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Field: Essays in Honour and Celebration of Richard Shutler Jr's
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FIFTY YEARS IN THE FIELD. ESSAYS IN
HONOUR
AND CELEBRATION OF RICHARD SHUTLER JR'S
ARCHAEOLOGICAL CAREER

Edited by Stuart Bedford, Christophe Sand and David
Burley

25

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION
MONOGRAPH

ADZES OF INTERACTION: SAMOAN BASALT ARTEFACTS IN FIJI

Geoffrey Clark

INTRODUCTION

The nature of long-distance interaction is a perennial issue in Pacific archaeology since it is inextricably tied to hypotheses about prehistoric colonisation, voyaging capacity and the influence of population migration and diffusion on the development of island societies. Recent discussion has repackaged the migration-diffusion debate and focused on the merits of whether phylogenetic or reticulate accounts best explain ethnogenesis in Oceania (Bellwood 1996). Both share a similar goal in trying to "improve the historical realism of their [prehistorians'] claims and reconstructions" (Terrell *et al.* 1997:155), which can be accomplished by developing "better models that take into account the region's real historical complexity" (Green 1997:19).

Of the several kinds of empirical data that can be applied to this aim, including biological and linguistic analyses, the direct evidence of inter-archipelagic contact from exotic artefacts is particularly useful (Green and Kirch 1997; Kirch and Yen 1982). It is an often acknowledged fact, however, that the durable items recovered from archaeological sites, like stone, obsidian and pottery, represent an unknown and potentially small and misleading fragment of the actual interaction history (Davidson 1978; Hegmon and Plog 1996; Kirch 1997).

Ethnographic records from western Melanesia, for instance, show that many exchange goods were made of perishable items, which, in cases like the red-feather money of Santa Cruz, derived value from the short lifespan of their component materials (Davenport 1971). Terrell *et al.* (1997:175) take up this point and note that it is premature to equate a lack of material evidence for prehistoric contact with isolation in the Pacific, a perhaps not unreasonable plea when archaeological samples from an island are small, but one which seems to deny the possibility that an absence of exotic goods in the prehistoric deposits of Oceania might in certain cases accurately record the nonexistence of long-distance voyaging.

As with much interpretation of the past, the problem of equifinality, where vastly different processes might

conceivably lead to the same archaeological signature (Renfrew 1977:83), has meant that discussion of an exotic item is frequently restricted to its probable area of origin and age, while the cultural implications of interaction are left largely unexplored. Documenting any instance of long-distance contact in Oceania is an important task as it demonstrates that islands were not culturally and biologically isolated and closed systems (Weisler 1997). But if historical realism is the eventual goal of interaction studies then a broader understanding of the process is required, including the context, impact and directionality of cross-cultural contact. These aspects, among other variables (e.g. Green and Kirch 1997), have often been difficult to establish for several reasons, including the small amount of exotic material found on several island groups in Remote Oceania, like New Caledonia, Vanuatu and Tonga, and the time depth separating archaeological assemblages of exotic items, particularly those of Lapita age, from the observations of ethnographic trade networks (Ambrose 1978). In the case of the Samoan basalt adzes recovered from the Fiji Islands in the past 20 years considered here, neither of these limitations is severe.

Once described as "amazingly slight" (Davidson 1978:387), the number of non-local archaeological artefacts, termed "hard goods" by Green and Kirch (1997:21), in the Central Pacific archipelagos of Fiji, Tonga and Samoa has now reached a threshold requiring synthesis of the scattered data. Particularly important has been the discovery that basalt adzes made on Tutuila in American Samoa reached Fiji, and several other island groups in the last millennium (Best *et al.* 1992; Di Piazza and Pearthree 2001). This paper reviews the distribution and chronology of Samoan adzes in Fiji and explores the potential for the historical accounts of indigenous contact between Fiji and Tonga to contribute to a deeper understanding of the interaction process in the Central Pacific.

SAMOAN BASALT ARTEFACTS IN FIJI

Distribution

Even before the chemical analysis of adzes made from a fine-grained gray or black oceanic basalt confirmed it, a

