

Recalibrating Polynesian prehistory

John Edward Terrell¹

Department of Anthropology, Field Museum of Natural History, Chicago, IL 60605

The anthropologist Johannes Fabian once famously remarked that it is difficult to talk about time, and consequently we are given to leaving time to philosophers to ponder and play with as a topic worthy of learned debate (1). However, as the archaeologists Timothy Rieth and Terry Hunt have observed, “a well-established chronology provides the foundation for addressing broader research questions including the evolution of resource use, agricultural strategies, competition and interaction, social complexity, and human-induced environmental impacts” (2).

In PNAS (3), Hunt joins his colleagues Wilmshurst, Lipo, and Anderson in showing us what a well-grounded radiocarbon chronology for the human colonization of the many scattered islands of East Polynesia looks like. Thereby, they make it obvious that the time has come to rethink how the discovery and settlement of these remote and previously uninhabited landfalls in the vast Pacific Ocean came about and why. As these researchers further note, it is now also wise to rethink how rapidly and catastrophically people, as well as the animals and plants they intentionally or unintentionally brought with them, may have changed the ecological balance and species diversity of the places they came to see as their new homes.

Resolving these seemingly esoteric historical issues is more than academically relevant to today’s world, in part because some contemporary scholars have cultivated a wide and enthusiastic popular following using these same Pacific Island societies as the poster children for their views on the role of geography, resource variation, and subsistence ecology in structuring and predetermining the known, or inferred, outcomes of human history (4, 5).

During much of the last century, it was conventional to say that the Polynesians comprise a biological and cultural people, or race, apart from other islanders in Oceania. It was generally taken for granted that the forebears of today’s Polynesians had migrated swiftly out into the Pacific already more or less recognizably “Polynesian” in their physical appearance, ways of speaking, and cultural practices. It was additionally taken for granted that once these migrants had commenced their extraordinary journey eastward to Polynesia, they turned their back on their ancestral “proto-Polynesian” homeland, a place somewhat like Shangri-La sup-

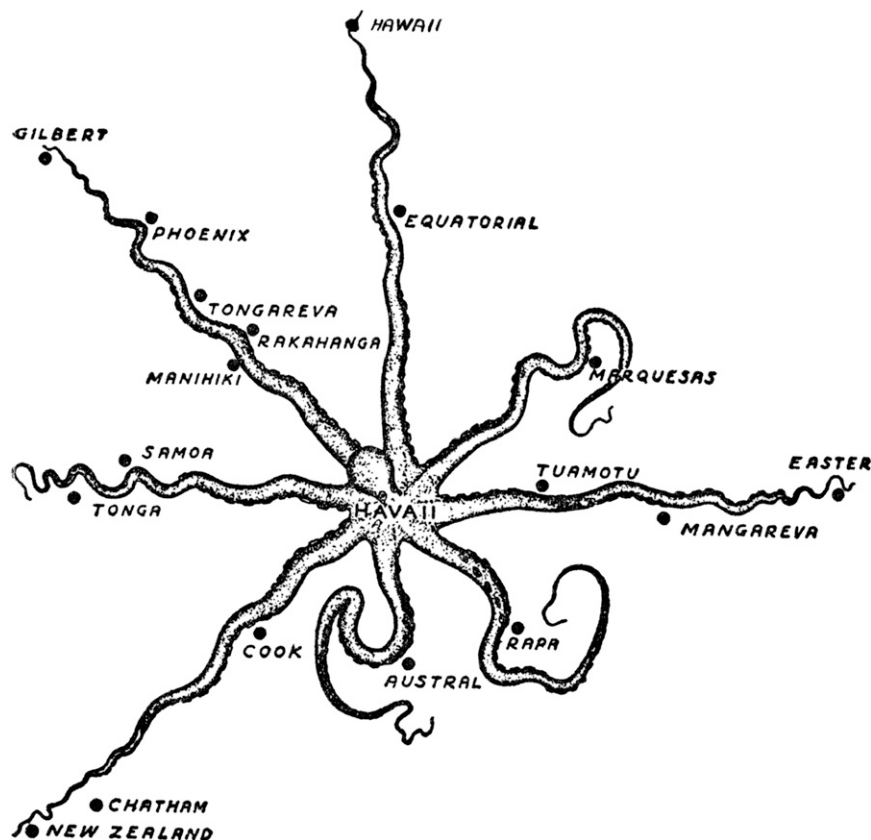


Fig. 1. “The hub of Polynesia, Hawai’i, with its eight radials.” Relying on genealogies and island oral traditions, the Aotearoa New Zealand Maori scholar Peter Buck claimed in 1938 that the settlement of Ra’iatea (or Hawai’i) and the rest of the Society Islands by early Polynesians happened around the fifth century AD (6). Based on their meta-analysis of 1,434 radiocarbon dates from East Polynesia, Wilmshurst et al. suggest instead a date of ~1025–1120 AD (3). Reprinted from ref. 6.

posedly located somewhere in Southeast Asia or on Formosa (Taiwan). It seemed self-evident then, too, that because these ancient Polynesian forerunners had discovered and successfully colonized such remote and far-flung places as the Hawaiian Islands, New Zealand, and Rapa Nui (Easter Island), they must have been skillful navigators and brave, adventurous long-distance voyagers—veritable “Vikings of the Sunrise,” as the Aotearoa New Zealand Maori scholar Peter Buck called them dramatically in his 1938 popular book (6) thus titled (Fig. 1).

