITY, ONENESS AND TOGETHERNESS

Kotahitanga appears as a central notion underpinning the Regatta. The concept of *kotahitanga* has both social and political dimensions deserving of explanations far beyond the scope of this article. Benton *et al.* (2013: 145) have provided one definition of *kotahitanga* as "the state or circumstances of being one", which I translate here as unity, embracing oneness or togetherness. In a Māori worldview, it stresses the ties of relationships binding one person or group to another person or group, whether at *whānau* 'family', *hapū* 'sub tribe' or *iwi* 'tribe' level. Applications of *kotahitanga* can also transcend *whakapapa* 'genealogy' to include other social groupings at community, local, national and international levels.

Before 1863, the make-up of Ngāruawāhia was predominantly Māori and this was the capital of the Kīngitanga. After the Rangiriri Battle of November 1863, the town was taken over by the troops and rebuilt as Queenstown, before being renamed Newcastle in 1870. In 1877 it returned to the name Ngāruawāhia (Swarbrick 2012: 5). Many of the early Pākehā settlers in Ngāruawāhia were descended from or had familial links to the military forces which occupied Ngāruawāhia and had established military redoubts at nearby towns of Hopuhopu and Pukekohe. Land allocations were also made to government soldiers after the Land Wars according to another Māori resident I will call "Koro". The new settlers and their descendants came face to face with their former enemies when King Tawhiao came out of exile in the late 1880s and eventually returned to Ngāruawāhia, and later when Princess Te Puea and others re-established themselves there in the early 1900s.

This brings to mind another of King Pōtatau's sayings to his son King Tawhiao, before his (Pōtatau's) death:

> *Kotahi anō te kohao o te ngira e kuhuna ai te miro mā, te miro pango, te miro whero*.
>
> There is but one eye of the needle, through which go the white, the black and the red threads. (Simpson 1992: 3)

There is another version of the same *whakatauki* 'proverb', with an added passage that is quoted less often:

> *Kotahi te kohao o te ngira e kuhuna ai te miro mā, te miro pango, te miro whero*.
>
> There is only one eye to the needle, through which the white, black and red threads must pass.

> *I muri, kia mau ki te whakapono, kia mau ki te aroha, ki te ture. Hei aha te aha, hei aha te aha*.
>
> After I am gone, hold fast to faith; hold fast to love; hold fast to the law. Nothing else matters now—nothing. (Turongo House 2000: 42)

Every time I see the combination of white, black and red, this saying, which also appears in song and performance as well as the written verse, immediately comes to mind with its call for unity. Thinking about the Regatta, I interpret these words as embodying the mix of people of all nationalities and ethnicities in attendance, enjoying the multitude of festivities the event has to offer. The meaning given in the second version reads, "In other words all are equal in the sight of God" (Turongo House 2001: 197). Another interpretation from "Koro" expressed the same sentiment somewhat differently: "We are all born through a birth canal and enter the world in the same state".

Kotahitanga is reflected in the values of the Regatta, as attendees celebrate and enjoy the unity, the oneness and the togetherness that helps make the event what it is. At the same time the Regatta fosters social and cultural developments within the Ngāruawāhia community as a local, national and, in some respects, an international space with various dignitaries and visitors in attendance. People have not come to the Regatta under duress but have come of their own choosing or have been invited to attend for any number of reasons: to participate in and watch the *waka kopapa* races of their children or grandchildren, to eat together, to watch *kapa haka* group performances, to watch the spectacular *waka taua* parade, and/or to listen to the bands. The other important activity undertaken, by physically being at the Regatta, is to *whakawhanaunga* 'build or renew acquaintances or relationships'. The Regatta both exemplifies and underpins the notion of *kotahitanga* purely by bringing together a unique and diverse blend of people from the local community and beyond, to celebrate an event nearing its 120th birthday and to pay respects to the Kīngitanga that has hosted it for over the past 40 years.

This is expressed in commentary from the centennial celebrations booklet where homage is paid to the ancestors and leadership of the day for "creating the links to bring Māori, Pākehā and a nation together". Credit also is given for "fostering a sense of social and cultural pride in the community" (Ngāruawāhia/Tūrangawaewae Centennial Committee 1996: 25).

My observations are not an analysis of the breadth and depths of the effect the Regatta has had over the years on the Ngāruawāhia community, but rather reflections on the Regatta as a way to test the state of relationships within the community.

To test assumptions I held, I sought out the views of some non-Māori Ngāruawāhia townfolk on the Regatta and the relationships between

Māori and Pākehā within the town. Statistics New Zealand (2013) data for Ngāruawāhia has the Māori population at 60.5 percent and the Pākehā (European) population at 53.3 percent, with the total population numbering 5,127 (note: some individuals claimed multiple ethnicity categories). "Barney", a resident since 1952, commented that Ngāruawāhia is a good place to live and is considered by many to be a "Māori town" because of the Kīngitanga. With limited mobility now compared to his earlier years, he no longer attends the Regatta but fondly recalled many positive memories. He remembered being allowed to take photographs on Tūrangawaewae Marae with blessing of "the Lady"—a term of endearment used by many in reference to the late Dame Te Atairangikaahu. When probed for thoughts about the modern Regatta, Barney's response was; "I think it's a bit too dear [expensive] now to go from what I hear and a bit more money driven. It wasn't like that before. Most non-Māori you see at the Regatta now are not from here you know, not from Ngāruawāhia." He was very adamant, however, that Māori and Pākehā relationships in the town are very good.

"Jake" had the privilege of growing up on the outskirts of Ngāruwāhia for 20 years around 1973, when his grandfather purchased a large farm bordering the Waikato River and close to the Regatta venue. Schooled in Hamilton and then Auckland, his family travelled past Tūrangawaewae Marae twice a day:

> I could see all the buses and cars and vehicles outside so I knew something big was happening there, at the *hui* [a meeting], but wasn't quite sure what it was all about and whenever I asked I was told it didn't concern us. Our lives revolved around the farm, our schooling, rowing and the riding school. We bypassed the whole [Regatta] thing.

Pressed about his recollection of Māori and Pākehā relations in the community, he responded that other than rugby (which was a huge thing for his family), the Anglican Church, pony club and riding for the disabled, they did not really mix with the local community. They shopped in the larger city of Hamilton so they had little need to go into the Ngāruawāhia township itself and rarely did. It was not until his brother decided to take a job at the freezing works, that he and his brother made real connections with the community. They got to know their Māori co-workers with whom his brother worked for three summers. He said his brother always describes those times as the best experience of his life. Reflecting upon the late Dame Te Atairangikaahu's death, and having watched the funeral procession on television at his work place, he recounted how many of his colleagues were in awe about it all. They naturally assumed he was very familiar with Māori customs and Tūrangawaewae Marae, and were envious of him, especially as he grew up there. In that instance he lamented a lost opportunity to learn

about another people and culture that was right on his back doorstep. It did foster within him, however, an appreciation for *tikanga* Māori that has had more significance to him in his adult years and current career, and given him a way to satisfy those curiosities long held from his boyhood.

"Ben" has lived his whole life in Ngāruawāhia and his family for nearly 100 years before him. His wife "Peg" also was born in the town and their children still live in the town, as do their grandchildren, all whom are part Māori. In his words: "Ngāruawāhia is a bloody good town and I don't like it when out-of-towners come in here and start running the town down. I mean what would they know about it?" He had been a past representative on the local council. As a result, he knew many of the community leaders on "both sides of the bridge" in person, enabling him to span what is sometimes jokingly referred to as a physical point of segregation in the town. The bridge separates those on the northern side, associated with the *marae*, or the Māori community, from those on the southern or "town" side, which is where most Pākehā live. While "Ben" and "Peg" no longer attend Regatta, they often watch the happenings from the bridge or "this" southern side of the riverbank as their grandchildren are usually participants in the *waka kopapa* races. The others who regularly gather on the southern banks are also locals who have long had the practice of setting up their picnic spots and spectator chairs to enjoy the *waka kopapa* and *waka taua* parades. The spot receives annual lawn mowing by the Council and gives these spectators the freedom to set themselves up and picnic without the fuss and expense of going to the actual Regatta venue itself directly across the river. "Peg" reflected: "Once the Regatta moved permanently to the Marae the numbers went down, interest fell away by the local non-Māori and some local Māori too. That's really when a lot of the non-Māori events stopped too. I guess the economics of the day didn't help either." These comments suggest a waning interest by parts of the Ngāruawāhia community in attending and participating in the Regatta. What, though, was the real underlying cause? Inevitably the change in organisers, along with the shift of location to the Marae, could be attributed to the disappearance of some activities. Events that had been regular features of Regatta for years were gradually withdrawn from the programme. From 1973, the Regatta truly became an annual fixture of Kīngitanga celebrations as Tūrangawaewae Marae became the new host location and organiser of the event, right through to today.

Regattas held at The Point still hold many special memories for "Ben" and "Peg", especially the "free Friday nights for locals" which they attended as teenagers. They remembered the smallest of details of stalls, entertainment and activities, right through to the order of the events on the day. As they rattled off the list of stands that were erected at The Point, I was amazed that

everything fit into the space, along with the thousands of people in attendance in those days. The expressions on their faces were a joy to watch as they relived these former times and as I sat and listened, I too was transported to another time. "Ben", a coxman and oarsman in his time, recounted wistfully how he wished the Regatta was back at The Point again (see Fig. 12), in all its former glory. When asked why the interest had dropped among the locals in attending present-day Regatta he replied, "It's just too pricey now, by the time you pay the entry fee, the rides and then food, it all adds up".

Despite their own reasons for no longer attending Regatta, "Ben" and "Peg" still considered Regatta a great opportunity for Ngāruawāhia youth to share and explore interests in aquatic sports with local, national and even international visitors. This has come to pass with many Tūrangawaewae *rangatahi* 'youth' representing New Zealand in national *waka ama* crews. "It's a focal point for the community, it's brilliant to see that the Regatta is still going on today in some form or shape", was "Ben's" conclusion. Irrespective of which riverbank you view the Regatta from, the *kotahitanga kaupapa* or theme of the Regatta continues to unite people at community, local, national and international levels.

COMPARISONS OF HISTORICAL REGATTA AND THE 2013 EVENT

Seated among the mixed generations at the breakfast table on that Sunday in 2013, I asked my relatives about their Regatta experiences over the years. They mused about many things, how the crowds nowadays, for example, were fewer in number than in previous years. They said attendance varied and were influenced by a number of factors including the weather, the year of celebration, and even knowing which esteemed visitors would be in attendance. "What was the drawcard?" I asked. "Why do people keep coming back?" My relatives gave a variety of answers in response:

- Seeing the skill levels required of the paddlers to turn the *waka taua* in time to make the salute to the visitors and the crowd gathered at the barge and stretched right along the riverbank. That's always a buzz cos you never know if they'll make the turn in time!
- The food, particularly the *hāngi* and the 11 am *waka* parade. We go at 11 am so you are guaranteed a *hāngi*, otherwise you will probably miss out.
- Keeping up our traditions—but if it rains we don't go.
- The *kapa haka* and bands, so you don't have to rush.
- The schools' *waka* races [on the Friday], geez our kids are mean [tough]…and fearless!
- Well cuz [cousin], all I can say is that when we are asked to support the *kaupapa* [the reason for an event—Regatta in this case], we don't question that; we just come and do the *mahi* [work].

I can identify with all six and would add there are many other reasons from a sentimental as well as a traditional point of view. I also heard of others from Tūrangawaewae who choose this as the one event of the year for which they return home from Australia to rekindle their *whakapapa* links. As I wandered among the throngs of people, I asked the same question of acquaintances and some complete strangers. The most common reasons given were: watching the *waka taua* ceremonial parades and eating *hāngi* or other delicacies. While the Regatta can be termed a uniquely Waikato experience, it still holds widespread appeal.

Since the inception of the Regatta, it has essentially been a self-funding, not-for- profit event that has also served as a fundraising mechanism for local projects. The executive committee of the NRA did this successfully for 73 years. This was continued throughout the 1940s by Princess Te Puea, up until her death in 1952. When the location of the Regatta moved to Tūrangawaewae Marae permanently in 1973, this fundraising feature was also retained. Wynae Tukere (pers. com. 2013) told me that should a surplus arise, after taking care of the incurred expenses of running the day, this amount is reinvested into the Tūrangawaewae Marae Committee.

Another significant difference from earlier Regatta run by the NRA would be the financial support provided by the Tūrangawaewae Marae Committee to ensure the day is held. Despite other views shared earlier in this article, entry charges are still kept to a minimum to encourage *whānau* and visitor attendance, as is the newly introduced *marae* tour fee. The discussion does not dwell on whether the Regatta should be held each year, but is detailed about what the programme will feature and whether any past events might be feasible returns to the programme in the future. The idea has also been raised about how the Committee should set about garnering a youth perspective on what the Regatta programme should feature from a cultural, heritage and language perspective in the future.

At earlier Regatta, aquatic activities such as canoe hurdling and chase for a bride races, and the rowing, speedboat and mounted swimming races dominated the day, along with the *waka taua* ceremonial parades. The land based activities were competitive *poi*, *haka* and Highland dancing performances, piping, wood-chopping and sawing competitions, and the carnival sideshows. Today, *waka kopapa, kapa haka*, bands, food, and merchandise stalls, information stands and the *waka taua* ceremonial parades, along with the carnival rides and sideshows are the most popular features.