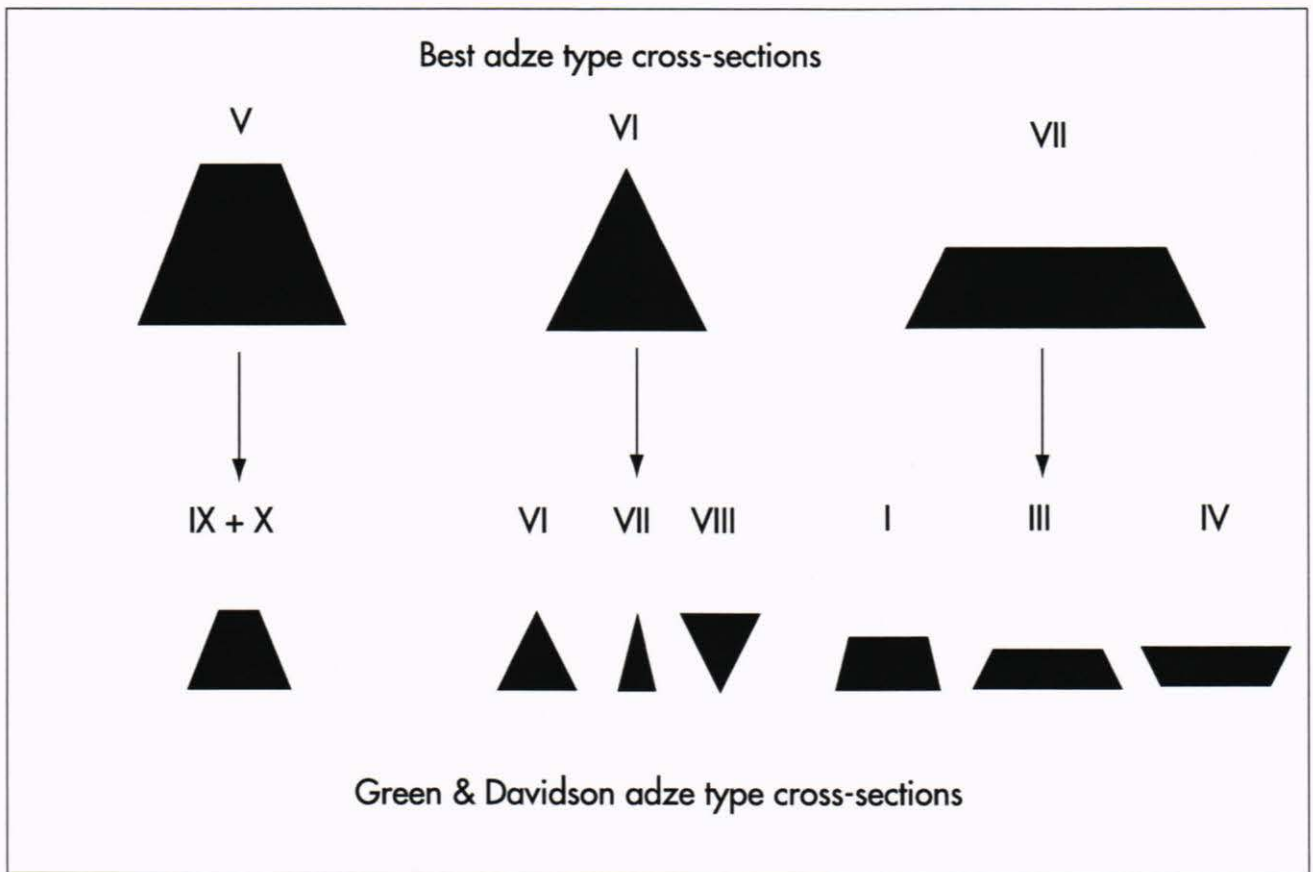


FIGURE 1. Adze and adze-flake cross-sections made in Samoan basalt identified in Lau by Best (1984), and potential Samoan correlates (after Green and Davidson 1969:21-32).

Samoan origin for adzes recovered from East Polynesia and the Central Pacific was assumed on stylistic and geological grounds (e.g. Kirch and Yen 1982:236-237; Leach 1993). As early as 1938 Thompson (1938:101) made a basic division between a set of "Fijian" adzes distinguished by curved and convex cross-sections and a West Polynesian adze group with quadrangular cross-sections, found in southern Lau, Tonga, Samoa, Rotuma, Tokelau, Futuna and 'Uvea.

Simon Best carried out extensive field work in the Lau Group in the late 1970s and recovered a number of adzes and basalt flakes that in morphology or mineralogy suggested a Samoan derivation. Nine Lauan adzes and one from Taveuni were analysed for major and minor elements using x-ray fluorescence, along with 35 samples of Pacific adze and quarry basalts (Best 1984:402-405). The results of this early basalt-characterisation study indicated that Tutuila in American Samoa was the source of all but one of the Lauan adzes, and refined the typological features of the imported adzes. The foreign adzes had a mid-length cross-section that was high

trapezoidal to triangular (Best Type V and VI), often with incomplete removal of flake scars by grinding noticeable on the sides, and with a relatively narrow and sharp median ridge (Best 1984:491). Figure 1 shows the adze and adze flake cross-sections made in Samoan basalt identified in Lau by Best (1984:396), and their potential counterparts in Samoa using the adze classification of Green and Davidson (1969). As noted at Samoa (Green and Davidson 1969:26) and other places where Best Type VI adzes have been found, like the four adzes ranging in length from 305 to 356 mm from the Ngati Tiare cache in Rarotonga, several of those from Fiji also appear to be relatively large (see Best 1984:Fig. 6.2d and Sand *et al.* 1999:25).

Table 1 lists the island and site distribution of adzes and flakes made in Samoan basalt that have been identified in Fiji. About half have been chemically analysed, with remaining samples attributed to Samoa on the basis of their morphology and petrology. An adze from the site of Delaivuna on Lakeba and flakes from Ogea and Komo have been included as they are olivine/feldspathic