In their analysis of 1,434 radiocarbon dates from East Polynesia, Wilmshurst et al. suggest that the most reliable short-lived samples indicate strongly that the colonization of this part of the Pacific happened in two distinct phases: earliest in the Society Islands around A.D. 1025–1120, four centuries later than previously assumed; subsequently, after 70–265 y,

dispersal continued in one major pulse to all remaining islands in this region around A.D. 1190–1290.

Taken in isolation from their broader geographical and historical contexts, these findings might appear to lend new weight to old ideas about Polynesians and how their forebears had sailed swiftly from Asia to the Pacific not all that many centuries ago. Such, however, is not the case. Based on available radiocarbon dates and associated archaeological finds, as Wilmshurst et al. remark, the Tongan and Samoan archipelagoes in West Polynesia were discovered and at least partially colonized around 2,700–2,900 y ago (7). The neighboring

Author contributions: J.E.T. wrote the paper.

The author declares no conflict of interest.

See companion article on page 1815.

¹E-mail: terrell@fieldmuseum.org.

325+ islands of the Fijian archipelago immediately to the west of these two island chains, which are located more than 7,000 km off the China coast, were similarly first settled by people around 2,950–3,050 y ago (8). What jumps out immediately when these dates for West Polynesia are set alongside those reported here by Wilmshurst et al. is the astonishing realization—particularly given how often it has been said that the hypothetical ancient Polynesian migration had been a swift, singular, deliberate, and highly motivated affair (9, 10)—that the disruption, or what some have called the “settlement pause,” in colonization in West Polynesia lasted for nearly two millennia.

Some scholars see great historical significance in the fact that East Polynesian languages and ways of life are derived historically from somewhere in West Polynesia (11). Except for the small Galápagos archipelago, however, there are no substantial landfalls east of East Polynesia for thousands of kilometers. It is hardly surprising, therefore, that when islands in East Polynesia began to be colonized by people in prehistoric times, those taking the risks and reaping the rewards came from neighboring islands to the west, that is, from West Polynesia. Because most Pacific archaeologists, ethnologists, and historical linguists today agree that there was indeed a pause in long-distance voyaging in West Polynesia during which many of the diagnostic traits of Polynesian language and culture evolved locally in situ (12), what is new and truly unexpected about what Wilmshurst et al. report is how very lengthy this pause was. In light of this realization, moreover, it seems even more likely than previously suspected that what we today see as Polynesian culture is an amalgam of traits, some locally developed in West Polynesia and others derived from elsewhere in the western Pacific during this long pause before the settlement of East Polynesia (7, 13).

As Wilmshurst et al. note, it is anyone's guess what happened somewhere in West

Polynesia 1,000 or so years ago to jumpstart long-distance settlement voyaging eastward once again. Whatever the causal explanation, what they report adds weight to what the archaeologist Les Groube proposed years ago (14): Polynesians did not come from anywhere else on the planet. If what Wilmshurst et al. show us is correct, the predecessors of today's Polynesians had plenty of time while resident only in West Polynesia to evolve and become “Polynesian” (whatever you take this phrase to mean) after people had made their first landfalls in Tonga and Samoa from neighboring places immediately to the west, that is, from communities in the cartographic region of the South Pacific conventionally labeled Melanesia (“Black Islands”) rather than Polynesia (“Many Islands”) (15, 16).

Nonetheless, some scholars today still maintain that the forebears of the Polynesians were a singular people, or peoples, who migrated out into the Pacific more or less identifiable as such from an ancient homeland located somewhere in Asia or Taiwan (11, 17, 18). According to the influential prehistorian Roger C. Green only a few years before his death in 2009, the discovery and first settlement of the Pacific Islands was achieved over time through an interlocking series of culturally, biologically, and linguistically interrelated human migrations—a historical progression of step-by-step, or “phylogenetic,” pulses or pulse-like cascading migrations that eventually culminated in the colonization of East Polynesia (19).

Perhaps, but there is indeterminacy to any series of temporal events however much, when seen in hindsight, they may appear to form an orderly and premeditated sequence of decisive acts or occurrences, namely, in this instance, an ostensibly predictable phylogenetic set (11, 16) of human migrations, colonization pulses, or demographic dispersals. The results published here lend new force to the alternative proposition that the peopling of the Pacific was primarily Markovian in its expansion and transformation

probabilities (in sequences of events described as Markovian, it is enough to know the present state of a system to predict what its future state may be like) (20).

