Polynesian Civilization and the Future Colonization of Space

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Abstract

Polynesian civilization was configured — prior to Western colonization — in ways similar to that sometimes described as necessary for humanity's interstellar migration into space. Over thousands of years and miles, across open ocean, a core population expanded to settle on hundreds of scattered islands, while maintaining shared identity, continued awareness and repetitive contact with each other. Key to their expansion was their development of robust ocean-going vessels and their extraordinary abilities to navigate across vast expanses of open water. The first half of the 1800s saw a surge in contacts between Polynesia and western missionaries and whalers, followed by significant depopulation due to disease and, after 1850, the imposition of Western political control. The result was a dramatic disruption of many elements of Polynesian life. At the same time, the propensity of many outsiders was to characterize Polynesia as uncivilized or as an “arrested” civilization. However, in the 1970s, there began a pan-Polynesian revitalization, including, and exhilarated by, the resurrection of traditional blue ocean navigation. This paper explores this role of navigation as a major institutional repository of Polynesian civilization writ large, as well as the analytic importance of differentiating between “culture” and “civilization”, and the possibility that Polynesian civilization is beginning a “gregarious flowering” in preparation for its participation in the coming dispersal of humanity into interstellar space.

1 Gregarious flowering means that all plants of a particular species flower at the same time, regardless of differences in geographic locations or climate conditions... (e.g.) when a certain bamboo species starts to flower gregariously, they do this all over the world for a several year period until... (either) the entire forest has died (or)...only the bamboo stems die, while rhizomes become activated again to start the natural regeneration of the species.” Schröder, Stéphane. Bamboo Flowering Habits. December 18, 2011. https://www.guaduabamboo.com/identification/bamboo-flowering-habits. Accessed 01/15/2019.
Introduction

It was by responding boldly and successfully to this challenge of the estranging sea — by achieving, with their rudimentary means of navigation, the tour de force of establishing a regular maritime traffic across the open waters between island and island — that the Polynesian pioneers won their footing on the specks of dry land, which are scattered through the vast watery wilderness of the Pacific Ocean almost as rarely as the stars are scattered through the depths of Space.² Arnold Toynbee

On Raraka, we so discovered a party of natives… partially dressed, some in shirts… others with vests… Others again with trowsers of all colors… Among the inhabitants was a native missionary… This was the first island on which we observed the dawning of Christianity and civilization. Lt. Charles Wilkes, U.S. Exploring Expedition, 1838³

Generally, when Europeans or Americans think about civilization they think in terms of large cities, large-land masses, large populations, and grand monuments as the context in which one has “a civilization.” When people think of Pacific islands they often think of hula skirts, palm trees and pristine sunny beaches; places where “people can take a vacation to escape from civilization.” To a large extent, this reflects the mentality of the “large-land mass scholars” who have championed the word “civilization”. To many of them and others, oceans are bodies of water that create barriers of separation between societies, nations and civilizations. In contrast, for the people of the Pacific, themselves, the ocean and its waves and currents are the weft and the warp upon which their civilization has been woven.

Arnold Toynbee saw Polynesia as an “arrested” civilization. He believed that the high accomplishments and specializations of “arrested” civilization in adapting to the unique challenges of their environment also limited their abilities to substantially change.

³ In 1838, six U.S. Navy vessels set out on a great voyage of exploration. Aboard were several hundred seamen and scientists under the command of Lt. Charles Wilkes. Authorized by Congress, the U.S. Exploring Expedition (also known as the "U.S. Ex. Ex.", or the Wilkes Expedition) would explore and map the Pacific, Antarctica, and the northwest coast of the United States. Wilkes, Charles. 1849. Voyage Round the World. George W. Gordon. Philadelphia.
A high technique has been developed by everyone of the arrested civilizations. The Polynesians have excelled as navigators, the Eskimos as fishermen, the Spartans as soldiers, the nomads as tamers of horses, the 'Osmalis as tamers of men. These are all cases in which civilizations have remained static while technique has improved. They are like climbers who have been brought up short and can go neither backward or forward.  