Island	Site/Area	Adze/ Flake	Sample#	Excavated/ Surface	Characterisation method	Reference
Cikobia	Vuninuku	Adze	—	?Ex ¹	morphology and mineralogy	Sand <i>et al.</i> 1999, 2000
Cikobia	Namasi	Adzes	—	Sur	morphology and mineralogy	Sand <i>et al.</i> 1999, 2000
Cikobia	Rukunikoro	Adze	—	Sur	morphology and mineralogy	Sand <i>et al.</i> 1999, 2000
Taveuni	Ura	Adze	AN 17	Sur	x-ray fluorescence	Best 1984
Vanuabalavu	Rasea	Adzes (n=2)	AN 16	?Ex ²	x-ray fluorescence	Best 1984
Yacata	Natuiwaqa	Flake	—	?Ex	morphology & mineralogy	Clark & Hope 2001
Lakeba ³	Ulunikoro (101/7/47)	Adzes (n=3)	AN 10-12	?Ex & Sur	x-ray fluorescence	Best 1984
Lakeba	Wakea (101/7/196)	Adze	AN 13	?Ex	x-ray fluorescence	Best 1984
Lakeba	Laselase (101/7/2b)	Flake	147	Ex	petrology	Best 1984
Lakeba	Qaranipuqa (101/7/197)	Flake	142	Ex	petrology	Best 1984
Lakeba	Delaivuna (101/7/81)	Adze	15	Sur	petrology	Best 1984
Moce	MO-6	Adze	AN 18	Sur	x-ray fluorescence	Best 1984
Komo	K-a	Flake	166	Sur	mineralogy	Best 1984
Namuka	Na-1	Adze	AN 14	Sur	x-ray fluorescence	Best 1984
Kabara	Ka-1	Adze	AN 15	Sur	x-ray fluorescence	Best 1984
Totoya	Dravuwalu (To31/50/35)	Adze	—	?Ex	x-ray fluorescence	J. Clark & Cole 1996
Fulaga	FU-18	Adze	AN 19	Sur	x-ray fluorescence	Best 1984
Ogea	Og-5	Flake	156	Sur	petrology	Best 1984
Vatoo	Unlocalised	Adze	—	?	morphology	Thompson 1938: Fig. 7

1. '?Ex' refers to adzes recovered accidentally or by excavation from shallow and disturbed near-surface contexts.

2. The provenance of the Vanuabalavu adze (AN16, FM#Vb/1) is unclear. Best (1984: Appendix L) list this sample as a surface find, while Best *et al.* (1992: 73) record it as excavated. It is figured by Clunie (1986: 21, 146).

3. Best (1984: 397, 401) reports a Type V or VI adze from the inland limestone fort of Kedekeke (101/7/132) made in a celadonite basalt, but it is unclear whether it is a Samoan import.

4. Sample# refers, in the case of basalts examined by x-ray fluorescence, to the analysis number listed in Appendix L, and to those characterised on the basis of their mineralogy, to the petrographic identification number given in Appendix K, of Best (1984).

TABLE 1. Adzes and flakes of potential Samoan origin found in Fiji.

basalts with celadonite, similar in mineralogy to several Samoan adzes (Best 1984:Appendix K). However, the Delaivuna adze is not listed in the summary tables given in Best's thesis. Of the remaining adzes/flakes attributed to Samoa an example from Cikobia figured by Sand *et al.* (1999:25) is almost identical with a Samoan Type VI adze figured in Green and Davidson (1969:26-27), while the Yacata adze flake has a mineralogy and cross-section suggesting that it is also an import to northern Lau. Thompson (1938:Pl. A4, Fig. 7) illustrates a basalt adze with a steep trapezoidal cross-section from Vatoo that is a Best Type V, and is potentially of Samoan origin.

The distribution of Samoan adzes in Fiji is closely associated with the eastern Fijian islands of the Lau Group, found as far south as Vatoo, Ogea and Fulaga, through to Lakeba and Vanuabalavu, and extending out of Lau north to Taveuni and Cikobia (Figure 2). Looking further afield, it is useful to consider whether there is stylistic evidence in the published adze descriptions that Samoan adzes penetrated further west into Fiji.

Information to examine this question is limited by the paucity of work on several islands, notably Vanua Levu and Kadavu, although adze collections have been made in parts of Viti Levu and Lomaiviti. There is a wide range of Samoan adze forms and cross-sections (Green and Davidson 1969), but for the purpose of this paper only those of Best Type V and VI that have been securely identified by chemical analysis as imports to Fiji are considered. This procedure might underestimate the number of Samoan adzes in Fiji adze collections, but has the advantage of restricting stylistic inferences to those that in form and cross-section have a reasonable probability of being West Polynesian imports (Best 1984:637). For instance, Best Type VII adzes (Best 1984:Table 6.2), which have a shallow-trapezoidal cross-section, were made in local and imported materials (Best 1984:Table 6.4).

Gifford (1951) illustrated and described 29 excavated and surface-collected adzes; two were from Ovalau, one was from Taveuni, with the rest from Viti Levu. These