It may be entirely human to want to arrange any selected series of events after the fact of their happening into an orderly pattern of one sort or another, chronological, cladistic, phylogenetic, or mystical. However, our human capacity to do so (aided nowadays by digital computers) does not guarantee that the people in the past who were caught up in the historical events we are trying to map knew what was happening to them, had things thoughtfully planned out and prearranged, all favored the same game plan from start to finish, and stuck together as a race or people through thick or thin.

The study of history forces us to take the idea and reality of time seriously, but although time may allow things to happen, time does not bring them about. It would be naive, therefore, to allow ourselves to be seduced by our ways of mapping time—geological, radiometric, archaeological, or phylogenetic—into thinking that chronology and causation are the same. Wilmshurst et al. have done us the good service of putting the baseline of human chronology in East Polynesia on a much more secure footing. It is now more obvious than some have hitherto been willing to entertain that the peopling of the Pacific Islands was historically unexpected, not historically predictable. However, as the old cliché goes, their report in PNAS on the high-precision radiocarbon dating of the arrival of human beings in East Polynesia raises at least as many questions as it resolves. The word “migration” would seem to be as good a word as any to describe what evidently happened not so very long ago in the eastern part of Polynesia, although the word “colonization” seems similarly adequate, too. It remains far more debatable, however, whether this is the right word to use when talking about time and people elsewhere in the South Pacific.

- Fabian J (1983) *Time and the Other. How Anthropology Makes Its Object* (Columbia Univ Press, New York).
- Rieth T, Hunt T (2008) A radiocarbon chronology for Samoan prehistory. *J Archaeol Sci* 35:1901–1927.
- Wilmshurst JM, Hunt TL, Lipo CP, Anderson AJ (2011) High-precision radiocarbon dating shows recent and rapid initial human colonization of East Polynesia. *Proc Natl Acad Sci USA* 108:1815–1820.
- Diamond J (1997) *Guns, Germs, and Steel* (Viking, New York).
- Diamond J (2005) *Collapse. How Societies Choose to Fail or Succeed* (Viking, New York).
- Buck P (1938) *Vikings of the Sunrise* (Stokes, New York).
- Addison D, Matisoo-Smith E (2010) Rethinking Polynesians origins: A West-Polynesia triple-I model. *Archaeol Oceania* 45:1–12.
- Burley D, Barton A, Dickinson W, Connaughton S, Taché K (2010) Nukuleka as a founder colony for West Polynesian settlement: New insights from recent excavations. *J Pacific Archaeol* 1:128–144.
- Diamond J (1988) Express train to Polynesia. *Nature* 336:307–308.
- Terrell J (2000) A ‘tree’ is not a ‘train’: Mistaken analogies in Pacific archaeology. *Antiquity* 74:331–333.
- Gray RD, Drummond AJ, Greenhill SJ (2009) Language phylogenies reveal expansion pulses and pauses in Pacific settlement. *Science* 323:479–483.
- Pawley A (1996) On the Polynesian subgroup as a problem for Irwin's continuous settlement hypothesis. *Oceanic Culture History: Essays in Honour of Roger Green*, eds Davidson J, Irwin G, Leach F, Pawley A, Brown D (N Z J Archaeol, Dunedin, New Zealand), Special Publication, pp 387–410.
- Terrell J (1988) History as a family tree, history as an entangled bank: Constructing images and interpretations of prehistory in the South Pacific. *Antiquity* 62:642–657.
- Groube L (1971) Tonga, Lapita pottery, and Polynesian origins. *J Polynesian Soc* 80:278–316.
- Burley D, Dickinson W (2010) Among Polynesia's first pots. *J Archaeol Sci* 36:1547–1556.
- Terrell JE (2010) Social network analysis of the genetic structure of Pacific Islanders. *Ann Hum Genet* 74: 211–232.
- Whyte AL, Marshall SJ, Chambers GK (2005) Human evolution in Polynesia. *Hum Biol* 77:157–177.
- Kirch P (2010) Peopling of the Pacific: A holistic anthropological perspective. *Annu Rev Anthropol* 39: 131–148.
- Green R (2003) The Lapita horizon and traditions—Signature for one set of Oceanic migrations. *Pacific Archaeology: Assessments and Prospects*, ed Sand C (Le Cahiers de l'Archéologie en Nouvelle-Calédonie 15, Département Archéologie, Service des Musées et du Patrimoine de Nouvelle-Calédonie, Nouméa, New Caledonia), pp 95–120.
- Terrell J (2009) Return to the entangled bank: Deciphering the Lapita cultural series. *Lapita: Ancestors and Descendants*, eds Sheppard P, Thomas T, Summerhayes G (N Z Archaeol Assoc, Auckland, New Zealand), Monograph 28, pp 255–269.