My own initial orientation to Polynesia occurred when I was responsible for closing out a series of environmental projects across the Pacific region for the US Agency for International Development (USAID). The deciding U.S. government authorities had concluded that their limited resources would be better used if concentrated among more "substantial" entities and programs, rather than scattering them across a host of (what they perceived as) “separate micro-entities.” The only dissent came from U.S. naval parties who shook their heads at their associates' inability to comprehend the full expanse of the area, known as the Polynesian Triangle, or its strategic importance. The region spans over 10 million square miles — about the size of Canada, the USA and Brazil combined, with some 1,000 scattered islands, whose total land mass only approximates the size of Massachusetts (using the equivalent of 1,000 square miles of water to one square mile of land).

This bias, which equates “big” and “territory” with “mass” and “land”, has multiple negative consequences in terms of hobbling the scholarly study and analysis of civilization; limiting our understanding of contemporary world dynamics and, in extremis, hindering adequate identification of the challenges, and possible responses, to the future expansion of human civilization across "outer space" to remote extraterrestrial masses.

This last insight, which may strike some as farfetched, was first given to me years ago by Dr. Lyn Poyer, an anthropologist and South Pacific expert, who, as a Peace Corps volunteer, lived on a Pacific island so small that, she said, as I remember, when someone hit a home run it inevitably went into the ocean. It was her experiencing the ability of a small concentrated population of people to maintain a thriving peaceful society on a sliver of relatively isolated land that gave rise to her speculation that Polynesia was possibly the living culture most adapted for sustained functioning during an extension of human civilization through space colonization.

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6. I use the expression here to mean as, in the literal Latin, "in the farthest reaches", rather than the more common translation: "at the point of death."

7. (That is, the relatively empty regions of the universe outside the atmospheres of celestial bodies.)

Since then, I have come to believe, as this paper will seek to demonstrate, that being "arrested" is not necessarily a death warrant, or permanent state, for either people or a civilization. As regards Polynesia, in the 1970s, a variety of efforts began to emerge for the revitalization of Polynesian culture and the revival of a Pan-Polynesian identity. This paper seeks to make the case that this has been possible only because Polynesia is a living "civilization", not just a culture - and thus possesses institutions capable of purposely promoting replication of its foundational ways of thinking and acting. Of these "navigation" is pivotal, playing a much greater role than that of a "technique," as labelled by Toynbee. As such, understandably, the creation and now expanding activities of the Polynesian Voyaging Society (PVS) has played a predominant role in this phenomenon. Moreover, since traditional Polynesian navigation was very much about the capacity for discovering, voyaging to, and settling far away areas, it is suggested that Polynesian civilization may well be moving into a new role as a significant influence on humanity's eventual efforts to colonize outer space.

**Aiming for the Stars**

Of course, the challenges of adapting human civilization to space will be many. They will involve prolonged voyages towards uncertain destinations; the establishment of encapsulated communities separated over immense distances; long-term inter-communal isolation; small populations crowded into very limited areas; requisite self-sufficiency and self-administration; and the need for continuous collaboration and toleration between the assorted participants. The challenges will not only be technical and logistic but social and psychological. At the same time as establishing their different settlement units, space settlements will need to maintain a common identity and a sense of shared destiny — what might be called a “unity of conscience” — possibly through periodic communications and occasional visits.

Unfortunately, many of the requisite social and psychological profiles seem to conflict with many of the characteristics of the populations and cultures of present-day “big civilizations,” such as China, the United States, Europe, India or Latin America. In contrast, many of the necessary configurations are embedded in the psyche and social orientation traditionally encouraged within many Polynesian cultures. This should not be surprising since traditional Polynesian civilization was formed by challenges and responses similar to those described as facing the coming space age, wherein, over thousands of years, a core population expanded, over thousands of miles of open ocean, to settle on hundreds of dispersed islands, while maintaining a shared identity and repetitive contact with each other.
Civilization as a Key to Expansive Human Social Evolution

Debating whether a particular society, or specific conglomeration of peoples and cultures, is, or isn't, a “civilization” might be considered little more than academic dalliance when the distinction is without significant real-world consequences. Therefore, it is important to emphasize that recognizing Polynesia as a full and dynamic “civilization” is critical to understanding the mechanisms and sustainability of the phenomenon of the Polynesian migration; and why its example can be a formative factor for humanity’s next coming extraterrestrial civilization.

For the purposes of this paper, it is critical to make a clear distinction between “culture” and “civilization”. By “culture” is meant those shared behaviors and understandings which are fashioned, expressed and integrated into the lives of a self-identifying group of people, and which they transmit from person-to-person and generation to generation. A corollary is that cultures, as defined, die with their last practitioner. They may leave behind artifacts and images and remembrances, but they no longer exist outside the dynamic lives of their members, through and in which they are created and carried.