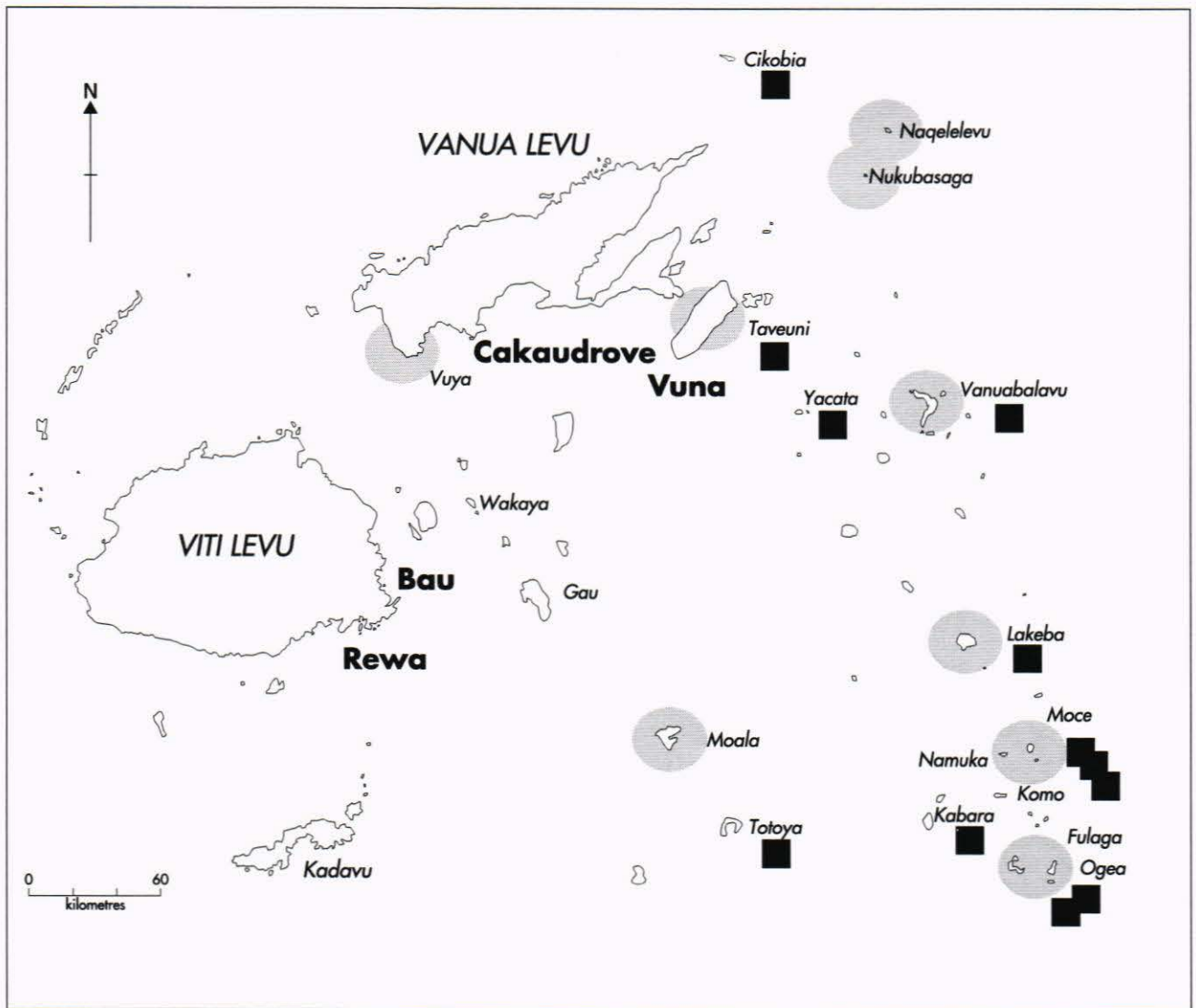


FIGURE 2. Fijian locations known to Tongans in 1777 from Anderson's list (Geraghty 1994) are shaded ovals. Adzes and flakes of Samoan basalt recovered from islands are dark squares (see Table 1). Not shown are Vatoa, Tuvanaicolo and Tuvanaira in the far south of the archipelago.

adzes are fully ground and oval to oval-rectangular cross-sections dominate. There is no indication, either in shape or in the accompanying brief mineralogical observation of the adze material, that a Samoan origin for these adzes is likely (Gifford 1951:259-260). Adzes recovered from Sigatoka and Yanuca sites include one "trapezoidal" adze fragment from Yanuca (Birks and Birks 1968) which has, however, a wider median ridge than the Type V examples shown by Best (1984:Fig. 6.20), and its status as a Samoan import is questionable. Elsewhere on Viti Levu and adjacent islands no adzes of distinctive Samoan morphology have been identified in collections from excavated archaeological sites such as Navatu 17A,

Sigatoka, Naigani, Natunuku and Ugaga Island or noted in the adze collections from Viti Levu housed in the Fiji Museum (Best 1981; Clark 1999; Palmer 1967a, 1968).

On Wakaya Island there are two adze collections obtained from surface collections at fortified sites. Palmer (1967b:Fig. 28) illustrates 16 adzes, none of which have either of the typically Samoan cross-sections noted by Best (1984). Rechtman (1992:189) recovered 35 adzes and adze fragments and obtained 27 thin sections from the Korolevu and Delaini hill forts. Of the 19 adzes with an identifiable cross-section most were either round to plano-convex (Best Types I-III) or oval rectangular (Best Type XI), and only one had a trapezoidal cross-section

(Rechtman 1992:195). However, like the Yanuca adze the "trapezoidal" description of the Wakaya adze is arguable since it has a roughly sub-hexagonal cross-section, a wide median ridge and a mineralogy consistent with a local origin (Rechtman 1992:86, 191, 195).

Eight stone adzes have been collected from the surface of three ring-ditch sites on Gau Island (Lomaiviti) and two were possible Samoan imports according to Moce (1972:102). One small adze 60mm long has a triangular cross-section and could be a Samoan import, while the other has a shallow trapezoidal cross-section of Best Type VII that is not of unambiguous Samoan derivation (see above).

On current evidence, then, Samoan adzes of Type V and VI cross-section are largely confined to east Fiji with only two possible examples from Lomaiviti and none so far recorded from Viti Levu. However, chemical analysis of adzes from west Fiji needs to be done to confirm the discontinuous distribution suggested by the survey of adze cross-sections.

Chronology

Turning to the chronology of the Samoan adzes, it is apparent from Table 1 that most are surface or near surface finds and there are relatively few excavated artefacts to establish an approximate date for their arrival in Fiji. Previously, Best (1984) had approached this problem by combining information from Lauan site types where the imported adzes had been found and considering the age of the small number of sub-surface specimens. Adzes of Types V and VI were found at forts, built along rugged limestone ridges and with extensive stone worked terraces and defensive walls. One of these, the limestone fort of Ulunikoro, was dated to 900 B.P. Other sites where Samoan adzes were found included undefended coastal flats and rock shelters adjacent to forts. Although a few examples of adzes with diagnostic cross-sections were excavated, they all came from upper disturbed excavation layers and were difficult to date either directly by radiocarbon or by association with pottery styles of known age.

