Ancient Fiji: Melting Pot of the Southwest Pacific

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Abstract:
Like the other archipelagos of Remote Oceania, Fiji was colonized by Lapita voyagers approximately 1000 BC. Over the subsequent three millennia, Fijian populations underwent considerable change, resulting in the unique cultural, biological, and linguistic characteristics that differentiate Fiji from populations in both Polynesia to the east and Melanesia to the west. This article summarizes the Lapita archaeology of the archipelago and later culture history including change in ceramic horizons, the spatial scale of interaction within the archipelago, and potential migrations into from other island groups. The rise of Fijian chiefdoms is also examined with these polities closely linked to increasing competition, fortifications, and defendable agricultural resources. Finally, artefactual, linguistic, and biological data characterizing Fijian populations are examined and it is concluded that the generalization of Fiji as “not quite Melanesian, not quite Polynesian” can best be explained within a cultural transmission framework that separates analogous and homologous similarity.

Keywords: Fiji, Lapita, migration, Melanesia, Polynesia, fortifications, chiefdom, cultural transmission
Every culture-area map of the Pacific places Fiji (18,274 km$^2$ of land) in Melanesia, just outside the western boundary of Polynesia, and a few maps even exclude the Fijian islands from both Polynesia and Melanesia by placing the group within its own box or boundary. While cultural-biological-geographic categories such as Melanesia can be useful short-hands, they are generalizations (Clark, 2003, Terrell, 2012) that may mask much variation of interest to archaeologists. This is certainly the case for Fiji, where the history of archaeological, linguistic, and biological research suggests that over three millennia of human occupation, these islands’ inhabitants maintained connections to both the east and the west, moved throughout the archipelago, spoke multiple closely related languages, and developed a material culture and social institutions neither typically Melanesian nor Polynesian, a history Kirch (2000:156) captures by describing Fiji as a “between place”.

Fiji’s characterization as neither wholly Melanesian nor Polynesian is more interesting when considered in light of the original colonization of Remote Oceania by Near Oceanic populations with Lapita pottery (see Terrell’s essay). These groups arrived in Vanuatu and the Reef/Santa Cruz Islands, New Caledonia, Tonga and Sāmoa, as well as Fiji, approximately 3000 years ago (see Rieth and Cochrane essay) sharing a similar material culture including intricately decorated Lapita pottery, lithic tools, and shell ornaments (Green, 1995), likely speaking a series of closely related languages or dialects (see Pawley’s essay), and biological characteristics (including those of human commensal species), indicative of demic biological variation, multiple population movements from Near to Remote Oceania or both (Kirk et al., 1987, Lum et al., 2002, Matisoo-Smith and Robins, 2004, Pietrusewsky, 1997, Wollstein et al., 2010). So while the original inhabitants of Fiji were part of a “community of culture” (Golson, 1961) spread from the Reef/Santa Cruz Islands in the west to Samoa in the east, at some point populations in the east, Samoa and Tonga, became more Polynesian, while western populations, New Caledonia, Vanuatu and
the Southeast Solomons, became (or stayed) more Melanesian, and Fijian populations, geographically in the middle, became clearly not one or the other.

This chapter first examines the culture history of Fiji, focusing on the archipelago’s colonization by populations with Lapita pottery and the subsequent three millennia of ceramic variation that archaeologists have used to mark chronological change. The middle section looks at three research themes that arise from Fiji’s culture history, interaction and mobility in the mid-sequence, increasing social complexity and competition, and ethnohistoric and historical archaeological perspectives. Finally, the chapter explores the perennial question of Fiji’s between-ness (see Burley 2013) and offers a research program to resolve it.

FIJIAN CULTURE HISTORY

Lapita Colonization of Fiji

Populations from the west, part of the movement of groups from Near to Remote Oceania beginning around 3000 cal. BP, discovered Fiji at approximately the same time as first landfalls were being made in Vanuatu, the Reef/Santa Cruz Islands and New Caledonia. (Sheppard et al., 2015). The earliest securely dated site in Fiji is Matanamuani (VL 21/5) on Naigani Island with charcoal (identified as grass, reed or palm frond) from a fire feature dated to 3070-2770 cal. BP (2σ) (Irwin et al., 2011). Dating analyses from several other sites throughout the archipelago have returned similar or slightly later earliest ages (all 2 σ), although not all of these age ranges are from feature contexts or material identified to taxa: 2866-2771 cal. BP for Bourewa, southwest Viti Levu (Nunn and Petchey, 2013); 2861-2748 cal. BP at the Tavua Village site in the Mamanuca Islands (Cochrane et al., 2011); 3140-2960 cal. BP for Vorovoro Island off the north coast of Vanua Levu (Burley, 2012); and 2922-2719 cal. BP from Qaranipuqa rock shelter on Lakeba Island in eastern Fiji (Best, 1984a). All of these date ranges are associated with Lapita pottery deposits (Figure 1).
The Lapita assemblages in Fiji are similar to those found throughout Remote Oceania. Often these deposits are located on coastal beach ridges (Dickinson, 2014), sometimes on smaller islands off the main land masses of Viti Levu and Vanua Levu. Nunn and colleagues have reconstructed the paleogeography of several Fijian Lapita sites noting the likely presence of reef resources and beaches with canoe landings in proximity (e.g., Nunn et al., 2007, Nunn and Heorake, 2009). Similarly, Morrison and colleagues (in press) undertook a detailed landform reconstruction of the Tavua Village Lapita site in the Mamanuca Islands off Viti Levu’s west coast. Today that Lapita deposit is 1 m below the surface behind the contemporary coastal village. Through an extensive coring program coupled with sediment analyses, radiocarbon dating, topographic mapping and geological simulation, Morrison and colleagues determined that the Lapita-age settlement likely existed on a sand spit or small barrier islet safely above the mean high water mark, and with a lagoon environment inland that would have provided subsistence resources in addition to the fringing reef. Over the course of 1400 years the sand spit prograded, eventually closing off any potential tidal opening and leading to sediment infilling of the back beach lagoon areas.