Advertisements about the Regatta appeared regularly in newspapers during the early years, especially in the lead-up to the day itself. This year's advertisements were also on Radio Tainui airwaves, as well as the Tūrangawaewae Regatta Facebook social networking page. A roving reporter

was taking photographs and uploading them instantaneously to Facebook. Radio Tainui was also broadcasting live from the Regatta where you could hear the emcee informing the crowd of the upcoming events as the day unfolded. *Rangatahi* 'the younger generation' all around me were busy on their cellular telephones with applications such as Instagram and Snapchat, sending "selfies" or images of themselves and friends at the Regatta.

From my observations, only the *waka kopapa* finals and the OC1 *waka* race awarded monetary prizes this year. The *waka taua* ceremonial parades did not involve competition or prizes. The *kapa haka* performances were all *ngahau* 'entertainment', as were the bands, so no prizes were awarded.

* * *

On the 17th March 1896, a common ground was founded at The Point in hosting the inaugural Regatta. It has been built into an event that has endured for 118 years. The Regatta is but one expression of *kotahitanga*, which celebrates and reminds us of the history and the progress made between two groups of people of seemingly differing worldviews within a single community. This is despite the viewing and celebration of this event and its related activities from both sides of the river by different parts of that community.

The Waipa and Waikato Rivers' convergence at The Point is also symbolic of the coming together of these two parts of that community. One side represented the staunch supporters of the Kīngitanga, the other predominantly have familial links to military forces who had not so long ago been on the opposing side of a short but ferocious land war, invasion and subsequent land confiscation. The former group were identified by their Māori *whakapapa* and had long settled and lived at Ngāruawāhia under Kings Pōtatau and Tawhiao before the Land Wars; the latter were of colonial stock and occupied or moved to Ngāruawāhia after the Land Wars, most likely as part of the land allocation scheme for military soldiers. While those who *whakapapa* to the *rohe* 'tribal territory' are still present in the community in good numbers, others within the township may not have the same familial links to the military forces of old, but have still been residents within the town for generations.

Today the Regatta is inextricably associated with Tūrangawaewae Marae and the Kīngitanga. This has been more pronounced since the mid-1940s, and with the permanent venue relocation in 1973, and continues to echo the sentiments of King Tawhiao's well-known *tongi*: *Ko Ngāruawāhia tōku Tūrangawaewae*, 'Ngāruawāhia shall be my footstool.'

Two of Tawhiao's many *tongi* have guided us through this description of the Māori concept of unity and the deep connect to Tūrangawaewae. It is therefore fitting to conclude with another that epitomises *kotahitanga* as

explained by Paraone Gloyne, a Ngāti Raukawa Māori Language Revitalist, in a recent Māori Television broadcast:

> *Ki te kotahi te kākaho, ka whati; ki te kāpuia, e kore e whati.*
>
> If the *kākaho* [a type of swamp reed] grows on its own, it will break; if it grows in a bunch or the stems are large, they will not break. (Mohi 2013)

In reference to people, I take this *tongi* to mean that those who stand alone will not prosper or reap the benefits as much as those who work together or in unison. Similarly, many hands toil in the weeks leading up to the Regatta so the day itself can be enjoyed by the multitude of visitors to Tūrangawaewae Marae and Ngāruawāhia, and for generations to come.

Figure 20. *Tātahiora* at rest on the Waikato River. Commissioned in 2007, it will help carry the Regatta into the 21st century. Photo from TRFB page, March 2013.

HE MIHI MAIOHA

He mihi tēnei ki ōku hoa mahi o mua i au e whakaako tamariki ana i Waikato, i tūwhera mai ō kōrua ngākau ki te whakahua mai i ngā kōrero mō ngā kaihoe nō ō kōrua kura. Nei ka mihi. He mihi hoki ki ōku whanaunga, ki tōku kuia, ki tōku koro me ngā hoa pūmau i kōrero mai i ō koutou whakaaro rangatira e hāngai ana ki te rīkata, i ō koutou mōhiotanga rānei ki ētahi kaupapa o te rīkata, te whakahaere rīkata me ōna whakanikoniko katoa. Ka mutu ka mihi atu ki ngā kainoho Pākehā ake o Ngāruawāhia, nā koutou hoki ētahi kupu i koha mai ki tēnei tuhinga kia tōtika ai te tirohanga atu ki tēnei kaupapa i roto i te hāpori. Tēnā hoki koutou.

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NOTES

1. Here and elsewhere in the text, fictitious names have been given to townspeople and friends, former teaching colleagues and acquaintances who have kindly contributed anecdotal information to this article. These names are denoted by quotation marks.
2. An annual, week-long celebration in August held to commemorate the current monarch's day of crowning and remember the passing of the previous monarchs.
3. Incidentally my daughter would later return to play softball for the Tūrangawaewae club, among her relations as a seven year old, making the weekly commute for a season as we, her parents, had done previously for netball and rugby.
4. The spelling of kopapa and King Tawhiao, without macrons over the initial vowels, is deliberate and follows from consultation with tribal elders. These renderings also are consistent with spellings used on the Waikato-Tainui webpage (see http://www.waikatotainui.com/).
5. Also an expression describing the meeting/union of each participant's ancestors.
6. Another translation of these words is slightly different:
   Alexandra will ever be a symbol of my strength of character;
   Cambridge a symbol of my washbowl of sorrow;
   And Ngāruawāhia my footstool. (Turongo House 2000: 138)
7. The confederation of tribes of the Tainui *waka* consists of Waikato, Ngāti Raukawa, Hauraki and Maniapoto. The Waikato River also traverses the Ngāti Tūwharetoa and Te Arawa regions.

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ABSTRACT

The 118th Ngāruawāhia Tūrangawaewae Regatta was celebrated on the 16th of March 2013. First held on the 17th March 1896, it is the second oldest regatta in New Zealand behind the Auckland Regatta of the 1870s. Renowned for the majestic fleet of ornately carved *waka taua* 'war canoes' on parade, crowds still flock to Ngāruawāhia today to watch the *waka taua* make their annual salute to King Tuheitia, the 7th monarch of the Māori King Movement, and his dignitaries. This narrative details my journal observations of March 2013 from the Waikato River banks, before delving into historical information detailing the advent of the Regatta, the Māori King Movement's historical capital base and relocation, and the significance of these to Regatta. The next section speaks of the Waikato River connection, along with early Regatta features, and the promotion of *kotahitanga* 'embracing togetherness' within the Ngāruawāhia community, the Waikato Region and more generally across Aotearoa/NewZealand. The article concludes with a comparison of early Regatta and that of 2013.

Keywords: Ngāruawāhia Tūrangawaewae Regatta, Māori King Movement, Kīngitanga, *kotahitanga*, *waka taua*, Waikato River, New Zealand History

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TRACING THE RESILIENCE AND REVITALISATION OF HISTORIC TARO PRODUCTION IN WAIPIʻO VALLEY, HAWAIʻI

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Agriculture has always been important for Hawaiian subsistence. During the late prehistoric era the focus was on dryland production of sweet potato (*ʻuala*; *Ipomoea batatas*) in vast leeward field systems and wetland production of taro (*kalo*; *Colocasia esculenta*) in more constrained windward pondfields (*loʻi)*. The infrastructure of both systems formed the basis for production after European contact, with the continuation of traditional agriculture and the eventual incorporation of new crops and ideas of how best to grow them. Commercial taro production continues today, with the revitalisation of pondfields in ancient settings. This revitalisation builds on both traditional notions of taro production and the effects of later introductions, such as rice (*Oryza sativa*).

On the island of Hawaiʻi, Waipiʻo Valley was once a large highly intensified system for taro production (Fig. 1). During the mid-19th to early 20th centuries significant changes occurred (Olszewski 2000: 45). The traditional cultivation of taro in pondfields was being gradually replaced by introduced rice cultivation and later the commercial production of *poi* (a traditional Hawaiian food of boiled and pounded taro mixed with water) industry in the mid-20th century (Cordy 1994: 45, Lebo *et al*. 1999, Olszewski 2000). Today, wetland taro is grown in the valley, with an emphasis on revitalising the production capacity of a once intensively cultivated landscape (Bethel *et al*. 2001: 5, 7, 9, 31; Kubo *et al*. 2006: 6, McGregor 1995, 2007, Melrose and Delparte 2012: 61-62). Kirch (1997: 218) notes that Waipiʻo and other windward valleys are "…relics of once extensive complexes of ditches (*ʻauwai*) and pondfields (*loʻi*) that formed intricate grids across the alluvial bottomlands of most Hawaiian valleys". In this article we characterise the materialisation of a palimpsest landscape and document how Waipiʻo taro production changed during the historic era. We note the importance of pre-European contact wetland taro production, how this was transformed by the introduction of rice and the construction of paddies and how this in turn influenced Waipiʻo Valley's modern agricultural landscape.

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Figure 1. Southeastern oblique perspective of modern-day Waipi'o Valley and a close-up of the lower valley showing taro pondfields. (Photographs courtesy of Melinda Allen).

In the early 1820s, missionaries William Ellis, Asa Thurston and their guide, Makoa, traveled through the valley and documented intensive agriculture in Waipi'o (Ellis 1963, Lebo *et al*. 1999: 4). He noted various crops, including wetland taro, *mai'a*/banana (*Musa* sp.) and *kō* or sugarcane (*Saccharum officinarum* L.) (Cordy 1994: 31, Lebo *et al*. 1999: 5). Taro was being grown in *lo'i*, with complexes often composed of multiple components, including the source (*po'owai)*, the stream (*kahawai*), diversion ditches (*'auwai)* and plots or terraces enclosed by raised banks known as pondfields (*kuāuna*) (Silva 2002, 2004, Kirch 1977: 252-53).

Additional information is available from the time of the Great Māhele, between 1846 and 1855, when legislation creating alienable private property was put in place (Linnekin 1983, 1987). In her analysis of the rich taro lands of Keanae on Maui Linnekin (1983: 173) notes:

> In the Mahele, the king divided the lands of the kingdom among himself, the government and the chiefs. These three parts became known as Crown, Government and *Konohiki* lands…. Most of the small parcels awarded to the common people as tenants were taken from the *Konohiki* lands…. The Land Commission Awards (LCA) or *kuleanas* granted to native tenants were meant to establish the commoners' inalienable rights to the lands…[but] the acreage ultimately awarded to commoners was minuscule compared with the extent of Crown and Government lands….

In Waipi'o Valley, the Great Māhele recorded "a minimum of 1529 fields of which 155 were not awarded to the claimants" (Olszewski 2000: 5). Production in the valley dramatically changed in 1881 with the arrival of rice and the establishment of two mills, marking this as a time when taro was being supplanted by rice as the main crop (see Emerson 1881, Olszewski 2000: 32). However, during the last decade of the 20th century there was a renewed interest in taro and the first *poi* factories were established. "Although no formal company name is listed with their operations, at least five other people were making *poi* for commercial markets between 1896 and 1901" (Olszewski 2000: 65). By 1914 a significant decline in rice production had occurred, with approximately 1128 agricultural pondfields recorded in the Valley, of which 273 were for rice and 855 for taro (Bishop Estate 1914). By the mid-20th century *poi* production had decreased, with the closure of the Waipi'o Poi Factory in February 1959 (Honolulu Advertiser 1984: Section I: 20 cited by Olszewski 2000: 76).

WAIPI'O VALLEY

Waipi'o Valley is in the Hamakua District on the northeastern windward side of the island of Hawai'i. Steep walls rise approximately 300 m above the valley floor near the ocean and 910 m at the back of the valley, forming a U-shape that is characteristic of the valleys on the relatively young volcanic islands of the archipelago (Figs 1 and 2). The valley floor was formed by alluvial and colluvial processes, with current annual rainfall in the area ranging from c. 2100 to 2600 mm (Rainfall Atlas of Hawai'i 2011). A well-defined "A" soil horizon of moderate acidity has formed throughout the valley floor and this has not been depleted of bases to the extent of normal humic latosols, suggesting fertile ground for irrigated agriculture (Bethel *et al*. 2001, Petersen 1970). Palmer *et al*. (2009: 1452) note that the flow of irrigation water would have supplied a wealth of nutrients to sustain intensive wetland cultivation and suggest "…irrigation water, not weathering, could represent a source of nutrients in excess of crop requirements in irrigated Polynesian pondfields".