A single flake of celadonite basalt recovered from Layer H of the Laselase rockshelter is bracketed by a marine-shell determination 25cm below Layer H with a calibrated age at two standard deviations of 830-660 cal B.P., and a charcoal date of 290-0 cal B.P. from a Layer B-E sample above (NZ 5182 and NZ 4039). All dates are calibrated using CALIB rev. 4.3 following conventions reported in Anderson and Clark (1999). An age for the imported basalt flake of between 700 and 200 cal B.P. seems plausible.

A flake with a petrology matching the Samoan adzes found on Vanuabalavu was recovered from Layer E of the Qaranipuqa rock shelter (Table 1). If this sample is from Samoa then median C¹⁴ determinations from above it and from Layer E itself suggest an age range of 790 to 480 cal B.P. (NZ 4904 and NZ 4905).

The site types with Samoan adzes identified in Lakeba, southern Lau and Vanuabalavu also appear to apply to other islands. The possibility that two adzes from Gau Island, mentioned above, are imports is reduced as they were collected from 19th century ring-ditch fortifications, a site type where Samoan adzes have yet to be recovered in the Lau Group. On Cikobia two adzes were from forts (Namasi and Rukunikoro), while others were from small to medium sized coastal flats (Yacata, Totoya, Cikobia). The Cikobia fortifications have not been dated, but Sand (pers. comm.) feels that their construction probably began around c.500 B.P., suggesting a maximum age for the introduced adzes which were surface finds.

Determining the date when basalt adzes of Types V and VI first entered Fiji and the duration of the import phase is difficult since it occurred in the relatively recent past, certainly within the last 1000 years. However, the movement of adzes from Samoa to Fiji at an earlier period cannot yet be ruled out as Best Type VI adzes, equivalent to Green and Davidson Type VI (Figure 1), occur in both early and late contexts in Samoa (Green and Davidson 1969:32). In considering the broader distribution of Samoan adzes in the Central Pacific, Best *et al.* (1992) note that there is general agreement between the dates for the exploitation of Leone stone sources in American Samoa, between the dates of 900 to 600 B.P., and the age of archaeological sites with Samoan stone artefacts in the Cook Islands and Tikopia (Best *et al.* 1992; Sheppard *et al.* 1997). However, some Samoan adzes appear to be of more recent age, possibly within the past 300-500 years, including one from Tonga and one from Tokelau (Best *et al.* 1992:65). On Tikopia a similar antiquity for adzes made in oceanic basalt is perhaps indicated by their status as lineage heirlooms (Kirch and Yen 1982:236), and a Type V adze shown by Firth (1959:Pl. V) found accidentally while digging beside an ancestral house site, suggests it could well be of late-prehistoric age.

Overall, Best's estimate (1984:401, 560) that Samoan adzes were first introduced to Fiji between 950-900 B.P. appears too early, given the majority are surface finds and only one or two flakes are indirectly dated by radiocarbon determinations from adjacent layers, which have a range of c.800 to 300 B.P. A narrower span of 650 to 450 B.P. is suggested here on the basis of the radiocarbon ages for the Ulunikoro site on Lakeba, which has the largest number of imported stone artefacts. There are nine C¹⁴ determinations

from the site leaving aside a date on turtle bone (NZ 4587), not included as poorly preserved bone protein can produce inaccurate ages (Anderson and Clark 1999:31), and a marine shell date (NZ 5181) with a modern calibrated age range. These suggest two phases of occupation. Four determinations on charcoal and marine shell have median ages of 930-800 cal B.P. and date initial use of the site (NZ 4586, NZ 4044, NZ 4585, NZ 5180). A series of four marine shell dates have a much tighter span from 640 to 480 B.P. with median ages clustering at 550 cal B.P. (NZ 4581, NZ 4582, NZ 4583, NZ 5179). Since the Samoan adzes are surface or near surface finds they might well be associated with the more recent occupation. If so, then the distribution of Samoan adzes of Best Type V and VI in Fiji would be a relatively recent prehistoric event, perhaps beginning around the mid-14th century, that involved populations in the Lau Group and islands to its north, but which was absent or had a weaker expression in west Fiji.

HISTORIC RECORDS OF INTERACTION

Historical sources can provide useful insights to the archaeological distributions of exotic artefacts especially when the time separating the archaeological event from the historic observation is relatively short. Even in such cases, though, they cannot be used uncritically, and this is true of the textual sources of inter-archipelagic contact taking place between Fiji and Tonga.

These accounts are examined, since, as far as I am aware, there are no detailed records of long-distance voyaging involving Fiji and any other archipelago but Tonga. As a guide to the processes of prehistoric interaction, this approach is in some danger of circularity, but the evidence of Tongan involvement in the Central Pacific in the past 1000 years is indisputable (Aswani and Graves 1998; Kirch 1984; Petersen 2000), and the patterns of cross-cultural contact seen between Fiji and Tonga could well have relevance for understanding several other cases of long-distance indigenous interaction in the region. Traditional histories are another important source of knowledge about trade, exchange and communication in the Pacific including Fiji (e.g. Reid 1977; Young 1982) that require their own treatment separate from the historical accounts examined in this study.

Detailed records of Tongan people and society were made in the late 18th century well before accounts of comparable quality were collected from Fiji by missionaries in the 1830s-1840s, and this source bias could elevate, by default, a Tongan view of inter-archipelagic relations that is incomplete and potentially one-sided. Second, Fiji, with a land area 26 times that of Tonga, was politically heterogeneous and events recorded in one part of the archipelago, like the exchange of goods

between Tongans and Fijians, might reflect only a very localised and specific set of inter-group relations.