At the Tavua Village Site, Lapita age populations subsisted on a variety of marine fauna including shellfish, reef and benthic fish, and turtle. Terrestrial animals make up a much smaller percentage of total specimens recovered from the same deposits and include the Polynesian rat (*Rattus exulans*) spiny rat (*R. praetor*) and iguana (*Brachylophus* sp.). Bird bones were also identified, but in relatively small proportions, as is common for archaeological sites on the small islands of the Mamanuca and Yasawa groups to the west of Viti Levu. A focus on marine animal subsistence is a pattern found on several small islands in Fiji (Jones et al., 2007, Burley, 2012) and likely influenced initial settlement locations (Nunn, 2009). Other Lapita age faunal assemblages in Fiji contain these taxa and others such as fruit
bat (*Pteropus* sp.), chicken (*Gallus gallus*), and several species extirpated or driven to extinction including crocodilians (*Volia athollandersoni*), a megapode (*Megapodius alimentum*) and other birds (Worthy and Anderson, 2009). Of the domesticated species that variably accompanied Lapita-age voyagers throughout Remote Oceania--pig, dog and chicken--only chicken is incontrovertibly associated with Fijian Lapita deposits, although the other species appear at later times (Matisoo-Smith, 2007).

Horticultural plants brought by Fiji’s early colonists are also variably distributed across the archipelago. At the Bourewa Lapita site, Horrocks and Nunn (2007) identified microfossils (e.g., starch grains, xylem cells) of introduced taro (*Colocasia esculenta*) and lesser yam (*Dioscorea esculenta*). Corroborating support for human transportation of horticultural plants is provided by the presence of likely introduced land snails in Lapita age deposits of the Yanuca site on Viti Levu (Hunt, 1981). Such snails prefer anthropophilic habitats provided by horticultural plants. Additional data on paleoflora is provided by a series of sediment cores excavated across the archipelago (summarized in Hope et al., 2009) that show the effects of human arrival including a dramatic decrease in sago palm (*Metroxylon* sp.), as well as increased ferns, grasses and charcoal particles, all likely associated with removal of the native forest and in some areas swidden gardening (Roos et al, in press).

Lapita-age material culture in Fiji is, unsurprisingly, dominated by ceramics, both decorated and plain. The decorated Lapita ceramics vary with some assemblages containing a great many decorated sherds and complex motifs, and other assemblages containing small amounts of decorated sherds with simple motifs. Assemblages with abundant decorated sherds (e.g., Nunn et al., 2007) often include the same motifs found in Lapita assemblages of the Bismarck Archipelago, Vanuatu and New Caledonia (Anson, 1983, Best, 1984a, Mead et al., 1973). These similarities are a product of cultural transmission amongst the colonizing populations of Remote Oceania and their immediate homelands in Near Oceania. The great
majority of the decorated Lapita sherds in Fiji come from locally manufactured vessels indicating the transmission of ideas without the movement of pots. (Clark and Kennett, 2009, Kennett et al., 2004). Lapita assemblage vessel forms in Fiji include bowls, some with carinated shoulders, flat-bottom dishes, globular pots with and without carinated shoulders, bottles with restricted openings, and, more occasionally, pot stands. The diversity of vessel forms varies across sites and depends upon assemblage completeness (see e.g., Burley and Dickinson, 2004). In addition, Fijian Lapita material culture includes shell ornaments similar to those found in Lapita deposits throughout Remote Oceania, such as shell rings and plaques, long-units or cylinders of shell with facets along their length and perforations at either end, hammerstones, coral abraders, metamorphic stone adzes, red ochre, obsidian, and flakes and cores of basalt, chert, and quartzite.