The geomorphology of the valley indicates the occurrence of high velocity, coarse-grained sediment discharge and transport, relatively steep channel gradients and frequent channel avulsions during storm discharges (Kubo *et*

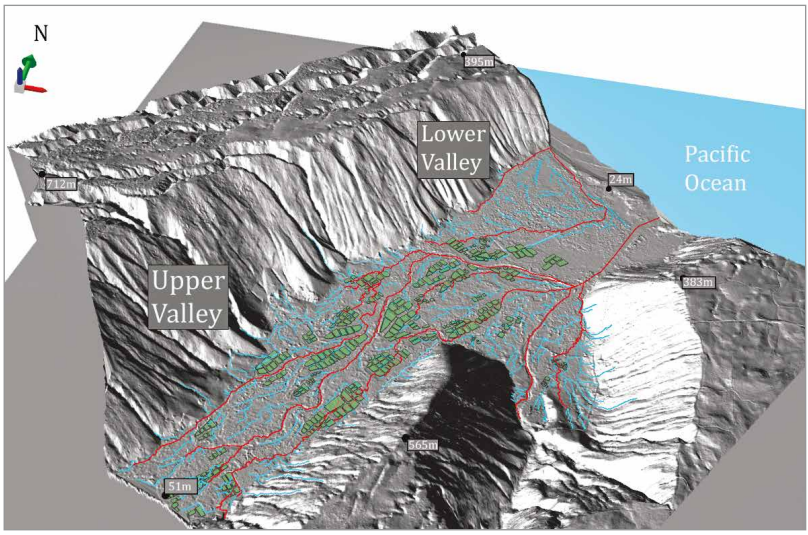

Figure 2. A three-dimensional representation of Waipi‘o Valley. Terrace pondfields captured by a 2010 LiDAR survey are represented as green polygons, rivers as red, while blue lines are streams and possible *‘auwai*. Tributary valleys feed into Waipi‘o in the upper reaches of valley (not shown here), whereas the Wailoa and Hi‘ilawe Rivers occur in the middle to lower valley, eventually flowing into the Pacific Ocean.

al. 2006: 17). The channel avulsions, flooding and tidal waves would have shaped the current surface record of Waipi‘o and various flooding events are recorded between 1918 and 1973 (Kubo *et al*. 2006: 14). During this time it is estimated that approximately 44 hectares of taro land were destroyed by scour or deposition, rendering 30 *‘auwai* (irrigation canals) sections unviable for agriculture. Tidal waves also have been recorded, with a large wave in 1946 destroying many homes and taro pondfields (Salmoiraghi and Yoshinaga 1974).

Waipi‘o Valley features prominently in oral traditions; it was once the royal seat of power for high chiefs Līloa and ‘Umi (Cordy 1994, Kirch 2012). The period of approximately A.D. 1600–1620 saw the rise of ‘Umi the unifier, the son of Līloa, and as the title suggests, ‘Umi both unified the different chiefly polities that existed within Hawai‘i Island and introduced a form of structured agricultural production (Kirch 2012). Consequently,

the oral history of Waipi‘o suggests complex spiritual, social and political aspects of Hawaiian life unfolded within the valley, a way of life that was dramatically changed in the historic period by the influx of new ideas and people (see McGregor 1995, Olszewski 2000). After Western contact, this included the development of the Hawaiian rice industry, a process that hinged on the immigration of Chinese labour for sugar plantations and the rice industry, available land and an expanding rice market both locally and abroad (Coulter and Chun 1937: 20-21, Olszewski 2000: 46). Chinese and Japanese immigrants came to Hawai‘i as indentured labourers and after their service some of them moved to Waipi‘o and subleased land from local Hawaiians and the Bishop Museum for commercial rice cultivation (Lebo *et al*. 1999: 9, McGregor 2007: 58, Olszewski 2000: 46*)*. The rice industry in the valley was dominated by Chinese and to a lesser extent by Japanese and Hawaiians (Lebo *et al*. 1999: 9). Some Chinese immigrants inter-married with Hawaiians living in the valley, while others returned to their homeland or were lured away by economic opportunities in villages or towns (Lebo *et al*. 1999: 32, McGregor 2007: 59).

DATASETS

Our analysis of production change in Waipi‘o integrates three sources of geo-spatial data (Table 1). These include two historic survey maps of Waipi‘o and one modern LiDAR (Light Detection And Ranging) dataset. The first historic map was drafted by Wright in 1914 and depicts the 1846–1855 Land Commission Awards (L.C.A.), parcels given during the Great Māhele, and locations of 1914 *‘auwai,* streams and rivers. Wright’s 1914 map was

Table 1. Sources of geo-spatial data used in this analysis.

Dataset	Time period	Type	GIS format	Source
1	1846–1855	L.C.A.	Vector polygon	Wright 1914
2	1914	Stream network	Vector poly-line	Wright 1914
3	1914	Terrace pondfields	Vector polygon	Bishop Estate 1914
4	1914	Stream network	Vector poly-line	Bishop Estate 1914
5	2010	Terrace pondfields	Vector polygon	2010 LiDAR imagery
6	2010	Stream network	Vector poly-line	2010 LiDAR imagery

geo-rectified to a Transverse Mercator NAD1983 UTM Zone 5N projection using 12 common topographic features depicted on a modern U.S. Geological Survey (1995) topographic map. A second order transformation resulted in an RMS (Root-Mean-Square) error of c. 8.9 m. RMS error is as an accuracy indicator that measures the overall accuracy of the transformation by integrating residuals in both the easting and northing directions of all the GCPs (ground control points) (Gao 2009). Second order polynomials are regarded as the best alternative for a balance of accuracy and computation (Gao 2009) and were used in our analysis. The 1846–1855 L.C.A. parcels depicted on the 1914 Wright map were digitised and assigned attributes of claimant, L.C.A. number and plot number. The classification of crops within the L.C.A was taken from Olszewski (2000: 8-9). Olszewski (2000) synthesised claimants testimonies associated with the Land Commission Awards and corresponding evidence from the Great Māhele Land Court records, to create distribution maps to show the location of L.C.A plots that mentioned *lo'i*, *kula* and other sorts of associated data. As such her study provides a good indication of mid-19th century agricultural practices in the valley. The L.C.A dataset is important as it "peoples" the past, providing direct access to named individuals, and indicates how they managed their agricultural pursuits. These people are possibility the direct or indirect descendants of those still practicing and negotiating agricultural practices in the valley today.

The second historic map was drafted in 1914 for the Bishop Estate, an estate established in the 1880s by Charles Reed Bishop in memory of his wife Bernice Pauahi Bishop, a member of the Kamehameha Dynasty. The map depicts taro, rice and empty terrace pondfields, and associated streams and *'auwai*. It was georectified using seven common features with the Wright map and produced an RMS error of 2 m in relation to that base map. The taro, rice and "unknown cultigen" plots depicted on the Bishop Estate map were digitised, as were the stream networks (both larger named and un-named streams) and *'auwai*. This map provides an indication of early 20th century agricultural activities in the valley and a good representation of the hydrology. The manual digitisation procedure identified 1128 labelled agricultural fields: 273 rice fields and 855 taro pondfields (Bishop Estate 1914).

The third dataset was LiDAR data recorded by the Carnegie Airborne Observatory in 2010. LiDAR is an active remote sensing system for acquiring elevational data. Energy is transmitted from an airborne instrument to the earth's surface, with response rates indicating both the height of any vegetation and the bare earth elevation (see Asner *et al*. 2007 and Ladefoged *et al*. 2011 for details of the LiDAR dataset). This 1.2 m resolution dataset was used to create a digital elevation model (DEM) depicting the under-vegetation "bare surface" of the valley floor and walls. The DEM was the

basis for creating 16 different hill-shade models, each model using a set sun angle of 25 degrees and varying the cardinal point by 22.5 degrees. We used a principal component analysis (PCA) of the 16 models to derive information from the multiple hill-shades (following Devereux *et al.* 2008). Devereux *et al*. (2008: 474) found that the first three to five components usually contain a high percentage (typically over 99 per cent) of the information or variability in the original datasets. The Eigen values (a mathematical indication of the amount of information gained by each new component; see Gao 2009 for an in-depth explanation and the mathematical formula) for our analysis suggest that the first three components contained 99.55 percent of the information. The first three components were then merged into a multi-band image, with individual components corresponding to the bands shaded to the colours of red, green and blue (Fig. 3). This image was used to identify and digitise terrace pondfields, which we classified into two categories: (i)

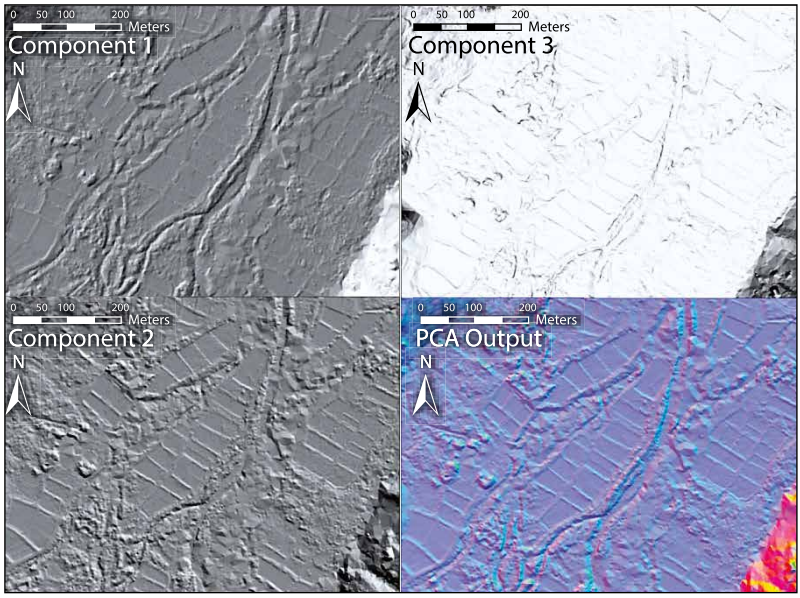

Figure 3. Results of the PCA analysis. The top left image emphasises a series of terrace pondfields in component 1. The bottom left image emphasises the same features visualised in component 2. The top right image emphasises the same features visualised in component 3, while the bottom right emphasises a multiband image of the merged components.

high confidence features that were easily identifiable because they contained at least four connected walls with high slope relief and internal, near-flat areas, and (ii) low confidence features that showed somewhat distinct wall morphology and flat surfaces, but due to the resolution and clarity of the data could not be conclusively defined as terrace pondfields. The manual digitisation procedure identified 363 high confidence and 64 low confidence pondfield features in the PCA raster coverage.

STATE OF HAWAIIAN WETLAND TARO PRODUCTION IN THE MID-1800S

Using Māhele records, in combination with the LiDAR DEM, illustrates the distribution of L.C.A plots, *kula* (open fields or land on the side of the valley) and *lo'i* (wetland terrace pondfields). Linnekin (1987: 21) noted in her analysis of Great Māhele data that "chiefs, local land supervisors and seniors within the family allocated land and water rights to their subordinates, they were conveying the right to utilize subsistence resources: the right to partake of the fruits of the land and water, not ownership in the Western sense". Spriggs and Kirch (1992) built on this notion in their investigation of early 19th century socio-political control of water and land in Kawailoa, Anahulu. Our analysis of the Waipi'o data extends Spriggs and Kirch's (1992) approach and documents a series of complex socio-political relationships in Waipi'o. We can observe the control of land and water by using the L.C.A geo-spatial dataset in combination with the hydrology depicted in the 1914 data. We used the 1914 hydrology data because a map of mid-19th century hydrology of the valley does not exist or could not be located. We focus on individuals specified in the L.C.A. data, their control of water at particular points along a stream and how water flowed from their land to other cultivators.

The 1914 hydraulic dataset was divided into five analytical units or systems (Fig. 4) which enabled us to communicate the complexity of how water moved between cultivators. Hydrology was classified as streams, diverted streams and *'auwai*. Streams and *'auwai* were depicted and labelled on the 1914 map, and diverted streams were depicted on the map, but were not labelled as *'auwai* or named streams. Identifying who controlled the water in a stream or *'auwai* at a particular point was determined by overlaying the L.C.A. coverage with the hydrology. The intersection of L.C.A plots and hydrology occurred in various ways and the five alternatives of connections, diversions, feeders, initial nodes and termination nodes are defined in Table 2. In Figures 5 through 10 the L.C.A. plots that did not connect to streams, *'auwai* or diverted streams were labelled 'NC' for non-connected and indicated in blue and those that were connected were labelled 'C' and are indicated in red.

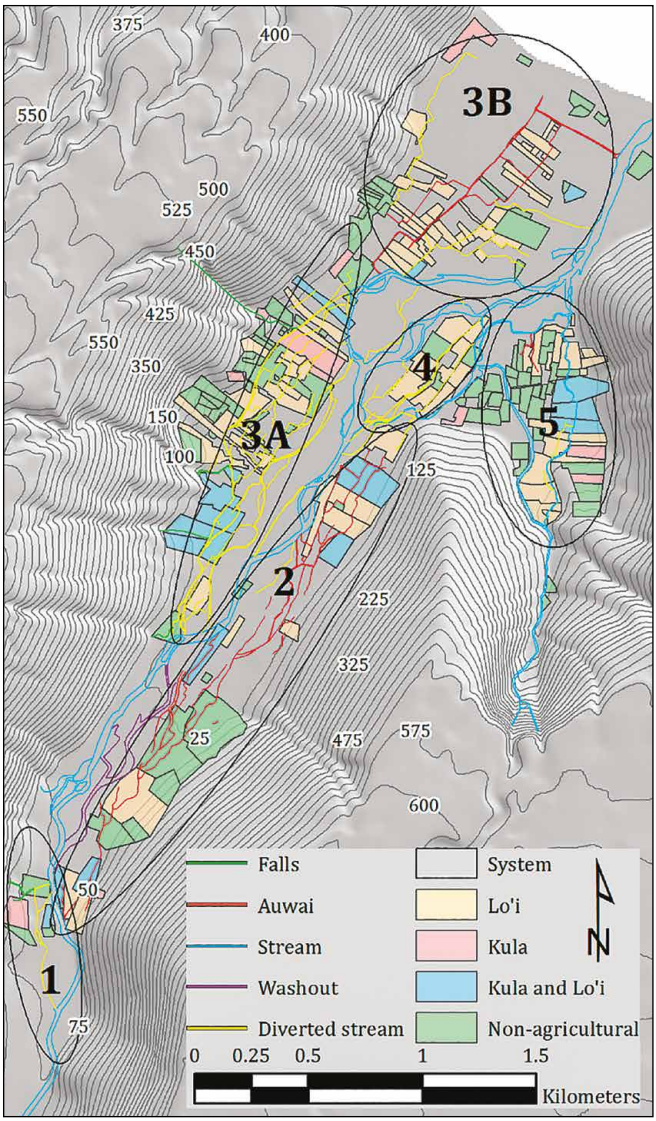

Figure 4. The analytical water system sections are displayed with the distribution of L.C.A agricultural land.