In addition, a particular concern with several compilations of historical observations of Tongan interaction with Fijians is the static view of interaction from the telescoping of ethnographic accounts of contact over almost 100 years from the last quarter of the 18th to mid-19th century (e.g. Kaepler 1978a:252n.4; Lessin and Lessin 1970). One of the main problems of ignoring the historical development of interaction is the difficulty of distinguishing between those aspects which were new and caused by unique circumstances – like the expansion in indigenous warfare and trade initiated by the arrival of Europeans firearms in parts of the Pacific – and those features of interaction which, when the historical records are chronologically ordered, point to older patterns of indigenous contact by virtue of their historical continuity.

Unpacking the interaction sequence from historical records, then, should alert us to contextual regularities of the interaction process that when retrodicted into the prehistoric past suggest clues to the nature of cross-cultural contact beyond that which the archaeological record on its own can provide. Indigenous trade between Fiji and Tonga was still taking place in the 1960s (Couper 1968), representing a contact record spanning almost 200 years, but the most detailed and relevant records date from the late-18th to mid-19th century.

Fiji-Tonga interaction c.1770-1860

Several archaeological studies (e.g. Best 1984; Kirch and Yen 1982; Lilley 1988) suggest that long-distance interaction networks in the Pacific may have been inherently unstable and changes took place in several key attributes, such as the kinds of materials involved, the volume and geographic range they were transported over, as well as the social and political drivers affecting them. Dynamic change is also evident in the historical sources of contact between Fiji and Tonga. In long-distance voyaging, for example, Anderson (Beaglehole 1967a:958) in 1777 recorded that Fijians “sometimes visit Tonga and the other isles in a hostile manner and carry off their hogs and other things”. Clerke (Beaglehole 1967a:1311) in the same year reported the arrival of a canoe from Fiji that was probably crewed by Fijian men, and in 1793 Fijians were still apparently making voyages to Tonga as witnessed by Labillardière (in Langdon 1977:59). Mariner who was in Tonga from 1806 to 1810 (Martin 1981:359) claimed that no Fijian had ever ventured to Tonga or returned to Fiji except on canoes crewed by Tongans, and Williams (1982:85) in the 1840s asserted that no Fijian had ever taken their canoe beyond the boundaries of the Fiji Group.

The items of material culture involved in long-distance interaction also appear to have varied in the same period. Red parrot feathers were the main item sought from Fijians in the 1770s and the refusal to supply feathers led to Tongan skirmishing with Fijians (Cook and King 1784:375). Other items arriving on Tonga from Fiji included decorated bark cloth (*masi*) (bark cloth is referred to here as either *masi* [Fijian] or *tapa* [Tongan] according to the bark cloth's place of origin) mats, the dog and beaded baskets (Bayley in Kirch 1984; Beaglehole 1967a:958-959), although Anderson believed the baskets to be locally made (Beaglehole 1967a:933). Unidentified ornaments, that might have included whale bone breastplates, were also brought to Tonga, and it might be significant that neither Cook nor his associates recorded the distinctive whale teeth ornaments that soon after were the main "currency" of exchange within Fiji and between Fiji and Tonga (Im Thurn and Wharton 1967:152, 174; Martin 1981:190). Anderson mentions Fijian clubs, spears and pottery on Tonga, but it is unclear whether these artefacts accompanied Fijians to Tonga or were sought after by Tongans (Beaglehole 1967a:958-959). Kaeppler (1978b) suggests that wooden head rests and clubs from Fiji were present in Tonga as trade goods, and in the Forster collection from Tonga there are clubs similar to the Fijian *vunikau/waka*. Fijian canoes were not specifically mentioned in the accounts but the Tongan *kalia*, modeled on (or in fact) the Fijian *drua*, was drawn in the 1770s (Haddon and Hornell 1975:272-273).

It is not known what items Tongans exchanged for red feathers and other items but the next significant snapshot of contact is from Mariner's 1806-1810 stay in Tonga. Interestingly, Mariner does not mention red feathers as the main reason for travelling to Fiji, and it was sandalwood from western Vanua Levu used for scenting coconut oil and Fijian canoes that were the most desirable items. Sandalwood from Vanua Levu was exchanged for European nails, axes and chisels and whale's teeth, but before metal goods were available whale's teeth, decorated bark cloth, sail mats, sinnet and stingray spines to point spears were given. Fijian canoes were taken by force or paid for in unspecified goods and services (Martin 1981:359).

By about the 1840s, both the volume and range of items exchanged between island groups had dramatically increased. Tongans depended on Fiji for their canoes, spars, sail mats, pottery and mosquito curtains, and consumed large amounts of sinnet and food. In exchange Fijians received whale teeth, inlaid clubs, small white cowries, tapa cloth, axes and muskets, together with the loan of canoes and crew for transport and warfare (Williams 1982:94).

Interaction between Fiji and Tonga from c.1770 and 1850 seems to have followed an upward trajectory that is not adequately described by the static ethnographic compilations of cross-cultural contact. The increase appears due to the intensification of the "civil war" in Tonga from 1837 on and the struggles of Bau against Cakaudrove and Rewa in Fiji, which resulted in the rapid increase in the production of large double canoes, and led to the expansion of traditional systems of exchange (Reid 1982:38). Not only did the frequency of long-distance interaction increase with higher canoe production but the size of double canoes also grew, and hence the volume of people and material goods transported per voyage also increased. Whereas the largest canoes, whether Fijian or Tongan, recorded by King and Anderson in the 1770s were no more than 70 feet long and able to transport from 30 to 70 people (Beaglehole 1967a:938, 1367), double canoes more than 100 feet long and able to carry up to 200 warriors were not uncommon by the 1840s (Jackson in Erskine 1853:453; Waterhouse 1976:228; Wilkes 1985:167).