Ceramic Chronology

Changes in Fijian ceramics after colonization have been traditionally summarized in a number of periods, with the first cultural chronology (Gifford, 1951) simply using the terms Early, Middle, and Late Periods. Gifford’s excavations did not recover any Lapita ceramics, but a few years later with Shutler in New Caledonia, he would be the first archaeologist to excavate Lapita pottery. Gifford’s periods were refined by Green (1963) with the addition of Lapita ceramics from Sigatoka, pre-dating Gifford’s early period. Green defined four phases for Fiji, beginning with the Sigatoka Phase (~2650-2050 BP) determined by the presence of decorated Lapita ceramics. This was followed by the Navatu Phase (2050-850 BP), comprising carved-paddle impressed ceramics along with ceramics with incised, appliqué and other surface modifications. The Vuda Phase (850-100 BP) follows with a decrease in paddle impressed ceramics and an increase in incised, appliqué, and finger-pinching surface modifications. Finally, Rā Phase (100 BP – present) ceramics have increasingly complex incised and appliqué patterns and include new vessel forms, such as double-spouted jars.
While Green’s four ceramic phases have been modified, these units are still referenced in almost all subsequent work. Figure 2 displays how archaeologists have both expanded the defining ceramic attributes of Green’s phases, and changed their temporal boundaries. For example, Best (1984b) produced a fairly extensive reworking of Green’s chronology, as indicated by shading in Figure 2, with Periods 1a and 1b equivalent to Green’s Sigatoka Phase. These periods, and the synonymous Early and Late Lapita of Burley (2003), divide Lapita assemblages into those that have complex dentate decorations and those that have simple dentate designs. Although Green (1963) originally described the Navatu phase as stemming directly from the Sigatoka phase, some archaeologists in Fiji now suggest that ceramic change is more accurately described by noting an additional period before the Navatu Phase, the Fijian Plainware phase (Best 1984, Clark, and Burley 2003). These assemblages have high proportions of undecorated vessels, some slipping, and wipe-marks around the collar made with a fibrous material, and a few other surface modifications. Plainware assemblages typically consist of only one or a few jar and bowl forms, mostly differentiated by minor rim variations (Clark 1999:221). Clark (1999:226) states that carved paddle-impressed wares belong to these assemblages and Best agrees, but confines the appearance of carved paddle impressing to the end of the Plainware period (Best, 2002:29). Burley (2003:239) also notes that small amounts of punctuating and other decorative techniques occur in the Plainware assemblages in western Fiji. Burley and Best argue that the Fijian Plainware period ends with major ceramic changes. The transition between Fijian Plainware and the Navatu phase is described as “the only major ceramic change in the Fijian sequence” (Best 2002:28; see also Best 1984:654-655), and “so abrupt that alternative explanations [besides ethnic group replacement] are difficult to fathom” (Burley 2003:312).
While Best and Clark place the Plainware-Navatu transition at different times (Figure 2), their difference in timing may be a result of the slightly different period definitions each archaeologist employs. Note, for example, that the minor change in Best’s Period III (indicated by hashed line) occurs at a similar time as Clark’s Mid-Sequence to Navatu Phase transition. If Best admitted carved paddle-impressing into his Period II definition then he might re-conceive his Plainware-Navatu transition at essentially the same time as Clark’s (i.e., about 1800 BP). Best does identify some new ceramic variants at this time as indicated by the dashed line at about 1700 BP in Figure 2 (Best 2002:17). A related, but generally unremarked (with the exception of Hunt, 1986) problem with Fijian ceramic periodization schemes is that they are typically constructed without an explicit idea of the processes that explain ceramic variation and therefore also without clear reasons for choosing particular dimensions of ceramic variation to define periods. This is linked to a problematical lack of general theory with ramifications for how we explain variation in the archaeological record. More on this below.

The Navatu phase in Fiji is generally defined by carved paddle-impressed ceramics incising, appliqué, and finger-pinched decoration, often executed on the shoulders of jars. Archaeologists also note that a new vessel form originates in the Navatu phase, an everted neck cooking pot, typically called a kuro. Burley (2003:238) has identified additional new vessel forms in his Navatu phase ceramics from the Sigatoka Dunes including “several new jar and bowl types, handled pots, flattened trays, and spouted vessels”.

Both Best (2002:30-31; 1984:655-656) and Burley (2003:312, and see Burley and Edinborough, 2014, Burley, 2013) suggest that ceramic change at their Plainware-Navatu transitions is possibly a result of a new human population inhabiting the southern Lau Group, or the Sigatoka Sand dunes, respectively. Clark (1999:221) also identifies “a relatively sharp break” in ceramic similarity at c. 1800 BP. He, however, does not attribute this to different
human populations, but rather tentatively to low levels of social interaction and changing
economic patterns from c. 2300 to 1900 BP (Clark 1999:219-228).

The Vuda Phase was conceived by Green (1963) to begin after Navatu and last until the
time of sustained interaction between Fijians and Europeans in the early 19th century.
Since Green, archaeologists have placed the beginning of the Vuda Phase at different times
(see Figure 2) and it seems likely that ceramics described as Vuda Phase increase in
frequency at different times in different parts of Fiji. Vuda Phase assemblages exhibit a
gradual increase in the frequency of incised surfaces and a concomitant decrease in paddle-
impressed surfaces over time. Frost (1979:68) notes that the Vuda Phase may be more readily
defined by a “sudden decrease” in paddle-impressed surfaces than an increase in incised
motifs, as incising also occurs in assemblages by at least 1700 BP. Vuda phase assemblages
also exhibit punctate (i.e., end-tool produced) surface modifications, and appliqué. A new
vessel form is also present in Vuda phase assemblages, the dari or flared-rim bowl (Best
1984:293). The origin of the Vuda phase has been linked to population immigration to Fiji
from the west. Frost (1974) detailed this position in his ceramic research linking the
appearance of Vuda ceramics to the rise of fortifications on Tavenui Island in northern Fiji.
Frost argued that Vuda ceramic decorations were imported by people from Melanesia
(particularly Vanuatu) and that the arrival of this immigrant population also increased
competitiveness stimulating the rise of fortified occupations. The hypothesis that Vuda
ceramics and fortifications are linked to a migrating population from the west has been
largely dismantled by subsequent analyses (Babcock, 1977, Bedford and Clark, 2001) and
on theoretical grounds (Hunt, 1986).

The Rā phase is the final ceramic period identified by archaeologists in Fiji and is
generally noted by ceramics that have increasingly complex incised and appliqué patterns.
Rā-phase ceramics also include new vessel forms, such as double-spouted jars. Much of the
increased variation in decoration and new vessel forms in the Rā phase is attributed to increasing contact between Fijian and European populations. Archaeologists recognize the Rā phase as early as 450 BP (Bedford and Clark, 2001:68) and often suggest it continues to the present as traditional ceramics are still made in Fiji, although predominantly for sale to tourists.

**CURRENT RESEARCH PROBLEMS IN FIJIAN ARCHAEOLOGY**

**Cultural Change in the Post-Lapita Mid-Sequence**

Fiji’s ceramic chronology is the foundation upon which all cultural change over the last three millennia has been based. As noted above, archaeologists have proposed population movement into or within Fiji as an explanation for ceramic changes heralding the beginning of both the Navatu and Vuda Phases. As those examples indicate, Fijian post-Lapita archaeological research has often focused on questions of population movement and interaction between different populations, although not exclusively so.