Table 2. This table describes the concepts behind the hydrological symbols.

Water flow symbology	Description
Connection	When two or more streams converge and/or when a stream or *'auwai* runs through a L.C.A plot connecting that plot to the water network, and as such allowing it to be siphoned.
Diversion	When an *'auwai*, stream or waterfall branches off into another direction.
Feeder/Drain	When an *'auwai*, stream or waterfall is not connected and/or does not have an upstream tributary water source, but acts as a drain to direct water from an uphill point towards the main water network.
Initial	When an *'auwai* or a stream brings a new source of water into the water network; a waterfall would be an example.
Termination	When an *'auwai* or stream represents the last branch in a system's hydrological network, where water flows from upstream to downstream, then looping back to main river system, an L.C.A plot or simply flowing out onto the valley's surface.

Systems 2, 3A and 3B are particularly good examples of the relationships between cultivators (Figs 6-8). It is apparent that some people had greater access to water than others. For example, Kawahineainiu's water nodes in system 3A (Fig. 7) sequentially flow from individual to individual until the middle of the system, where one or two individuals, like Nakoko, control various hydrological nodes that feed water to multiple cultivators. This hierarchical pattern is further expressed by how W. Konohiki (perhaps an individual's name, but also the Hawaiian term for a lower ranked chief) is at the uppermost point in system 2 (Fig. 6). Further, it seems that some individuals who have total authority in one system are dependent on others in another system. Claimant Wailoa, while being at the top of the water access hierarchy in system 2, is lower in the hierarchy of system 3A (Fig. 7). Alternatively, this situation might reflect two individuals with the same name. Furthermore, some cultivators received water from multiple sources and/or individuals such as in systems 3A, 3B and 4 (Figs 7-9). While this might be considered costly in hydrologic terms, it suggests social factors were important, a situation noted by Spriggs and Kirch (1992) in their analysis of

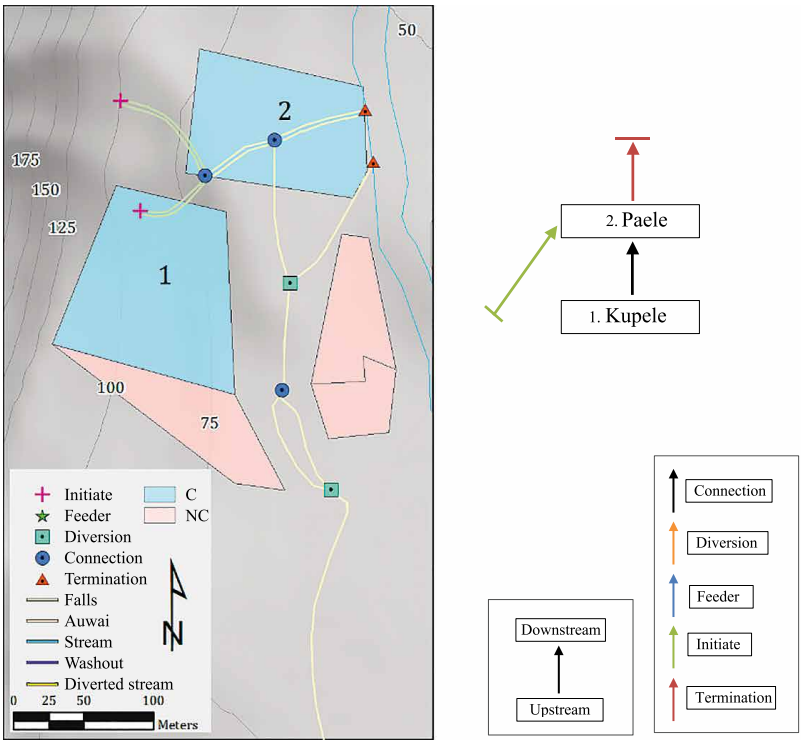

Figure 5. The map on the left and the diagram on the right illustrate the matrix of water flow between cultivators in system 1.

early contact period cultivation systems in Anahulu Valley. They suggest that multiple or secondary canals might be sub-optimal in hydrologic terms, but could represent a social "assertion of a newly acquired right to some of the land and water...[rather] than a required technical innovation" (Spriggs and Kirch 1992: 139). An example of this in Waipi'o is how Maka in system 3B (Fig. 8) was able to derive water from the main river system at multiple points, thereby circumventing the impact of Kaolulo, even though other cultivators were totally dependent on water from Kaolulo, who seems to be lower in the water access hierarchy of system 3B. These networks of water control demonstrate that water and land were contested and dynamic resources that were negotiated within social and environmental parameters.

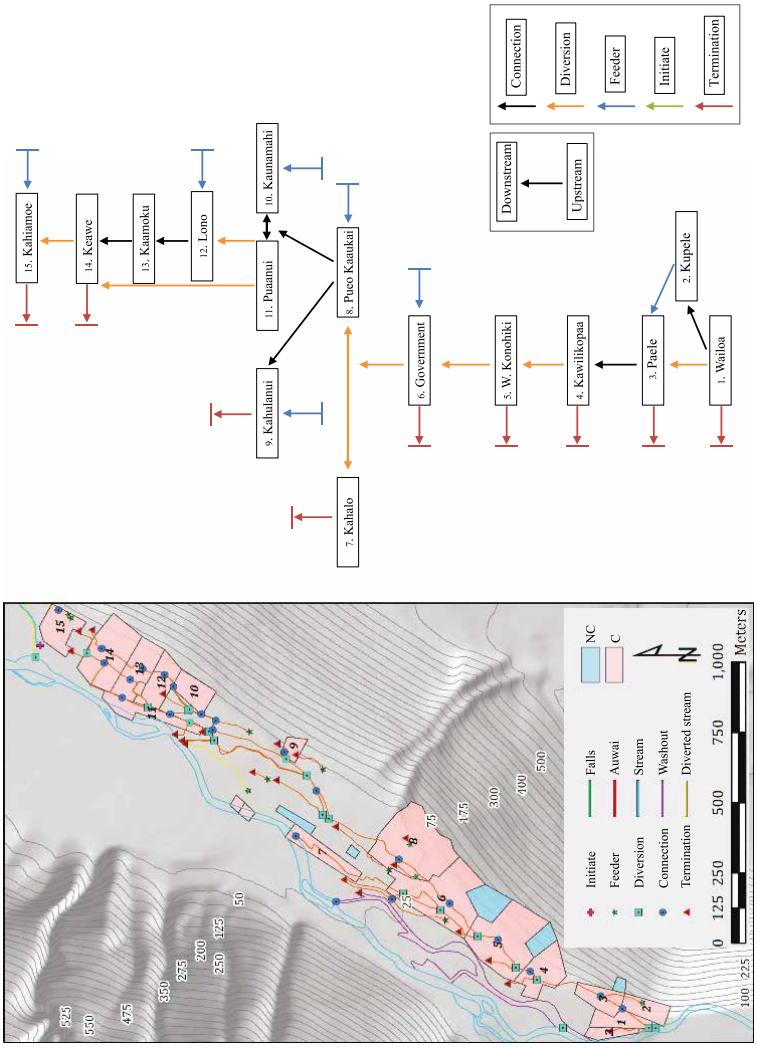

Figure 6. The map on the left and the diagram on the right illustrate the matrix of water flow between cultivators in system 2.

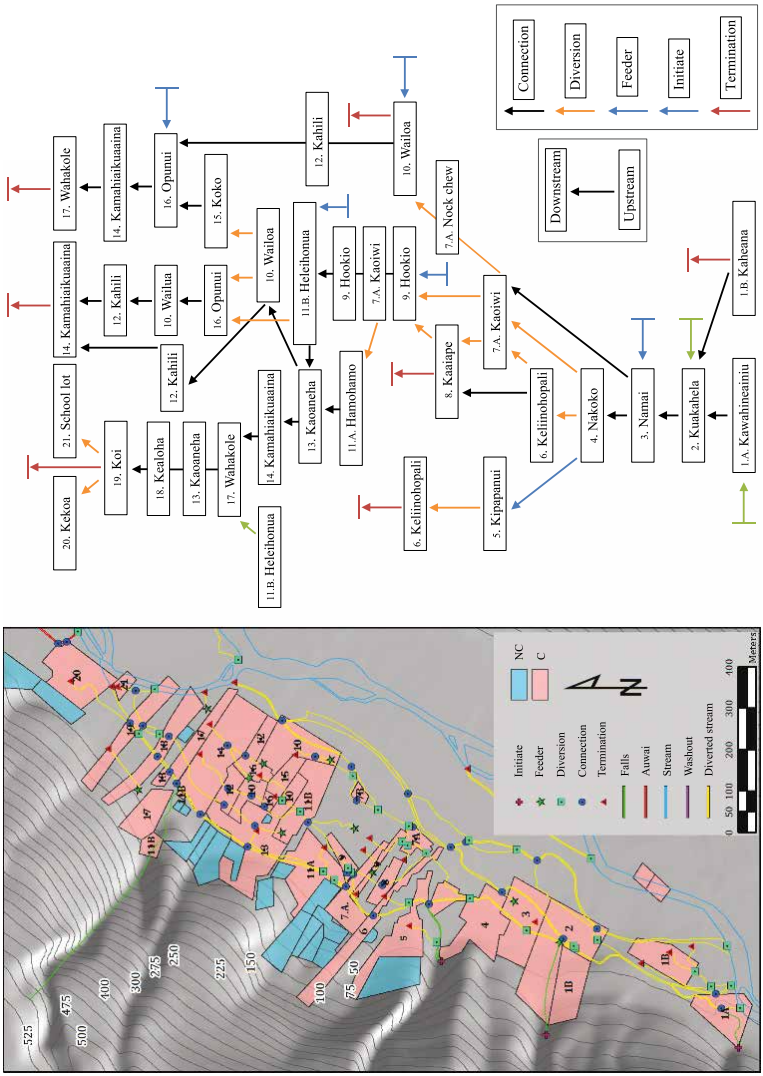

Figure 7. The map on the left and the diagram on the right illustrate the matrix of water flow between cultivators in system 3A.

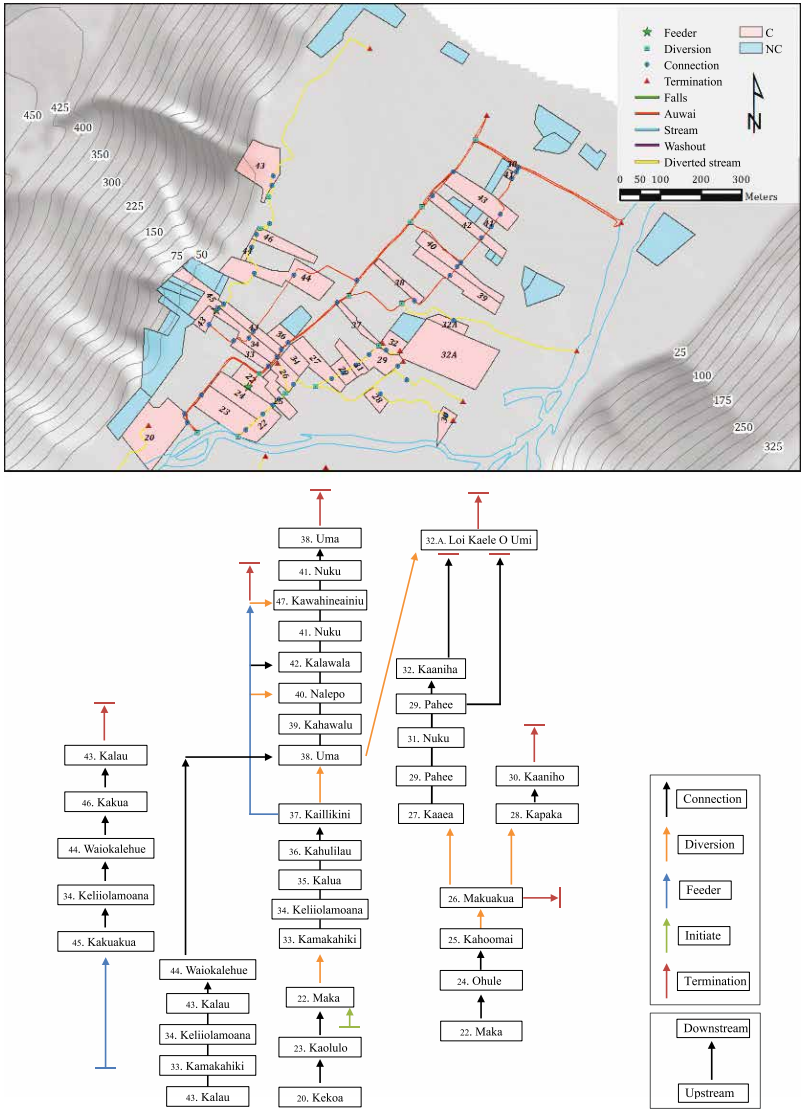

Figure 8. The map above and the diagram below illustrate the matrix of water flow between cultivators in system 3B.