The intensification of interaction seen in the historical sources does not mask several long-term features of contact that are relevant to distributions of archaeological artefacts. First, Fiji was clearly a resource frontier for Tongans, supplying natural products such as red feathers and sandalwood, as well as crafted items including *masi* cloth, and hardwood items ranging in size from bowls and clubs to large canoes. In exchange for these goods, for which demand on an individual basis was constantly in flux, Tongans were innovators searching for new items to supply. Thus, whale-tooth ornaments and particularly metal tools were supplied by Tongans for Fijian sandalwood, with Mariner (Martin 1981:190) noting the dynamics of the exchange: "Formerly they [Fijians] would give a considerable quantity [of sandalwood] for a few nails, but now they demand axes and chisels, and those of the best quality...what renders the matter still worse, is, that the Fiji people, demanding a greater quantity of [metal] axes and chisels for a given quantity of the wood, these implements are growing very scarce at the Tonga Islands, and plentiful at Fiji". The introduction of new goods as exchange items, particularly items that were simple to transport, shifted the balance of trade temporarily in favour of Tongans, but as Fijian demand increased, the ratio of exotic goods to Fijian products would begin to even out and encourage Tongans to search for new exchange products. The use of Samoan adzes from Tutuila as trade items in Fiji, at least as early as 600 B.P., would therefore represent what Leach (1993:41) has called a "new and desirable fashion", whose popularity and utility while instituted by Tongans was eventually subject to devaluation at the hands of Fijians.

Second, it seems highly probable that the Samoan adzes were prestige goods as the principal Fijian goods sought by Tongans in the historic era were all highly valued. On the Tongan side the red feathers and sandalwood sought in Fiji were primarily for chiefly consumption. Cook (Cook and King 1784:267, 384) noted the importance of red feather bonnets as chiefly regalia that were so valuable that the European visitors were unable to purchase any and only Cook was presented with one. Vason (1810:161) recorded the preparation of scented coconut oil in Tonga using Fijian sandalwood which was "only used by the principal chief". Wider use of these items by the upper levels of Tongan society is suggested by the addition of sandalwood dust as a flavour additive to *kava* (Bays 1831:126) and a red-feather decorated apron in the Forster collection (Kaepler 1978b). Even the dog was a chiefly item according to King (Beaglehole 1967b:144-145) and large canoes were particularly associated with chiefs in both Tonga and Fiji (Beaglehole 1967a:1367; Wallis 1967:160).

We do not know whether Tongans gave Samoan stone adzes to Fijians in exchange for any of these items (see below), but the first iron tools introduced to Fiji as payment for sandalwood were given high status, being adze hafted and named after the Tongan chief who brought them (Williams 1982:94). The European sandalwood traders built on the Tongan pattern of interaction, not only learning from Tongans about the Fijian sandalwood source on Vanua Levu and how to reach it (Derrick 1950:120 fn.9), but also which customary goods could be exchanged. These included plane irons that were hafted like adzes, along with the ubiquitous whale teeth (Bays 1831:110; Im Thurm and Wharton 1967:143, 174; Wilkes 1985:347). Historical accounts of interaction, therefore, are not inconsistent with the view that exotic stone adzes could once have been an acceptable exchange good, like metal tools in the proto-historic era, for prestige Fijian goods. This raises several more speculative questions about what items might have been traded and whether the interaction involved Tongans or Samoans.

DISCUSSION AND CONCLUSIONS

As yet the explanation for the presence of Samoan adzes in Fiji is limited to three straightforward propositions. Best (1984:658) identifies Tongan influence at a fortified site in Lau with Samoan adzes, suggesting that Samoan adzes could have been taken to Fiji by Tongans. Clark and Cole (1997:118) also nominate Tongan "middlemen" but note the alternative of direct contact with Samoans. Finally, Geraghty (1993:368-369) suggests that the movement of the Tongafiti people from Matuku island in east Fiji to Samoa revived a direct link between the two archipelagos, facilitating the supply of superior Samoan adzes to Fiji.

There is no definitive way to identify which of these plausible scenarios, or any other, is correct, but an argument favouring Tongan participation is developed below.

The most significant aspect of the distribution of the Samoan adzes in Fiji is the focus on eastern Fiji. This set of islands is the closest to Tonga and based on its proximity and windward position could be expected to have had greater contact with Tonga than other parts of Fiji, suggesting that Tongans were responsible for introducing Samoan adzes to Fiji at c.600 B.P. For this to be the case there should be a reasonable correlation between the geographic knowledge of Tongans, which would be expected to be comprehensive for east Fiji and relatively low for west Fiji – if Tongan interaction centered on the eastern islands – and the archaeological distribution of imported adzes. The earliest information which can be used to examine this proposition is in the list of 95 island names, collected by Anderson during Cook's 1777 visit to Tonga and recently published with their modern referents assigned by Geraghty (1994).

Figure 2 shows the location of the 14 islands and places in Fiji that were recorded by Anderson except for the small adjacent islands of Tuvanaicolo and Tuvanaira in the far south of the archipelago. Two locations, Qilaqila on Vanuabalavu and Nukubasaga Island, could refer to other places but the remainder are identified with greater certainty (Geraghty 1994:Table 2). In the case of Rewa, Bau, and Cakaudrove it is unclear whether it is the place/area, or the regional political entity, that is referred to, and they have therefore been marked differently in Figure 2.