That post-Lapita Fijian populations were to some degree mobile, or at least maintained connections with distant groups or areas, is certainly the case as demonstrated by the movement of ceramics throughout the archipelago and by the appearance of inland occupation deposits beginning by about 2000 BP at Tatuba Cave in the Sigatoka Valley (Field, 2004). The cave system at Tatuba covers approximately 420 m of linear distance and is located over 50 km inland. Cultural deposits in the cave contain marine shell and marine fish bone, indicating interaction with coastal populations or movement to the coast (Field, 2003:132-154). The cave was occupied continuously over the last two millennia and is well placed for access to productive agricultural lands. The use of inland regions of the Sigatoka Valley is also recorded in the coastal depositional record at the valley mouth. Geoarchaeological investigation of the Sigatoka coastal dunes and paleoenvironmental cores suggests that the dunes developed after 1500-1300 BP generated, in part, by an increased
sediment load in the Sigatoka River, itself partly caused by inland forest clearing and disturbance that may have begun as early as 2000 BP (Anderson et al., 2006, Dickinson, 1998).

Movement in post-Lapita Fiji is also indicated by ceramic similarities across the archipelago. First, the ceramic surface modifications that define Fiji’s phases, such as different forms of carved paddle-impressing, incising, and finger-pinching are the same across the archipelago. As this similarity is likely stylistic, (Dunnell, 1978), with the spatial and temporal distribution of forms explained by cultural transmission, it suggests extensive movement of ideas or people or both, at least at an intensity high enough to maintain this similarity in ceramic surface treatments. (see also Clark, 2000). Second, geochemical and petrographic analysis has documented the transfer of ceramics, which implies population interaction or movement over three millennia. Dickinson’s (2006) summary of ceramic petrographic work in Fiji suggests relatively frequent movement of ceramics, as he notes the “temper evidence for prehistoric ceramic transfer among multiple islands within the integrated cultural sphere of Fiji, including the Lau Archipelago, is more extensive than for any other island cluster of comparable size within Pacific Oceania” (Dickinson, 2006). After examining the geochemical and petrographic data from analyses of relatively large ceramic samples in western Fiji, Cochrane and Rieth (2015) concluded that until about 600 BP, typically 5% of these assemblages were comprised of non-local ceramics, suggesting sustained, if low-frequency, intra-archipelago interaction, that continued from colonization until the Vuda phase (cf. Clark and Kennett, 2009).

In an effort to generate a fine-grained picture of interaction in one part of Fiji, Cochrane and Neff (2006) used LA-ICP-MS to analyze the geochemical constituents of 260 sherds in 14 sites, distributed across the 2700 year sequence of the Yasawa Islands. They found that for the first 1700 years of occupation sherd clays at these sites likely derived from
the Yasawa Islands, but also the Mamanuca Islands to the south. About 1000 cal. BP, however, there was a relatively abrupt contraction in the spatial scale of interaction, so that the Yasawa Islands sites contained a significantly greater proportion of sherds from Yasawa Islands clays and not clays from the Mamanuca Islands. The timing of this contraction in interaction, at least as measured by the distribution of sherd clays, is associated with evidence of environmental and subsistence changes in the Yasawa Islands (Morrison and Cochrane, 2008), and later construction of defensive sites (Smith and Cochrane, 2011), that suggest increased competition between human groups may explain spatial changes in interaction.

Clark and Kennett (2009) have alternatively argued that the Yasawa Islands sherd geochemical data may reflect the post-1000 cal. BP specialized production of ceramics in the Yasawa Islands, with the ceramics distributed out from this production locale. They also suggest that such specialized production of various products occurred throughout the Fijian archipelago and formed a foundation for the later development of Fijian chiefdoms. While there is historical evidence of specialized production of ceramics and other items around Fiji, provenance research on post-1000 BP ceramics in the Mamanuca Islands is need to evaluate Clark and Kennett’s thesis.

Changing Social Complexity and Competition in Post Lapita Fiji

Perhaps counterintuitively, the post-Lapita interaction across Fiji documented by Clark (2000) and Dickinson (2006) may also have been occurring at a time of increasing human competition. The distribution of fortified sites in Fiji has been extensively documented for Viti Levu by Parry (1977, 1982, 1987, 1997) through stereoscopic aerial photo analysis. Settlements surrounded by one or more annular ditches and embankments with palisades were constructed on the alluvial terraces of Viti Levu’s river valleys in large numbers. Parry argues that these settlements were constructed to defend the agricultural lands surrounding them. Other fortified sites were constructed in difficult to access locations such
as hilltops and employed natural barriers, such as cliffs, as part of their defenses (Figure 3). Although Parry’s chronological understanding of the development of fortified sites was limited (no excavations were carried out), he surmised that the agriculturally best areas would have been settled first with more marginal lands occupied later (Parry 1982).

[insert Figure 3 here]

Since Parry, several other archaeologists have examined fortified sites throughout Fiji, and interpreted their origins, form, and distribution in a variety of ways including as an outcome of chiefly competition (Rechtman, 1992), as a response to external threats (Frost, 1974), or both (Best, 1993). Field has conducted the most thorough examination of fortified sites in Fiji with her studies (1998, 2004, 2005) concentrating on the Sigatoka Valley of central Viti Levu. Through a combination of GIS analyses and estimates of environmental productivity, she demonstrated that the origins and distribution of continuously occupied fortified sites in the valley is explained by the productivity of agricultural lands and their ease of defense as predicted by human behavioral ecology models. Other fortified sites were used as refuges or part-time defensive locations in times of resource stress. Field notes that not until about 500 years ago were the majority of ring-ditch fortifications in the valley continuously occupied and that this coincides with the putative rise of chiefdoms in Fiji and the transitional period between the global Little Climatic Optimum (LCO) and Little Ice Age (LIA), a time when weather patterns were too unpredictable to support previous levels of rain-fed agriculture. She suggests that “that emergent social complexity, increased regional interaction, and intra-archipelago exchange may have been further stimulated in Fiji by the upheavals of the LCO/LIA transition” (Field 2004:95).