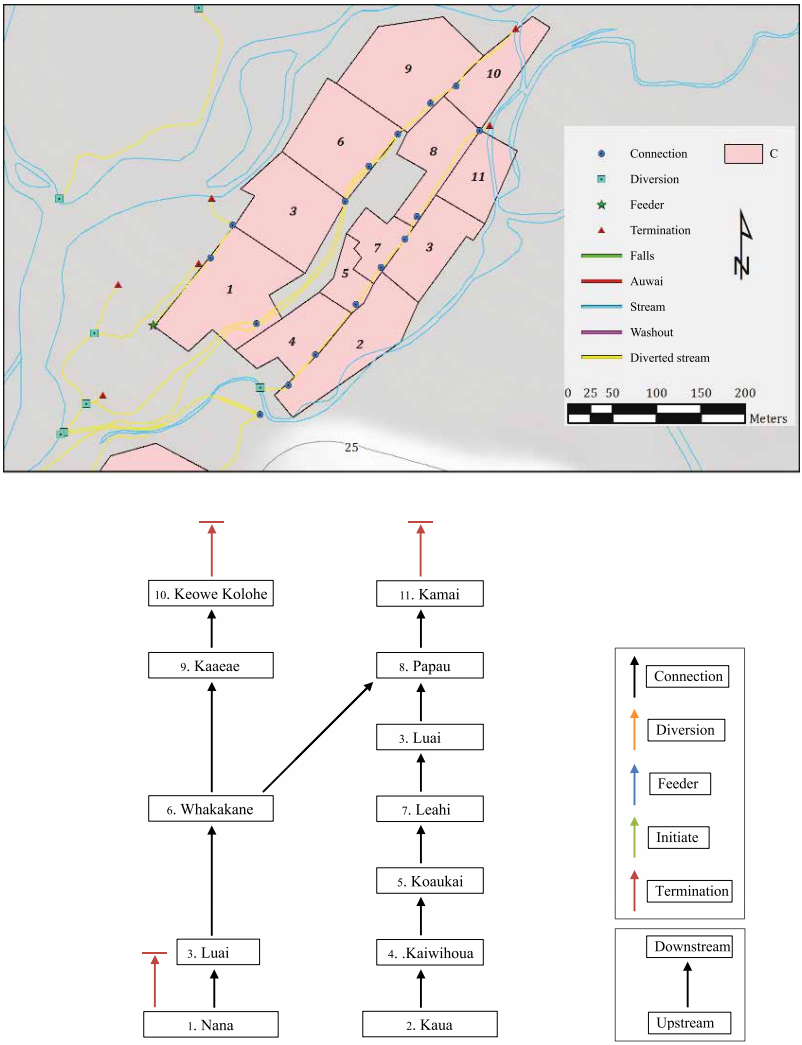

Figure 9. The map above and the diagram below illustrate the matrix of water flow between cultivators in system 4.

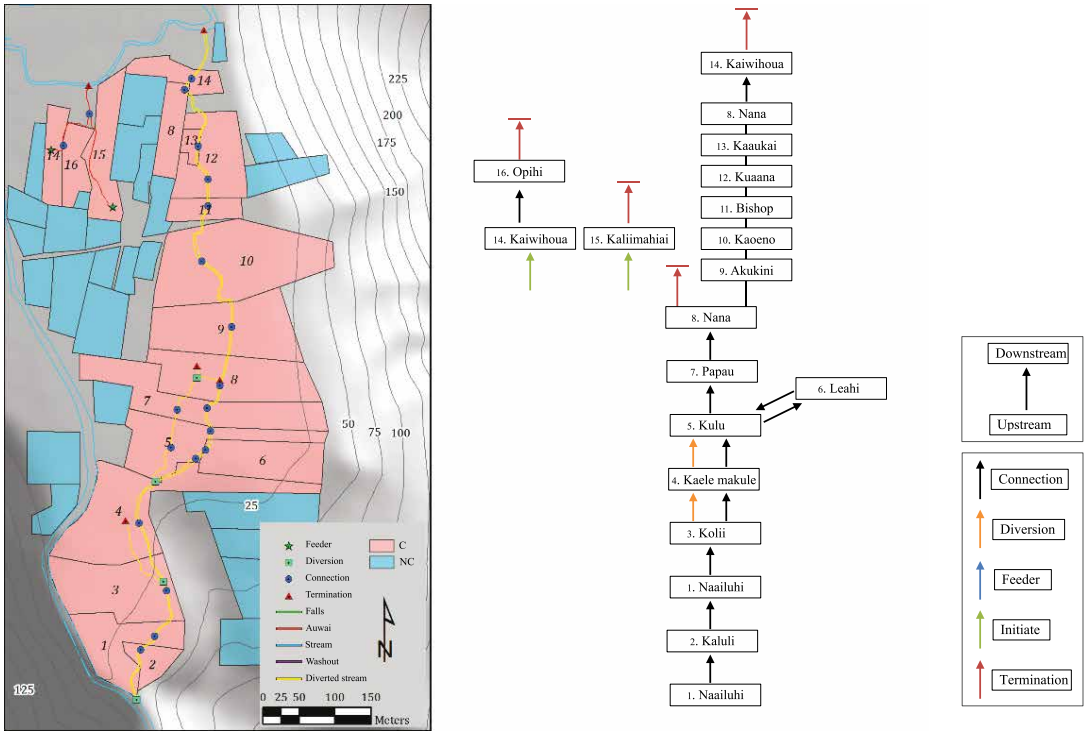

Figure 10. The map on the left and the diagram on the right illustrate the matrix of water flow between cultivators in system 5.

1881–1914: ARRIVAL AND DECLINE OF RICE PRODUCTION

During the late 19th century there was a shift from taro to rice production, as noted by the decrease in the number of taro *lo'i* from the 1529 recorded in the mid-1850s to 1128 recorded in 1914. Several hydrologic systems documented in the mid-19th century demonstrate how crucial the definition and control of L.C.A. grants were for subsequent agricultural practices. The possessors of L.C.A. land would have been able to define lease rights, which would have influenced the rice paddy cultivators who became prominent in the late 19th century, as much of the land at the time was leased (Lebo *et al*. 1999: 30, Olszewski 2000: 46) (Fig. 11). The social dimension of water use in the mid-1800s changed when rice was introduced, however, it was the previous definition of the L.C.A. that dictated where and how later generations leased and had access to land. The spatial patterning suggests that a disproportionate number of coastal L.C.A. plots were converted to rice, whereas the more inland L.C.A. plots were retained for taro production. It was these inland plots that had the greatest complexity of social relations in the mid-1800s and this probably made their conversion to rice production in the late 19th century more difficult. In addition, the status of the people who controlled the plots in the mid-19th century influenced later production strategies. For example, the land listed as owned by W. Konohiki was still extensively cultivated for taro in the late 19th century, and the L.C.A. recorded as "*lo'i o 'Umi* " (or pondfields of 'Umi which were presumably associated with 'Umi's chiefly descendants) were not used for rice production, even though it was surrounded by rice pondfields (Fig. 11).

The conversion of taro to rice production resulted in differential pondfield morphologies, distinctive to each practice. The geodatabase derived from the 1914 Bishop Estate map was used to calculate three metrics for the taro and rice pondfields. These metrics were statistically compared between the two classes of production. The first metric was simply the area of the pondfield, as calculated by the digitised polygon of each pondfield. The second metric was an index for the shape of the pondfield and was calculated by dividing the minimum bounded geometry of the pondfield width by minimum bounded geometry of the pondfield length. This produced an index that varied from 0.01 (for a long thin rectangle) to 1 (for a perfect square). For example a 20 m by 20 m pondfield would have a shape index value of 1, whereas a 30 m by 10 m pondfield would have a shape index value of 0.33. The final metric was the orientation of the pondfield as expressed in compass degrees derived from the longer side of the rectangle or square.

An independent two-sample t-test using a significance level of 0.05 was run to evaluate the null hypothesis that taro and rice pondfields had the same morphological attributes of area, shape and orientation. A Levene's Test for

Equality of Variances determined that the two populations had the same amounts of variability between scores. The resulting p-values suggest that shape and area were significantly different for taro versus rice pondfields, with taro pondfields being generally smaller and squarer than the rice pondfields (Table 3). The orientation of the two classes of pondfields were not significantly different, but a p-value of 0.07 indicates that rice pondfields were slightly skewed to the east in relation to taro pondfields. The results suggest that the morphology of the pre-existing taro pondfields were significantly altered when rice production began.

Undoubtedly Chinese and Japanese rice farmers had their own ideas and norms as to how to successfully carry out wetland cultivation. The rice cultivation re-worked the smaller taro pondfields into larger more rectangular plots. The bunds and barriers between the smaller fields were destroyed to create larger fields, possibly a response to different production requirements. The use of water buffalo for tilling, as has been documented in other valleys, would have been facilitated in these large plots. Other social and cultural imperatives also led to rice fields being larger in area. Olszewski (2000, citing Coulter and Chun 1937: 17-18) notes that Chinese rice production in Hawai'i used two types of organisational co-operative farming, *fun kung* and *hop-pun*. Both involved partnerships among several individuals, but scale differentiated the two. *Fun kung* involved one individual who fronted the capital costs of machinery and access to land, with others providing labour. *Hop-pun* involved equal partnership among individuals as a cost-sharing organisation (Olszewski 2000: 46). Olszewski (2000: 46) noted with "In the 1910 census data all individuals associated with rice agriculture in Waipi'o are Chinese males (n=77; 29.1 percent of all males)". This large male labour force would have constructed and maintained the irrigation systems and paddies for rice production. These labour forces would have contrasted with those of traditional Hawaiian households involved in taro production at a household and semi-commercial level, which eventually evolved with the development of the *poi* industry in the early half of the 19th century and operating at a larger commercial level (Olszewski 2000: 53).

1914–2010: THE INFLUENCE OF RICE ON MODERN TARO PRODUCTION

The creation of larger, more rectangular rice fields during the late 19th century influenced the subsequent 20th century revitalisation of taro cultivation in the valley. We compared the pondfields documented in the 2010 LiDAR data with the 1914 geo-spatial datasets to establish relationships between rice and taro pondfields. The analysis focussed only on pondfields that overlapped at 40 percent or more (Fig. 12). An independent two-sample t-test with unequal variance indicates that the 1914 rice fields are not statistically distinct in terms

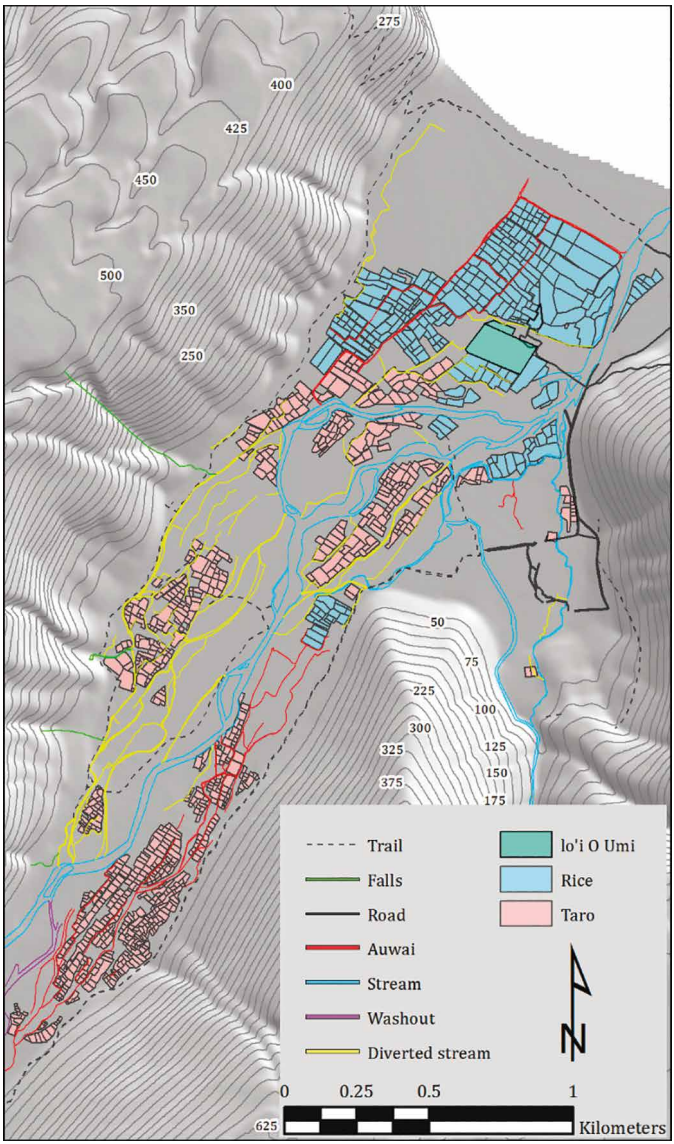

Figure 11. Distribution of taro and rice land in Waipi‘o Valley during the early 1900s.