If the list is representative of the locations in Fiji known to Tongans then a focus on eastern Fiji is demonstrated, though there is little doubt that the major chiefdoms of Rewa and Bau in eastern Viti Levu were also known. When the location of the Fiji islands with Samoan adzes is plotted on Figure 2, there is a close match with the locations known to Tongans in the 18th century. It is not unreasonable, therefore, to suggest that a Tongan presence in eastern Fiji predates 1777, and might realistically extend further back in time, perhaps to c.600 B.P. Of course Samoan adzes have been found in many other islands outside of eastern Fiji (Best *et al.* 1992) but the level of Tongan participation in this wider dispersal cannot as yet be measured.

If Tongans were the dispersal vector for Samoan adzes, which were brought in as exchange valuables for use in eastern Fiji, then the records of more recent interaction could hint at the resources Tongans sought in the region's small islands. In the south of Lau on the limestone islands of Fulaga, Ogea, Namuka and Kabara

stands of the hardwood *vesi* (*Intsia bijuga*) were used to make large double canoes (*drua*) and smaller wooden items, like head rests, bowls and clubs. *Vesi* wood was also present on the accessible windward coast of Vanua Levu and Taveuni, and parties of Tongans were observed making canoes on Fulaga, Kabara Namuka and Somosomo on Taveuni (Derrick 1951:316; Wilkes 1985:157; Young 1982:39) and were encountered in many parts of east Fiji (Dumont d'Urville 1987:116; Wilkes 1985:253). Lakeba was the political and economic hub of this interaction and able to provide surplus food supplies from the fertile volcanic islands, such as Lakeba, Moce and Cicia, where the cultivation of wet root crops generated a surplus to feed parties of canoe builders and Tongan visitors (Haddon and Hornell 1975:328; Young 1982). Erskine (1853:170), for instance, records meeting a Tongan building a large double canoe at Somosomo who had traveled to Lakeba for provisions.

To summarise, the archaeological distribution of Samoan adzes parallels the Fiji islands known to Tongans in 1777, and the approximate distribution of suitable *vesi* hardwood sources sought for canoes and other wooden items by Tongans in the 19th century. Thus, the historical record supplies inferential evidence of interaction between Fiji and Tonga that is substantially older than the mid-18th century date proposed by several authorities (e.g. Derrick 1950; Lessin and Lessin 1970) for the start of inter-archipelago exchange. A link between the *vesi* timber sources of east Fiji and the Samoan adzes is considered to represent the construction of large canoes made in durable *vesi* hardwood. The presence of Samoan basalt artefacts on the resource-poor limestone islands of southern Lau, known primarily in historic times for their hardwood forests and canoe building, is a notable association, regardless of whether Tongans, Samoans or Fijians moved the adzes. Firth (1959) recorded that ritual adzes on Tikopia, including adze heads made in imported stone, were used in chiefly canoe-building ceremonies and some of the larger Type VI adzes found in Fiji might have had a similar purpose (see Leach 1993). It is difficult to estimate the relative value of Samoan adzes along a ceremonial-utilitarian spectrum without a detailed study, including use-wear and morphological evidence of adze function, but historical sources support a prestige role for the material items involved in inter-archipelagic exchange.

An active Tongan presence in east Fiji at c.600 B.P. for the purpose, suggested here, of obtaining large canoes suitable for long-distance voyaging might be linked to the increasing political unification within the Tonga Islands, or to a phase of Tongan expansion beyond its shores. Oral traditions suggest that during the 14th to 15th centuries Tongan political influence within the archipelago had a centripetal tendency, and also a centrifugal aspect that

reached to include, minimally, the small islands of Rotuma, Futuna and 'Uvea (Aswani and Graves 1998; Sand 1993).

The placement of small groups of Tongans, by drift or from deliberate voyages of colonisation, on even more distant lands such as Tikopia, Anuta, Niue, Tuvalu and New Caledonia (Dillon 1829:112; Erskine 1853:373; Gifford 1929) hints at a much wider Tongan involvement in the Pacific. Current archaeological data, particularly that relating to the timing and impact of Tongan arrival, as yet contributes little compared to the detailed and easily accessible information contained in traditional accounts (e.g. Gifford 1929). It is also necessary to bear in mind that reference to "Tongan" arrival in historical and traditional accounts need not refer exclusively to people from Tonga, since "tonga" is also the name of a southerly wind, that could be applied to people who arrived from the south (Davenport 1964:137).

As the record of prehistoric interaction in the Pacific slowly accumulates emphasis has begun to move from a necessary preoccupation with methodological concerns underpinning issues of characterisation and artefact origin, to a concern about the cultural implications of external contact and its effect on the historical development of island societies (e.g. Kirch 1986:34). As recognised by Davidson (1978), the proximate archipelagos of the Central Pacific are an important region in which to examine the effects of inter-archipelagic contact, whether in terms of the older migration-diffusion debate or the current discussion on the virtues of phylogenetic and reticulate accounts. For prehistorians this will entail qualitative as well as empirical perspectives on the nature of inter-archipelagic voyaging, including inferences drawn from ethnohistorical and traditional accounts. This paper suggests that the structural regularities of inter-archipelagic communication extracted from the historical observations of indigenous cross-cultural contact provide a useful framework for interpreting archaeological distributions of artefacts dating to the recent past in the Central Pacific.

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