Although Field is one of the few archaeologists to propose Darwinian mechanisms to explain changes in social complexity in Fiji, other scholars have also examined the different social statuses of people in the past. While there is not much evidence of great variation in the
treatment of the dead, burials in Fiji has been interpreted to reflect status variation, as is done in other areas of the world. A series of over 50 spatially and temporally related burials at the Sigatoka Dune site, likely dating to around 1600 cal. BP (Burley, 2005), is the earliest deposit in Fiji with a large number of interments. There are differences in the elaboration of coral burial cairns at this cemetery, with more elaborate cairns placed at the highest elevations and these are interpreted as individuals of higher status (Best, 1989, Visser, 1994). Field (2003) also reports large, communally built, earth burial mounds for high status individuals at defensive settlements in the Sigatoka Valley.

Additionally, the reconstruction of past diets has been used to infer status differences amongst Fijians. For example, the isotopic diets of eight protohistoric adults interred on Cikobia island have been interpreted as resulting from a focus on taro, yams, fish and turtle. Comparison of these diets to the inferred diets of the general population may indicate the higher status of these individuals (Valentin et al., 2006; see also Field et al. 2009). Jones (2009; and see Jones and Quinn 2009) has also correlated subsistence patterns with differential statuses. She notes that on Nayau in the Lau islands, many oven features dating from the mid- to late-prehistoric periods (Navatu and Vuda phases) contain a higher proportion of fish cranial bones relative to other fish bones. Since fish crania do not have as much meat as other parts of a fish, and they would not be expected from optimality models to be high-ranked food items, Jones interprets their prevalence to consumption by higher status individuals for which the heads of fish are socially appropriate in contemporary Fiji (Ravuvu, 1983).

There is much greater evidence of complex polities or chiefdoms (Sayes, 1984), with multiple status levels and specializations, provided in the ethnohistoric record of early westerners in the islands (e.g., Williams, 1982 [1858]) as well as in the distribution of Fijian communalects or speech communities, particularly a long-lived linguistic prestige area
comprised of several communalects centered on southeastern Viti Levu (Geraghty, 1983b:383), an area also known ethnohistorically as a center of political power (Scarr, 1984). A key question asked by researchers is what process explains the origins and development of chiefdoms in the archipelago. Field’s proposal, summarized above, is that competition over agricultural resources is an important correlate of changing social complexity. In support of this Derrick (1968:55) notes that the principal chiefdoms encountered at European contact were all on the windward coasts, regions with greater rainfall, and presumably greater agricultural potential, relative to the leeward coasts. Clark (2000, Clark and Anderson, 2009b) agrees that resource competition is important, but notes that changing interaction networks and economic specialization also contributed to increased social and political complexity over the last millennium of Fiji’s prehistory.

**Outside Influences**

Prior to extended interactions with Europeans beginning in the 19th century, parts of Fiji were intertwined politically and economically with Tonga, as were parts of Sāmoa (see Burley and Addison essay). Probably by about 500 years ago Tongan populations visited, and sometimes resided in Viti Levu, parts of Vanua Levu, and the Lau Islands (Burley, 1998, Thompson, 1938), with the local Fijian and Tongan chiefly lineages intermarrying (Derrick, 1968). In time, trees for canoe building, sandalwood, and red bird feathers were taken from Fiji in exchange for valuables, such as fine mats, produced in Tonga. The political and economic relationships between Fiji and Tonga are also recorded in oral tradition and place names, and in chiefly titles (Barnes and Hunt, 2005, Derrick, 1968).

The first Europeans to land on Fijian soil were wreck survivors, and this occurred about 157 years after Tasman had sighted islands in northern Fiji in 1643, without making landfall. Both Cook and Bligh sailed through Fiji in 1774 and 1789, respectively but neither made contact with any Fijians, and a few more ships visited the islands before the turn of the
18th century, but it was not until approximately 1800 that the Argo wrecked in the Lau Islands and Europeans first stepped ashore (Derrick, 1968:37). During the first decades of the 1800s more Europeans came to Fiji for sandalwood, a prized commodity in good supply, especially on Vanua Levu, and traded typical European items (glass, metal tools) and muskets for this wood. Sandalwood, however, was soon almost gone and trade in bêche de mer (sea cucumber) took over for much of the rest of the century. Europeans also helped Fijians in internal wars and the fire-arms and cannon brought to Fiji by Europeans certainly increased the level of violence between polities in the islands, although the effects these weapons had on the development of large-scale political units, chiefdoms, is debated (Sayes, 1984). The 1800s also saw the arrival of missionaries. Between 1830 and 1840 members of the London Missionary Society, Wesleyans, and French Catholic priests arrived in Fiji and competed for converts. And in the closing decades of the 19th century, a confederacy of some of the most powerful chiefdoms in Fiji was formed, along with a general assembly comprising the chiefs of these polities, each with European advisors. In 1874, the general assembly of chiefs, headed by Caokbau of Bau, ceded Fiji to Great Britain. The motivation of these chiefs to cede rule to a foreign power are varied but likely included chiefly monetary and land debts to westerners, and the desire for assistance in continuing skirmishes with other chiefdoms in Fiji (Newbury, 2011). Cession did not herald peace, however, as British forces battled groups in the interior of Viti Levu and Vanua Levu who resisted colonial (and church) power (Nicole, 2010). Introduced disease in the Colonial period also took its toll, with 20-25% of Fijians perishing during the 1875 measles epidemic (Haggett, 1993). While there is abundant historical and ethnohistoric information on Fiji, historical archaeology in the islands is essentially non-existent, save for a few projects (Crosby, 2002; Smith, 2006)

A LONGSTANDING QUESTION IN FIJIAN ARCHAEOLOGY
Many of the basic archaeological questions asked by archaeologists working on the islands of Oceania – what processes drove island colonization, why (and when) did subsistence practices vary, what explains changes in social complexity – are somewhat unresolved in Fiji, largely due to the paucity of archaeological work for such a large archipelago (the second largest land area in Remote Oceania, only about 2% less land than New Caledonia). In this section one of these questions is examined with an eye towards future research.