Table 3. Statistical results for the independent two-sample t-tests comparing the difference between 1914 taro and rice fields.

Group statistics	Type	Number	Mean	Std. Deviation	Std. Error mean
Field Area	Taro (1914)	855	467.4	413.6	14.1
	Rice (1914)	273	1290.2	1432.4	86.7
Field Shape	Taro (1914)	855	0.7	0.19326	0.00661
	Rice (1914)	273	0.6	0.20863	0.01263
Field Orientation	Taro (1914)	855	87.7	46.6	1.6
	Rice (1914)	273	93.3	43.9	2.7

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	P-value (Sig. 2-tailed)	Mean difference	Std. error difference
Field Area	Equal variances assumed	168.466	0	-14.968	1126	0.001	-822.8	54.98
	Equal variances not assumed			-9.368	286.61	0.001	-822.8	87.84
Field Shape	Equal variances assumed	5.506	0.19	3.286	1126	0.001	0.04501	0.013
	Equal variances not assumed			3.159	431.161	0.002	0.04501	0.014
Field Orientation	Equal variances assumed	7.96	0.005	-1.759	1126	0.079	-5.6	3.2
	Equal variances not assumed			-1.814	482.879	0.07	-5.6	3.1

of area, shape and orientation in comparison to the 2010 taro pondfields (Table 4). This suggests that modern cultivators re-used some of the existing rice fields, rather than converting the fields back to their original pre-contact taro pondfield forms. In contrast, an independent two-sample t-test indicates that 1914 taro pondfields are statistically distinct from the 2010 taro pondfields in terms of shape, but not in terms of area or orientation (Table 5). The 2010 taro pondfields are more rectangular and tend to be larger relative to the smaller, squarer 1914 taro pondfields.

The historical process of transforming a landscape of predominantly taro cultivation to one of rice and then back to taro production was influenced by the configuration of the field structures. In 2012, Melrose and Delparte (2012: 61) noted "there are approximately 12 farmers in the valley actively producing taro and 3 to 5 main growers who produce most of the Valley's production". They go on to suggest that "for the farmers who grow taro, the motivations for continuing to farm go far beyond simple market value of the crop" (Melrose and Delparte 2012: 62). The analysis of the 2010 LiDAR data indicates that modern cultivators are not reconfiguring land to emulate traditional ideas of wetland taro cultivation; rather, rice cultivation has become incorporated into ideas about what modern wetland taro pondfields should entail. McGregor (1995: 165) suggests Waipiʻo is a cultural *kīpuka*, a rural Hawaiian community from which other Hawaiian communities can be "regenerated and revitalised in the contemporary setting". This reference to a *kīpuka*, an oasis of land surrounded by more recent volcanic flows, depicts Waipiʻo as a centre for the revitalisation and perpetuation of Hawaiian culture for future generations of traditional taro farmers (McGregor 1995: 196). "Waipiʻo as a traditional center for taro farming…[is training] a new generation of farmers steeped in the traditions of Waipiʻo and in protocol related to the cultivation of taro" (McGregor 2007: 82). The complex agricultural palimpsest of Waipiʻo is one template for economic and cultural revitalisation, and reflects the iterative performances of people's perceptions of traditional taro and historic rice cultivation.

* * *

The analysis of L.C.A. records from the Hawaiian Great Māhele documents early 18th century land use relationships and the importance of accessing and controlling water for taro production. Rice became a key cultigen for farmers by the 1880s and declined shortly after, with the last crop of rice in the valley around 1928 (Lebo *et al*. 1999: 19). During this time taro cultivation never ceased but it definitely declined and it is clear that rice cultivation re-worked the smaller and squarer taro pondfields into larger more rectangular plots.

The bunds and barriers between the smaller fields were destroyed to create larger fields with different management and production requirements. The loss of taro pondfields and the rise of rice signals an altered scale of production, with the cultivation of rice introducing different water requirements and technologies, such as the use of water buffalo for ploughing. The analysis of the 2010 LiDAR data indicates that late nineteenth and early 20th century rice production influenced future taro cultivation. The taro pondfields

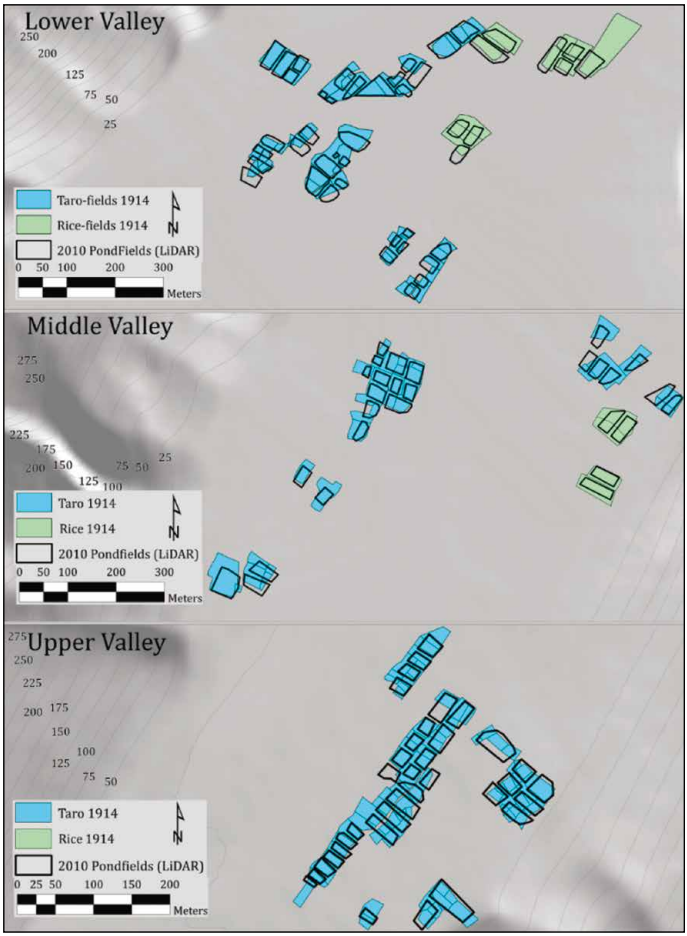

Figure 12. Modern taro pondfields in relation to 1914 rice and taro pondfields.

Table 4. Statistical results for the independent two-sample t-tests comparing the difference between rice fields in 1914 and taro fields in 2010.

Group statistics	Type	Number	Mean	Std. Deviation	Std. Error mean
Field Area	Rice (1914)	14	1909.2	1415.0	378.18
	Taro (2010)	13	1185.0	461.8	128.07
Field Shape	Rice (1914)	14	.5367	.20209	.05401
	Taro (2010)	13	.5002	.18525	.05138
Field Orientation	Rice (1914)	14	99.7	43.50752	11.62787
	Taro (2010)	13	70.2	41.96029	11.63769

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	P-value (Sig. 2-tailed)	Mean difference	Std. error difference
Field Area	Equal variances assumed	1.111	.302	1.758	25	.091	724.3	411.9
	Equal variances not assumed			1.814	15.926	.089	724.3	399.3
Field Shape	Equal variances assumed	.254	.619	.489	25	.629	0.748	0.748
	Equal variances not assumed			.490	24.998	.628	0.746	0.746
Field Orientation	Equal variances assumed	0.066	.799	1.795	25	.085	16.5	16.5
	Equal variances not assumed			1.798	24.958	.084	16.5	16.5

Table 5. Statistical results for the independent two-sample t-tests comparing the difference between taro fields in 1914 and taro fields in 2010.

Group statistics	Type	Number	Mean	Std. Deviation	Std. Error mean
Field Area	Taro (2010)	108	689.3	584.4	56.23
	Taro (1914)	181	558.7	511.8	38.0
Field Shape	Taro (2010)	108	0.62	0.17	0.016
	Taro (1914)	181	0.68	0.17	0.013
Field Orientation	Taro (2010)	108	83.9	45.3	4.4
	Taro (1914)	181	89.7	46.4	3.4

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	P-value (Sig. 2-tailed)	Mean difference	Std. error difference
Field Area	Equal variances assumed	.001	0.994	1.990	287	0.48	130.6	65.7
	Equal variances not assumed			1.924	202.2	0.56	130.6	67.9
Field Shape	Equal variances assumed	.454	0.501	-3.005	287	.003	-0.06	0.02
	Equal variances not assumed			-3.032	231.5	0.003	-0.06	0.02
Field Orientation	Equal variances assumed	.001	0.980	-1.037	287	0.301	-5.8	-5.6
	Equal variances not assumed			-1.043	229.6	0.298	-5.8	-5.6

documented in the 2010 data were similar to the 1914 rice fields, and larger and more rectangular than the taro pondfields mapped in 1914. By analysing the social relations depicted in the Māhele Land Commission Awards and documenting the historic conversion of taro to rice and back to taro we are able to understand the changes in, and resilience of, agricultural production in this iconic windward Hawaiian valley.

ACKNOWLEDGEMENTS

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ABSTRACT

The resilience and revitalisation of *taro*/*kalo* agriculture in the Hawaiian contact period is analysed in Waipi'o Valley, on the Big Island of Hawai'i. Historic work has demonstrated the effects of colonial contact on the people of Waipi'o. Documents from the Māhele period, census information and missionary records are combined to paint a picture of how life unfolded in Waipi'o Valley over time. What is alluded to, and yet unexplored, is the changing production system and an overall trend of decreasing and fluctuating wetland taro production, where traditional cultivation is transformed by the introduction of rice farming. Later in time this too fades out, when taro again becomes dominant. Interestingly, wetland taro cultivation in Waipi'o is still practiced today, with interest in revitalising the capacity of a once intensively cultivated valley. Here, the impact of rice, and other crop introductions, is explored in terms of revitalising these wetland traditions. This was done by generating "snapshots" of the landscape through time. Information detailing traditional owners, plot locations and pondfields metrics were derived from digitised historic survey maps, and modern remote sensing techniques such as high resolution LiDAR (Light detection and ranging) imagery. Combining this information not only catalogued the historic trend of declining wetland irrigation, but directly illustrates the influence of past agricultural choices on modern wetland revitalisation agendas.

Keywords: Waipi'o Valley, Hawaiian archaeology, LiDAR, irrigated agriculture, GIS analysis, resilience, revitalisation

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REVIEWS

Kawharu, Merata (ed.), *Maranga Mai! Te Reo and Marae in Crisis?* Auckland: University of Auckland Press, 2014. 258 pp., Bib., index, photos., tables NZ$45.00 (soft cover).

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In late 2014, the Treaty of Waitangi Tribunal found that Ngāpuhi, and by extension other Māori tribes, did not cede sovereignty to the British as a consequence of the signing of the Treaty of Waitangi. The Tribunal's report, which is the first phase of Ngāpuhi's wider Treaty settlement claim, is consistent with Māori, legal and scholarly arguments over many years. One of the results of this political disenfranchisement has been a crisis of identity for Ngāpuhi as individuals and collectives. This is the subject of *Maranga Mai! Te Reo and Marae in Crisis?*, edited by Merata Kawharu.

The opening chapter establishes the basic premise of the book: the conflict between traditional ways of doing and being and the realities of disenfranchisement. Ngāpuhi elder Merimeri Penfold recalls the influence of the Rātana Movement in the early 20th century which, while providing cohesion to a people Rātana described as "remnants" (p. 25), also required them to turn "away from the ways of the past", the result of which left people "in a state of bewilderment" (p. 26). The following chapters outline the 21st century state of Māori language and *marae* in Ngāpuhi's region of Te Tai Tokerau, using personal observation in both Māori and English language from elders and youth, as well as analysis from a survey of 500 Te Tai Tokerau youth, the 'Te Wehi Nui a Maomao' Project.

An underlying tenet of the book is that a strong Māori identity mitigates a "state of bewilderment". In Chapter 3, Arapera Ngaha finds that those who attend *Kura Kaupapa* (schools where Māori is the language of instruction), and who are in close contact with their *marae* are, unsurprisingly, more likely to have strong cultural identity. However, as most Ngāpuhi have become disengaged from cultural practices on *marae* (Chapter 10) and *Kura Kaupapa* attendance is declining (Chapter 6), the problem becomes one of how to reintegrate communities, state institutions and families so that individuals do not continue to be cultural "remnants".

It is not all bad news. Margie Hohepa's analysis shows that schools where English is the primary language of instruction can help students' knowledge about Māori language and tribal identity, although not to the same degree as Māori language schools. Merata Kawharu and Paratene Tane conclude that for many schools in the Tai Tokerau, *marae* are important to the learning process, with both *marae* and schools benefitting from reciprocal arrangements. While some *kaumatua* (elders) criticise schools for "institutionalising" Māori language and knowledge, others acknowledge that schools are playing an important role in supporting Māori cultural identity.

The tension between the old and the new ways extends to debates within *marae* communities themselves. *Kaumatua* Fraser Toi's chapter shows how *marae tikanga* (protocol) has changed due to demographic and cultural pressures. For example, to encourage greater *marae* use, injunctions against mothers nursing babies inside *wharenui* (meeting houses) have been overturned "in contravention of tūturu tikanga" (established protocol). As pointed out in Stephen McTaggart's analysis of Māori language census data in Chapter 9, it is women who are more likely to "kōrero Māori than males" (p. 165).

While the book does not directly deal with Ngāpuhi's Treaty of Waitangi claim, Paul Tapsell in his chapter on the historical and contemporary development of *marae*, notes how the Treaty process of preferring negotiation with bigger entities over the smaller traditional groupings, has been another factor in marginalising *marae* and their communities.

The book offers solutions to the crisis of declining use of Māori language and *marae*. One way is to strengthen the economic basis of *marae* communities, as explained by Kevin Robinson of Te Rarawa in Chapter 5, through taking advantage of initiatives such as the growing *mānuka* honey export trade. Robinson stresses the importance of the internet, both to help individuals run their businesses from home and to link Te Rarawa *marae* to disconnected families. That the authors likewise advocate for the use of the internet to extend and strengthen cultural access is unsurprising, given that many of them had developed 'Te Wehenui.com', an online repository of Te Tai Tokerau language and culture as outlined in Chapter 12.

The strength of this book is in the space it gives to both academic and community voices. While the language and school data analysis should prove useful for planners, and the issues of moving culture onto an online platform are worth noting, for this reader the problems of maintaining an authentic identity within a *marae* context while responding to the reality of cultural, social and demographic change, was particularly insightful. While the book does not overtly attempt to theorise its findings and observations against its political background, readers will readily find plenty of examples of the "politics of indigeneity". One quibble is that while there are a number of excellent photographs of Te Tokerau *marae*, these are not named. For readers unfamiliar with these *marae*, it would have been helpful to have a list included somewhere.

Overall, the book serves its purpose of taking the cultural identity pulse of Te Tokerau *iwi* as they work towards settlement of their Treaty claim. While the Waitangi Tribunal's 2014 report vindicates Ngāpuhi's claim that it did not give up sovereignty, the issue for the future will be how to reinvigorate a cultural identity that has been impacted by the inability to make decisions as a sovereign people. In this way, this case-study resonates with the experience of other *iwi* and with many Indigenous peoples globally, which is one aim of the book. As Tapsell notes (p. 80), the challenge for Ngāpuhi will be to ensure that "decisions made today especially about Treaty settlement, language and marae programmes' will have the right sort of 'ripple effects on the living of tomorrow."

Schachter, Judith: *The Legacies of a Hawaiian Generation: From Territorial Subject to American Citizen*. New York: Berghahn Books, 2013. 226 pp., bib., index. US$95.00 (hardback).

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For Schachter, relationships form the ligaments, to use her word, of the *mo'olelo* (tale or history) of John Simeona and his sister Eleanor Ahuna. They are members of a generation referred to in the book title that were born in the late 1920s and 1930s and who, Schachter argues, experienced a particular process of Americanisation. Schachter claims their story is not a history of American colonialism, of which she is clearly critical, but neither is it a story of Native Hawaiian culture under United States rule. By presenting the story of Simeona and Ahuna, Schachter explores what it means to be Native Hawaiian and a citizen of the United States and investigates the relationships and entanglements between a generation who strongly identified with Native Hawaiian culture and an imperial United States that made strenuous efforts to deny their indigeneity.

Schachter has constructed an unconventional biography, but the template she draws on is Simeona's own life-writing, a *mo'olelo* which he gifted her as a 64-page book: *Life Story of a Native Hawaiian.* To write her book, Schachter also uses interviews, kitchen table chat, and hundreds of letters that Simeona wrote to Schachter over the two decades of their association. Schachter acknowledges Jonathan Osorio's contention that *mo'olelo* constitutes a form of assertive scholarship so that the *mo'olelo* is not dominated by "scholarly paraphernalia" (p. 13), but Schachter does provide notes on many referenced texts, archival and secondary sources. Referring to Dening (2004), she employs the concept of beach crossings throughout the volume. This porous, shifting metaphor and the digressive, anecdotal and sometimes contradictory *mo'olelo* underpin her depiction of the ways in which power relations influence the lives of individuals who "strenuously and steadfastly redesign that impact every day of their lives" (p. 11).

The construction of Simeona's and Ahuna's stories attends to the particulars of the individuals in time and place. Arranged in chronological order, the chapters follow them from their earliest years to their later lives as *hānau mua* (oldest living member of a family, source of wisdom). Central to each of their *mo'olelo* is their abiding connection to Hawaiian homesteads, in particular Keaukaha, near Hilo on the island of Hawai'i but there are also connections with Pana'ewa on Moloka'i and Waimānalo on Oahu. Schachter argues that the homesteads, epitomised by Keaukaha, represent a powerful critique of American policy in Hawai'i and have been sites for the unanticipated revitalisation of *ahupua'a* (a land division) customs where residents maintained "a collective way of life at the margins of the colonialist-capitalist economy" (p. 30).

Prince Kūhiō's proposal for the 1921 Hawaiian Homes Commission Act (HHCA) is one of many historical threads that run through the life narratives of Simeona and Ahuna. Following their lives as school-age children with curricula devoid of Hawaiian

history, Schachter personalises the impacts of the labour demands of the most powerful business interests and the plantation elite on young Native Hawaiian lives and the ramifications for generations to come. Schachter's deployment of this strategy brings events like the Great Depression, the Massie case and the Japanese attack on Pearl Harbour into sharp focus. Colonial pedagogy and impositions such as Standard English and scripted roles for Native Hawaiian students are also depicted through the experiences of Simeona in particular. Sixty years later in 1998 his granddaughter Ana's eighth-grade history book reveals the persistence of white-washed stories of Hawai'i's "discovery." A family funeral, inheritance and instances of *hānai* (to foster or adopt) are each revealing of the, at times, fragility of *aloha* and the conflicting values of different generations, but also the resilience and aptitude of Native Hawaiians in the face of sustained and unequal power relations.

However, there are moments when Schachter creates a curiously non-committal impression. The subtitle for example: "From Territorial Subject to American Citizen" suggests a progression of status that is a highly contestable notion, regardless of Schachter's conviction that resistance strategies are unlikely to provide a singular pathway to cultural autonomy for *kanaka maoli* (Native Hawaiians). The fluidity with which Simeona and Ahuna negotiated their identities was cultivated through necessity. Her description of Simeona learning to "practice the right culture at the right time" (p. 3) was borne out of a hegemonic disparity. Yes they have multiple subject positions, but Ahuna's determined silence about her school years is profound, and her younger sister Priscilla's statement that: "the library wasn't meant for us" (p. 62) speaks of a great betrayal of the young lives of Simeona's and Ahuna's generation. The notion that they are American citizens with all of the accompanying rights and privileges as Schachter suggests is undermined by a host of other examples: blood quantum definition of Native Hawaiian, Native Hawaiian incarceration statistics and public versus private schooling. Schachter integrates many of these issues in her text but neglects to decode or problematise American citizenship and its connection to a statehood that is not universally recognised. Schachter's positive assessment of one judge's comment that he "let them exploit the system" (p. 145), unlike his fellow justices (in relation to *hānai*), constructs Family Court rulings as subject to personal disposition. The injustices within this example are manifold but unexplored.

Schachter consistently foregrounds the lives of Simeona and Ahuna and emphasises the negotiations each of them makes, in Ahuna's case as a commissioner within the Department of Hawaiian Home Lands (DHHL) and also as an activist in her role as president of the homestead association; Hui Hoʻomanu. Schachter provides detailed and contextualised examples of the ways in which Simeona and Ahuna, among others, employ constitutional processes, federal programs and legal procedures to maintain kinship practices and relationship with the land. Her depiction of these negotiations is one in which Americanisation has not overpowered indigenous Hawaiian culture.

The potential readership for Schachter's book is wide. Her portrayal of homestead life beginning with the legacy of Prince Kūhīo and the subsequent entanglements through which she describes Simeona's and Ahuna's unfolding lives actualise many aspects of Hawaiian history and epistemology and firmly locate the personal in the political. Within an academic context it is an exceptional resource in terms of life writing, a perspective on the world through the story of a life. Schachter declares early

on that she is not an insider, although she does spend time calibrating her "Auntie" status, she does not refer to any of the people she talks story with as her informants or participants, and rises to Aunty Eleanor's challenge that she assert her point of view without making herself the central subject of the story. A lesson Schachter derives from Simeona's writing is that *mo'olelo* is pedagogical; it is not only the account of a single individual, but transmits knowledge and learning to future generations. Schachter's text is a meaningful addition to the canon of Hawaiian studies particularly because of her analysis of the evolution of the HHCA, but especially because of the Native Hawaiian subject-centred portrayal at the heart of the text. Whether the book fulfils Simeona's expectations of a biography or Ahuna's maxim that a person writes in order to create change, Schachter has reciprocated with something of value for the *'ohana* with whom she has spent so many years talking story.

Reference

Dening, Greg, 2004. *Beach Crossings: Voyages Across Times, Cultures, and Self*. Philadelphia: University of Pennsylvania Press.

Smith, Vanessa: *Intimate Strangers: Friendship, Exchange and Pacific Encounters*, Cambridge: Cambridge University Press, 2010. 323 pp., bib., illustrations, index. AUS$44.95 (soft cover).

MICHAEL REILLY
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At the heart of Vanessa Smith's fascinating book is a Tahitian word, *taio*, signifying an "Oceanic friendship pact formalized with some degree of ceremony" (p. 69), with persons from outside someone's own kin group, and involving an ongoing sequence of exchanges, including personal names as well as goods and services. It quickly came to be used by European explorers to describe their cross-cultural relationships with the men and women they perceived to have authority over the local people in Tahiti and other islands. *Taio* is arguably the first Tahitian word that Europeans pick up in their writings. Nonetheless, it is also a tantalisingly unknowable word which disappears from use during the 19th century. Contemporary Maohi, 'Indigenous Tahitians', who Smith spoke to, have no recollection of it. It only exists in the archival records of the Europeans visitors who experienced it. However, Smith's book is not an ethnographic reconstruction of ancient Tahitian forms and practices of friendship, although these are alluded to. Instead, Smith utilises the concept of *taio* in order to explore how Europeans responded to particular demonstrations of Oceanic cross-cultural friendships, and what light these experiences throw on European ideas of friendship. The Pacific Islanders who became *taio* to Europeans are viewed through the writings of these friends and other European observers.

In the first half of this book, Smith creates a sequence of chapters that mark moments in the early European exploration of Oceania, in particular of Tahiti and other eastern islands. The first chapter looks at the welcoming crowds, highlighting their significance in the "fraught problematic of cross-cultural encounter" in Oceania (p. 35).

Such meetings between visitors and locals led to the making of *taio* relationships, but these situations might also explode in violence, as Smith demonstrates when Cook died at the hands of an assertive Hawaiian crowd. Chapter 2 examines the nature of the *taio* friendship. Europeans recognised that for Tahitians these relationships were long-lasting and emotionally significant. Much puzzled and shocked Europeans about this concept, notably that by exchanging names and thereby identity, they might become a substitute husband for their *taio*'s chiefly wife. Making friends enabled Europeans to establish a sustainable system of trade, although they reacted cynically whenever their *taio* expressed any interest in receiving commodities. Chapter 3 investigates European ideas about the nature of friendship. By the 18th century they thought of it as an affective or sentimental relationship that transcended any materialistic expectations. But in an impressive review, Smith discerns much evidence for the cool calculation of what benefits came the way of being someone's friend. The two-sidedness of European ideas of friendship were also revealed in the visitors' contradictory responses to their *taio*s' open expectation of gift exchanges. Chapter 4 looks into the sceptical reactions of Europeans to displays of grief by Tahitian men and women during mourning ceremonies. The visitors thought these emotions insincere, excessive and contrived; more theatre than how a person should behave in real life. They preferred the restrained expressions by Tahitian men which better reflected their own inclination towards self command in situations of intense emotions.

In the second half of the book Smith focuses on individual stories and particular relationships between Oceanian and European explorers. Chapter 5 narrates the experiences of four Oceanians who journeyed back to Europe: Ahutoru, Tupaia (who died at Batavia), Mai and Lebuu. They and their European companions became, in the eyes of those who met them, "fellow travellers" whose " knowledge and authority became inevitably conjoined" (p. 182). Instead of focusing solely on them as part players in a larger and long-term project of imperialism, Smith argues for the possibility of viewing these travellers through the frame of friendship's "fortuitous, fine-grained hierarchies and equalities" (p. 197). Chapter 6 re-examines the *Bounty* mutiny as an event prompted by the *taio* friendships formed by various crew members. In the moment of mutiny and in its aftermath at trial, judgements as to who supported Bligh or the mutineers also came down to "the slippery signs of friendly intentions" (p. 251), including such gestures as tears (or the lack of them). Ironically, those mutineers who got away to Pitcairn ultimately transformed their accompanying *taio* into servants ("*towtow*"), no longer equal partners. In doing so, their actions resemble those of later colonial settlements which reduced many Oceanians to a subordinate status in their own lands; a process that may explain, as Smith suggests, why the concept of *taio* disappears from use about that time. The final chapter looks at several friendship exchanges in the Marquesas Islands. The beachcomber, Edward Robarts, successfully established a series of exchanges whereas his near contemporary, the missionary William Crook, reluctantly recognised the implicit reciprocal expectations in such relationships, preferring one-way conversions to Christianity, without success. A Catholic mission also failed when friars refused making friends of local leaders, in contrast to their interpreter, Maximo Rodriquez, who formed local relationships by helping out in the local community. Such gestures anticipate Bronislaw Malinowski's fieldwork methods built on "affective engagement" with the community (p. 293).