As noted at the beginning of this chapter, Fiji has long been characterized culturally, linguistically, and biologically as spanning the generalizations made of both Melanesia and Polynesia. In terms of material culture, the first Fijian populations produced and used artifacts – such as decorated Lapita pots, lenticular cross-section metamorphic stone adzes, and shell ornaments – similar to those used by populations in what would become Polynesia, Sāmoa and Tonga. These artifacts are also similar to those produced by populations in New Caledonia and Vanuatu in Melanesia. Early artifact similarities across all these archipelagos, and the rapidity with which they were settled indicates they were colonized by a culturally related population (Golson, 1961, Green, 1995, Kirch, 1997, Sheppard et al., 2015).

After about 2700 BP, when it seems dentate-decorated Lapita ceramics are no longer made in Fiji (cf., Burley and Connaughton, 2010), or anywhere in Remote Oceania, Fijian material culture is more readily distinguished from that of the archipelagos to the west and the east. To the west in Vanuatu, for example, Bedford (2006, and see Bedford and Spriggs essay) has identified multiple, partly contemporaneous post-Lapita ceramic traditions. These ceramic traditions last for differing amounts of time; they are differentiated by their distinctive surface treatments; and they are spatially restricted in their distribution across the archipelago suggesting cultural transmission occurred more frequently within regions of Vanuatu than across the archipelago as a whole (cf. Dickinson, 2006:115-116). In New
Caledonia, there is also post-Lapita regional diversification in ceramics with northern and southern traditions distinguished by different vessel forms and surface treatments. At the same time as this regional diversification, similar paddle-impressed ceramics are also made throughout the Grande Terre of New Caledonia, until the start of the first millennium AD (Sand et al., 2011). New Caledonian post-Lapita ceramic diversity suggests cultural transmission of ceramic variants occurred within intra-archipelago regions at a greater frequency than between regions for some styles, but paddle impressed variants were transmitted throughout the island population. The intra-archipelago ceramic diversity that attests to multiple “local” populations in New Caledonia and Vanuatu (cf. Dickinson, 2006:116), in terms of the transmission of ceramic variation, is not seen in Fiji. Interestingly, the earliest paddle-impressed ceramics in Fiji are pene-contemporaneous with their appearance in New Caledonia, appearing in the Yasawas and Mamanucas of western Fiji sometime before 2700 cal. BP (Cochrane, 2002) and, in small amounts, in the same deposits as dentate decorated Lapita (Cochrane et al., 2011:Table 6), also similar to New Caledonia. Paddle-impressed ceramics are found in eastern Fiji (the Lau Group) in deposits earlier than 2470-2000 cal. BP (Cochrane, 2009:21, 53) and central Fiji, specifically southern Viti Levu and surrounding islands in immediately post-Lapita or mixed Lapita and later-period deposits (Crosby, 1988, Clark and Anderson, 2009a).

It seems likely that the co-occurrence of Fijian paddle-impressed and dentate ceramics, at least in one site of western Fiji (cf. Hunt, 1980), and the similar time frame of paddle-impressed ceramics in Fiji and New Caledonia is best explained by the cultural transmission of ceramic variation between these two archipelagos (Burley 2013:442), without much movement of pots as there is currently no geochemical or petrographic evidence of pottery transfer. The spread of pottery making variants may have occurred near the end of wide-spread Lapita movement in Near Oceania. Cochrane and Lipo’s (2010) network
analysis of Lapita decorative variation indicates that New Caledonia and western Fiji maintained greater transmission influenced ceramic similarity toward the end of the dentate Lapita pottery period than other archipelagos in Remote Oceania.

Like material culture, the diversity of Fijian languages may be explained by variation in the frequency of cultural transmission within regions of Fiji and between Fiji and other archipelagos. In general various Fijian languages share similarities both to languages spoken by populations in island groups to the east and the west (Geraghty, 1983c, Pawley, 1971). Instead of Fijian languages, however, it is more accurate to speak of Fijian communalects or communities “whose native-born inhabitants share a homogenous speech tradition, quite free of regional variation” (Pawley 1971:407). Communalects are well-recognized by native speakers and may be distinguished by a few differences in vocabulary, pronunciation, and intonation. The number of communalects in Fiji is unknown but probably numbers from 100 to 300 (Geraghty 1983; Pawley 1971). Geographically contiguous communalects are often arranged into dialect chains, so that adjacent communalects share much in common, but communalects at either end of the chain may be quite different.

There is, however, a major speech-community boundary in Fiji (Geraghty, 1983a, Pawley, 1971). Fijian communalects can be divided into a western dialect chain and a group of eastern dialect chains (Geraghty 1981) with the boundary between them running along the central mountain chain on Viti Levu, then south along the Navua river (see Figure 1). With only a few exceptions, communalects that are on either side of this boundary do not grade into each other as in the dialect chains throughout Fiji.