Smith has written a perceptive, authoritative and cross-culturally informed work. Its editing and presentation is excellent, with few defects: an incomplete sentence (p. 89) and an incorrect word ("then" instead of "than" at line 27, p. 81). A particular strength is the extensive quotation from the primary sources, including texts on friendship and explorer journals. By choosing friendship as her subject Smith explores the ways people from both sides of the beach came to know each other as particular individuals, even if only for a short while. Together they created something that was, as Smith argues, more reciprocal and dialectical; a relationship resembling the partial and particular one of the *taio*. Arguably, such gestures of intimacy have helped many colonised nations, with their legacies of inter-cultural oppression, to survive and perhaps even to prosper.

Smith, Vanessa and Nicholas Thomas (eds), *Mutiny and Aftermath: James Morrison's Account of the Mutiny on the* Bounty *and the Island of Tahiti*. Honolulu: University of Hawai'i Press, 2013. 344 pp., bib., illustrations, US$45.00 (hard cover).

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James Morrison's two part journal and account form one of several early visitor narratives that provide foundational texts for understanding particular ancient Pacific Islands societies. As in Morrison's case these guests stayed long enough to become culturally competent participants in local society. They were also sympathetic observers who tried to report what they saw or experienced as accurately as they could. Also like Morrison, they were not strongly biased by past European intellectual speculations about Pacific peoples. Such writings provide a particular kind of Indigenous history, as told by outsiders with inside knowledge, that supplements the oral traditions recorded by Islander experts. The editors and their publishers are to be congratulated on producing a new and accessible version of this important work which will continue to be valued by Pacific scholars, and also by those fascinated by an eye-witness account of a famous naval mutiny.

The first half of Morrison's text forms a self-contained journal. The first chapter commences with embarkation in England and takes the reader to the moment of mutiny and the division of the ship and crew between William Bligh and the mutineers under Fletcher Christian. The second chapter recounts the unsuccessful attempt to settle on the island of Tubuai. Morrison puts on record a fairly comprehensive survey of the observable elements of the local culture; one not subsequently described by outsiders until 1827. Chapter 3 begins with the return to Tahiti, the division between those who stayed, and those who stuck with Christian, and what Morrison and the others did during their residence amongst their Tahitian friends. Chapter 4 recounts the capture and incarceration of the Tahiti-based mutineers on the *Pandora*, their subsequent wreck and return to trial in England.

Morrison's naval identity is prominent in the journal, especially in the earlier pages as he records nautical information such as winds and distances travelled. He also carefully notes Bligh's behaviour, both as captain and purser, towards the officers and

men, including what he allocated as food entitlements and instances of his abusive language. Later, in Tahiti, Morrison lovingly describes in detail his construction of a vessel from local materials which he hoped to sail to England. Alongside that, he recounts the mutineers' involvement in dynastic struggles between different chiefly families as they vied for dominance. While a fascinating narrative, he reveals certain cultural blindspots, notably when he describes any challenge to the ruling family as rebellion. Like later missionaries he could not see that this was a form of legitimate political process whereby different leaders contested for overall authority. The mutineers, operating as a military force, were key players in defeating the opponents of Pōmare II (or Tū), thereby ensuring his ultimate hegemony.

The second part of Morrison's work is an encyclopaedic account of all those aspects of the place, the people and their culture that he happened to observe or have explained to him. He produces a huge sequence of ethnographic snapshots, taken at the time he lived there, but presented to us as if providing a total explanation of the Tahitian world since its inception in the creation. Chapter 5 lists elements of the natural and cultural world of Tahiti, including its landscape, flora and fauna, as well as types of foods and material objects. The importance of sea-oriented activities was well understood by Morrison who devotes much space to the various sorts of fishing. Chapter 6 turns to the cultural domain of Tahiti, starting with the divisions of land and of political power, the nature of the Tahitian chief, the practice of war, aspects of religion, *marae* and priests, and various cultural practices that came to his attention including mourning, marriage, *tapu* and resource restrictions (*rahui*). The weakest link in Morrison's fascinating reportage is his attempt to explain religious ideas which require insight into an inner world that most outsiders find challenging to understand without years of guidance from experts. Chapter 7 continues to look at cultural elements that Morrison observed, such as buildings, canoes, gender roles in eating, foods, cooking techniques, clothing, various activities (such as sport, dance, music), illnesses, death and mourning. As the editors stress, Morrison's account and the journal should be viewed as "codependent" (p. 8) since both work together to explain important aspects of Tahitian cultural life, such as the practice of warfare or the making of formal friendships (*taio*).

In their presentation of this work the editors decided to retain as much as possible of Morrison's own writing style, complete with his spelling and punctuation. The only exception they made was to modernise any indigenous names and terms. In addition, Maia Nuku has contributed very helpful appendices listing placenames, islands, plants and important Polynesians who appear in Morrison's pages. As the editors point out, the reading audience for this text today is vastly different and more complex from the one who bought the first limited edition of this work, including as it does both indigenous and non-indigenous readers. For Morrison, facing trial for mutiny, writing up his journal and account must have brought back pleasant and poignant memories. If it saved his life, as the editors argue, then he also ensured that those Tahitians who befriended him remain a powerful presence for us today. This work is a priceless portal into the world of all these ancestors.

PUBLICATIONS RECEIVED*

January to March 2015

Anderson, Atholl, Judith Binney and Aroha Harris: *Tangata Whenua, An Illustrated History*. Wellington: Bridget Williams Books, 2014. 544 pp., appendices, bib., endnotes, illustrations, index. NZ$99.99 (hardcover).

Ashton, Jennifer: *At the Margin of Empire: John Webster and Hokianga, 1841–1900.* Auckland: Auckland University Press, 2015. 276 pp., bib., index, notes, plates. NZ$49.99 (softcover).

Ballantyne, Tony: *Entanglements of Empire: Missionaries, Māori, and the Question of the Body.* Auckland: Auckland University Press, 2015. 376 pp., bib., glossary, illustrations, index, notes. NZ$39.99 (softcover).

Belich, James: *The New Zealand Wars and the Victorian Interpretation of Racial Conflict.* Auckland, Auckland University Press, 2015. 400 pp., bib., illustrations, index, notes. NZ$39.99 (softcover). [A re-issue of the 1986 edition with a new, short preface.]

Kahn, Jennifer G. and Patrick Vinton Kirch: *Monumentality and Ritual Materialization in the Society Islands: The Archaeology of a Major Ceremonial Complex in the ʻOpunohu Valley, Moʻorea*. Honolulu: Bishop Museum Bulletins in Anthropology 13, Bishop Museum Press, 2014. 267 pp., appendices, bib., illustrations. US$50.00 (softcover).

Triffit, Geraldine and Tom Triffitt: *Soso Families, Naviti Island, Fiji: A Pictorial Record of Families in Soso Village from 1977–2012 Arranged by Tokotoko*. Blurb Press, 2nd edition, 2014. 252 pp., index, maps, photographs, AUD$197.84 (hard cover). [Large format landscape. Purchase details at <http://blur.by/1yFoPmm>.]

* The inclusion of a publication in this list neither assumes nor precludes its subsequent review.

PUBLICATIONS OF THE POLYNESIAN SOCIETY

The publications listed below are available to members of the Polynesian Society (at a 20 percent discount, plus postage and packing), and to non-members (at the prices listed, plus postage and packing) from the Society's office: Department of Māori Studies, University of Auckland, Private Bag 92012, Auckland. All prices are in NZ$.

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MĀORI TEXTS

1. NGATA, A.T. and Pei TE HURINUI, *Ngā Mōteatea* (Part 1). New Edition of 1958 edition, 2004. xxxviii + 464 pp., two audio CDs, genealogies. 2004. Price $69.99 (hardback).
2. NGATA, A.T. and Pei TE HURINUI, *Ngā Mōteatea* (Part 2). New Edition of 1961 edition. xxxviii + 425 pp., two audio CDs, genealogies. 2005. Price $69.99 (hardback).
3. NGATA, A.T. and Pei TE HURINUI, *Ngā Mōteatea* (Part 3). New Edition of 1970 edition. xlii + 660 pp., audio CD, genealogies. 2006. Price $69.99 (hardback).
4. NGATA, A.T. and Hirini Moko MEAD, *Ngā Mōteatea* (Part 4). New Edition of 1991 edition with English translation. xviii + 380 pp., two audio CDs, genealogies. 2007. Price $69.99 (hardback).

MEMOIR SERIES

14. OLDMAN, W.O., *The Oldman Collection of Maori Artifacts*. New Edition with introductory essay by Roger Neich and Janet Davidson, and finder list. 192pp., including 104 plates. 2004. Price $30.
15. OLDMAN, W.O., *The Oldman Collection of Polynesian Artifacts*. New Edition with introductory essay by Roger Neich and Janet Davidson, and finder list. 268pp., including 138 plates. 2004. Price $35.
37. DE BRES, Pieter H., *Religion in Atene: Religious Associations and the Urban Maori*. 95pp. 1971. Price $4.10.
38. MEAD, S.M., Lawrence BIRKS, Helen BIRKS, and Elizabeth SHAW, *The Lapita Pottery Style of Fiji and Its Associations*. 98pp. 1975. Price $7.00.
39. FINNEY, Ben R. (comp.), *Pacific Navigation and Voyaging*. 148pp. 1975. Price $8.00.

41. McLEAN, Mervyn,. *An Annotated Bibliography of Oceanic Music and Dance*. 252pp. 1977, with 74pp. 1981 Supplement. Price $12.30.

43. BLUST, Robert, *The Proto-Oceanic Palatals*. 183+x pp. 1978. Price $12.00.

45. HOOPER, Antony and Judith HUNTSMAN (eds), *Transformations of Polynesian Culture*. 226+viii pp. 1985. Price $35.00.

47. SIIKALA, Jukka. *'Akatokamanāva. Myth, History and Society in the South Cook Islands*. 153+xi pp. 1991. Price $29.95.

49. SORRENSON, M. P. K., *Manifest Duty: The Polynesian Society Over 100 Years*. 160pp. 1992. Price $32.50.

50. BROWN, DOROTHY (comp.), *Centennial Index 1892-1991*. 279pp. 1993. Price $30.00.

51. TE ARIKI TARA 'ARE, *History and Traditions of Rarotonga.* Translated by S.Percy Smith. Edited by Richard Walter and Rangi Moeka'a. 216pp., genealogies and song texts. 2000. Price $70.00.

52. REILLY, Michael P.J., *War and Succession in Mangaia—from Mamae's Texts.* 112pp., geneaologies and maps. 2003. Price $16.00.

53. BIGGS, Bruce Grandison, *Kimihia te Mea Ngaro: Seek That Which is Lost.* 80pp. figs. 2006. Price $30.00.

54. REILLY, Michael P.J., *Ancestral Voices from Mangaia: A History of the Ancient Gods and Chiefs*. xiv + 330 pp., maps, drawings, genealogies, index. 2009. Price $40.00.

55. TE HURINUI, Pei, *King Pōtatau: An Account of the Life of Pōtatau Te Wherowhero the First Māori King*. 303 + xiv pp., figs, genealogies, indexes, maps. 2010. (Available to members of the Society only at $40.00.)

56. McRAE, Jane, *Ngā Mōteatea: An Introduction / He Kupu Arataki*. Māori translation by Hēni Jacobs. 158 pp., biblio., figs, notes, song texts. 2011. (Available to members of the Society only at $28.00.)

MISCELLANEOUS PUBLICATIONS

TOKELAU DICTIONARY. lii + 503 pp. Price: $35.00.

INCEST PROHIBITIONS IN MICRONESIA AND POLYNESIA: Special Issue, June 1976. 155pp. Price $12.00.

FUTURE DIRECTIONS IN THE STUDY OF THE ARTS OF OCEANIA: from *Special Issue*, June 1981. 70pp. Price $4.00.

BIOLOGICAL ANTHROPOLOGY IN THE PACIFIC: Special Issue, March 1994. 108pp. Price $12.50.

KIE HINGOA *'NAMED MATS'*, 'IE TŌGA *'FINE MATS' AND OTHER TREASURED TEXTILES OF SAMOA & TONGA: Special Issue*, June 1999. 120pp. Price $15.00.

ESSAYS ON HEAD-HUNTING IN THE WESTERN SOLOMON ISLANDS: Special Issue, March 2000. 144pp. Price $15.00.

POSTCOLONIAL DILEMMAS: REAPPRAISING JUSTICE AND IDENTITY IN NEW ZEALAND AND AUSTRALIA: Special Issue, September 2003. 124 pp. Price $15.00.

POLYNESIAN ART: HISTORIES AND MEANINGS IN CULTURAL CONTEXT: Special Issue, June 2007. 192 pp. Price $30.00.

COLONIAL GRIEVANCES, JUSTICE AND RECONCILIATION: Special Issue, June 2012. 116 pp. Price $15.00.

TABUA *AND* TAPUA: *WHALE TEETH IN FIJI AND TONGA. Special Issue*, June 2013. 127 pp. Price $15.00.

EXTRAORDINARY POLYNESIAN WOMEN: WRITING THEIR STORIES. Special Issue, June 2014. 230 pp. Price $15.00.

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