Other patterns of communalect similarity in Fiji have also been discovered. Geraghty identified a subset of eastern Fijian communalects from the Lau Group and eastern Vanua Levu that share a number of unique lexical innovations with Polynesian languages to the east (Geraghty 1983:379-382). Geraghty suggests that these communalects may be evidence of a
population comprising eastern Vanua Levu, Lau, and Tonga within which the transmission of some elements of language occurred at a higher frequency than between this population and other populations, say of western Fiji. Pawley (see essay) has proposed the following scenario to explain these general patterns of language variation in Fiji: Lapita settlement of Fiji, Tonga, and Samoa resulted in a “dialect complex” distributed over mainly coastal areas of these islands; three regions of communalect similarity quickly formed after colonization including the region of western Viti Levu and western Vanua Levu, the region of eastern Vanua Levu, Lau, and Tonga, and the region of eastern Viti Levu; over time eastern Vanua Levu and Lau groups broke away from Tongan speech communities and began to share more language similarities with groups in their proximity; later linguistic innovations spread across Fiji indicating transmission throughout the archipelago; and finally, the division between eastern and western dialect chains strengthened as river valley populations increased and the central mountain chain on Viti Levu impeded contact between groups.

In summary, Fijian communalect diversity suggests a complex history of linguistic transmission between and within Fiji, with eastern Fijian communalects sharing more similarities with Tonga and western communalects sharing similarities to Melanesian languages (Geraghty 1983:389). A significant division between eastern and western Fijian communalects also suggests that sometime after colonization the probability of linguistic transmission between individuals within the archipelago is not well accounted for by a simple distance-equation. Finally, patterns of communalect similarity suggest that at some point an isolation-by-density model may explain frequencies of language transmission in much of the archipelago, except for central Fiji where language transmission appears to have been structured around different parameters (Hunt, 1987).

In addition to material culture and language, biological variation across Remote Oceania has been examined to infer the population history of Fiji. Depending on which
genetic markers are analyzed or which metric and non-metric skeletal attributes are examined (and how these are statistically analyzed), scholars have suggested that the colonizing population in Fiji derived from an original Melanesian population, a southeast Asian population in Melanesia, or a mixture of both. There are four sets of fairly complete remains associated with colonizing populations in Fiji: one from Waya Island, two from Lakeba, and one from Moturiki. Metric and non-metric analyses by Pietrusewsky (1997) and Houghton (1989) suggest that these skeletons, minus the Moturiki burial which has not been analyzed in a similar group, are like other Lapita-age skeletons in Tonga and Near Oceania and also share affinities with other skeletal series suggesting an island southeast Asian or Chinese coastal biological homeland.

No analyses of ancient genetic material from Lapita-age skeletons in Fiji has been successfully performed. The genetic variability of modern populations has, however, been used to suggest the biological characteristics of Fiji’s colonizers. Again, results differ depending on which genetic markers are examined and which population samples are assayed, but in general modern Fiji populations are similar to West Polynesian populations and Near Oceanic populations (Hertzberg et al., 1989, Kirk, 1989, Wollstein et al., 2010), with some studies showing fairly equal gene flow between Fijian populations and populations to the east in Samoa and the west in Vanuatu and New Caledonia (e.g., Kirk et al., 1987, Lum et al., 2002). Several researchers (e.g., Hurles et al., 2002, Kayser et al., 2006) have linked Remote Oceanic biological complexity to a likely population bottleneck in Fiji as the colonizers of Remote Oceania continued to move east from Vanuatu, the Santa Cruz Islands, and New Caledonia into the remote Pacific.

The biological diversity of Fiji after colonization has been assessed through morphological studies of remains from Natanuku (Davidson and Leach, 1993, Pietrusewsky, 1989) and the Sigatoka Sand Dunes (Pietrusewsky et al., 1994, Visser, 1994) with the
remains dating to approximately 1000 to 1500 years after colonization of the archipelago. The Natunuku skeleton is similar to both Melanesian and Tongan series, along with remains from Lakeba. The Sigatoka materials were described as both similar to modern Fijians through non-metric cranial data and infracranial analyses (Pietrusewsky, et al. 1994) and like Lapita samples and other skeletal series in Remote Oceania (Visser 1994). These analyses of skeletons belonging to populations that post-date Fiji’s colonization suggest continued population-contact between Fiji and island groups to the east and west (Visser 1994:249).

In summary, biological variation in Fijian populations from the archipelago’s colonization up to the present indicates that Fiji’s biological heritage includes populations in greater Near Oceania, likely including island southeast Asia and Remote Oceanic Island Melanesia and West Polynesia. Importantly, Fiji’s population has probably continued to exchange genetic material with populations to the east and, perhaps more so, to the west throughout the human history of the archipelago.

Summarizing the Fijian data on culture, language, and biology in a similar way, Burley (2013) has argued that the differences and similarities shared by Fijians and West Polynesians are a product of separate founder events during Remote Oceanic colonization, the formation of at least partially separate interaction spheres—western Fiji to one side and Tonga-Lau to the other—and post-colonization migrations either within Fiji or by populations entering Fiji from the west. Burley’s argument is convincing, and is certainly in many respects an accurate description of what happened in the past. Several archaeologists (e.g., Bedford and Clark, 2001, Clark, 2009, Marshall et al., 2000), however, do not agree that the Fijian material culture changes identified by Burley, some of these summarized above, are explained by migration and differential interaction. At the heart of their arguments lies the difficult question, what do different kinds and amounts of variation mean? For example, Clark (2013:447) argues that differences between Fijian Plainware and Navatu
ceramics are so slight there is no need to invoke a migration to account for the latter pottery, but Burley (2013:458) counters that the differences are great enough to support a migration scenario. What is missing in these exchanges, and much of Fijian archaeology, is an appreciation of both the role of general or explanatory theory in predicting the empirical results of different processes and the role of associated classification procedures for describing variation in the archaeological record.

Where Burley’s explanation of Fijian polygenesis relies on artifact similarity, he is employing homologous similarity, a concept from general evolutionary theory. Homologous similarity results from processes of cultural transmission and different cultural transmission processes allow us to predict different patterns of homologous similarity (Eerkens and Lipo 2007). Alternatively, some similarities are analogous. Analogous similarities are shared between populations, not as a result of cultural transmission between them, but instead through a number of processes including environmental constraint of cultural variation (O’Brien et al. 1994), independent invention and adaptive convergence (e.g., McCoy and Graves 2010), and parallelism or similarities arising from deeper homologies (e.g., Kirch 1990). In short, both homologous and analogous similarities are embedded in an evolutionary explanatory framework, have particular distributional expectations, and are explained through processes such as cultural transmission and selection. Classification procedures, that is how we describe the archaeological record also derive from this explanatory framework (Dunnell 1978). Briefly, artifact classes that are generated to measure homologous similarity should be defined by attributes that are potentially free to vary within certain limits, not tied to specific environmental variation, and do not likely contribute to artifact performance differences that contribute to differential replication (Leonard and Jones 1987). In contrast artifact classes designed to measure analogous similarity might be defined by attributes that track natural
environments, artifact performance and use, or other attributes hypothesized to be patterned by selection.

How could archaeologists apply such a framework to the question of Fijian polygenesis? We might expect different dimensions of material culture variation to be explained by different processes, such as similar ceramic surface treatments possibly resulting from cultural transmission between populations, but shared vessel form diversity explained by independent invention and convergence related to similar subsistence regimes and environments (Cochrane, 2002). Other aspects of human variation, including biology and language, are partially explained by transmission, both genetic and cultural, and we might expect that different dimensions of human variation will exhibit similar patterns, such as the demic split between western and eastern Fiji in linguistic and biological (Kirk et al., 1987, Kirk, 1988) variation. Most importantly, the application of an evolutionary framework to the question of Fijian polygenesis includes explicit explanatory processes and classification methods derived from these processes, so that we can clearly address the question, ‘what do different kinds and amounts of similarity mean’?

In the case of the Fijian Plainware-Navatu ceramic transition, Burley’s primary artifact class is the Navatu ceramic type, which he defines in part, by hard, thin-walled globular jars with sharply everted rims, and with surface treatments including fingernail pinches, punctates, and appliqué. This differs slightly from the original defining attributes identified by Green (1963), and which were isolated through stratigraphic comparisons of assemblages without explicit reference to any explanatory process. As a result of these different type definitions, the Navatu ceramic type includes attributes whose temporal and spatial distributions are possibly the result of different processes. Some basic observations are suggestive: The temporal distribution of Navatu-type surface treatment and rim-form seems to have a geographic component, with the earliest appearance in the east at site 197 on
Lakeba in layers dated approximately 1900–1500 years cal. BP (2σ; Best 1984:295, fig. 3.55; Cochrane 2009a:21, table 2.1), then at Sigatoka on the south central coast of Viti Levu between 1330-1290 cal. BP, and finally in the western Yasawa islands (site Y2-39), first in a layer dated 1262–934 years cal. BP (2σ; Cochrane 2002, fig. 10, and 2009a, table 5.26). The clinal appearance across Fiji of similar surface-treatment and rimform attributes, attributes that are likely stylistic (Dunnell 1978), suggests an explanation of cultural transmission within a population. This explanation may be tested with techniques like cladistics and seriation that are designed to map historical relationships (Lipo et al., 2006). Other attributes of Navatu-type ceramics, hardness and wall thickness, for example, may be explained by rapidly changing selective conditions favoring vessels with different physical performance characteristics, and this may explain the Sigatoka Navatu ceramics in particular where Burley has suggested a migrant population produced this potter. These kinds of explanations are also testable through quantitative distributional (e.g., Brantingham and Perreault, 2010) and materials science techniques (e.g., Feathers, 2006).

PROSPECTUS

The colonization, culture historical changes, evolution of diversity, and contemporary variation across Fijian populations is a product of the archipelago’s “betweenness”. More specifically, Fiji is in the center of a region quickly colonized by related populations 3,000 years ago, and after initial widespread interaction, linguistic, cultural and biological transmission became relatively local. However, additional population movements and other demographic changes likely occurred over the subsequent millennia, some perhaps involving populations from outside Fiji. We can best explain similarities and differences in the archaeological record across these millennia by employing a general theory that allows us to predict the kinds of variation resulting predominantly from transmission and historical
relatedness and the kinds of variation that we might expect in separate populations arising
from the social and natural environment, adaptation, and other evolutionary processes.

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Figure 1. Map of Fiji showing islands (italics), archaeological sites, and the boundary between western and eastern Fijian dialects (dashed line).

Figure 2. Comparison of Fijian ceramic sequences. Period names (italicized) are by authors at column heads. Brief descriptions of ceramic characteristics are in plain text. Periods which have been similarly defined by different authors are shaded similarly. Dashed lines are less significant divisions noted by the authors.
Figure 3. A, plan map of fortified hilltop site on Nacula in the Yasawa Islands. Such fortified hilltops are similar to those documented elsewhere in Fiji, including in the Sigatoka Valley on Viti Levu. Note the ditches and banks constructed on the northern perimeter of the site. B, photograph is a view to the site from the southwest (see Cochrane 2009:62-68). C, elevation transect.
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<td>Sigatoka Phase Dentate stamped ceramics (Lapita)</td>
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**Navatu Phase**
- Paddle impressed ceramics
- New vessel forms

**Mid-Sequence Navatu Phase**
- Paddle impressed ceramics
- New vessel forms

**Fijian (Polynesian) Plainware**
- Wiping, punctuates, limited paddle impressing
- Simple dentate ceramics

**Late Lapita**
- Complex dentate ceramics

**Early Lapita**
- Complex dentate ceramics

**Lapita Foundation**
- Complex dentate ceramics
- Simple dentate and loss of vessels