In contrast, “civilizations” arise as societies become increasingly complex, diverse and extensive, till it is no longer possible for individuals, by themselves, to incorporate, carry and transmit the formulations of their systematized shared constructs (such as law, religion, and science). Rather the formulations become embedded in codified rules, structures and practices that reflect, retain, transmit and reproduce them, independent of their originating individuals or groups. In this sense, a civilization can outlive its original practitioners. Thus, though the Romans are long gone, Roman law remains not only knowable but still in play across Western civilization, in both church and secular legal institutions, and in geographic areas far removed from what was the territory of the Roman Empire.

Geographic Setting

The islands of the Pacific are generally divided into three main groups — Polynesia (“many islands”), Melanesia (“black islands”), and Micronesia (“small islands”). Each of these have different histories, cultures and populations, though on the fringes there has been cultural overlapping and mixings. The focus of this article is only on Polynesia, the largest division. It is made up of a large triangle of islands in the central and southeastern Pacific. These islands include American Samoa/Samoa; the Cook Islands; Easter Island; French Polynesia (including the Marquesas Islands, and the Society Islands and Tahiti); Kiribati; Midway; New Zealand; Niue; Pitcairn Island; the Hawaiian Islands; Tokelau; Tonga; Tuvalu; and the Wallis and Futuna Islands.
The precise dates, directions and origins of the Polynesian migration remains a matter of debate. However, broad approximations suffice for the purposes of this paper. Accordingly, we can identify the first great entrance of humanity into the Pacific area, towards what is today's Australia, and New Guinea, as occurring somewhere between 45,000 and 60,000 years ago. This first wave was by populations out of Africa, who, quite likely, took advantage of overland bridges and shallow waters then present between various land masses. By the time of the much later Polynesian migration, such connections no longer existed. Rather, the Polynesian migration depended on robust sailing vessels and sophisticated capacities in sailing technology, as well as, in many cases, pre-existing knowledge as to the location of the likely destination.

It appears that there were two major migrations, by a population originally coming out of East Asia and the area around Taiwan. One from around 1300 BC to 900 BC reached Fiji, Tonga, and Samoa. The other, from around 300 AD to 1300 AD, reached Hawai’i and Easter Island (400 AD-500 AD) and New Zealand (1200 AD-1300 AD). Together, this represented exploration of over 16 million square miles of ocean and the eventual settlement of almost all the inhabitable islands situated therein.
Figure 2: Polynesian Migration Map

But Are They Really a Civilization?

Both “culture” and “civilization” are concepts that have wide, diverse and highly malleable definitions, which are often used as supports to a larger issue or an encompassing understanding being advocated. As already noted, as regards this analysis, there is a need to distinguish between

...behaviors ...that are fashioned and transmitted by people themselves, over generations, (e.g. "culture") and more complex "systems of behavioral and relationship patterns" that... function across an entire society....and order and structure the behavior of individuals by means of their normative character. (e.g., “civilization”)

For our immediate purposes, a simple sufficing definition of culture, is that by Ralph Linton:

The culture of the society is the way of life of its members; the collection of ideas and habits which they learn, share and transmit from generation to generation.
In contrast, “civilization” refers to a higher level of complexity and diversity than “culture”. An empirical definition/description, expressed by Laina Farhat-Holzman, is:

A civilization must have a concentration of people in one or more urban areas. It must have (at a minimum) division of labor and specialization (people supported by the community to perform professional specialties), and it must have a surplus of food (wealth) to be used in support of such specializations (army, priesthood, etc.).

Andrew Bosworth provides a more functional-operational definition:

Civilization is fundamentally a cultural infrastructure of information and knowledge that serves survival and continuity. What distinguishes a civilization from a culture is that this infrastructure, having reached a critical level of complexity, becomes autonomous from constituent cities, nations, and empires. In ordinary cultures, the passing of information and knowledge may depend upon imitation or oral communication; in civilizations, this cultural memory...takes on a life of its own....supported, protected and replicated by institutions which purposely promote acceptance and replication of its recognized ways of thinking and doing.

The institutions of a civilization, and their array and their roles, is a vast subject.

Language, money, law, systems of weights and measures, table manners, and firms (and other organizations) are ... all institutions.” (Hodgson, 2006. p.2)

Such institutions craft the actions, thoughts, understandings, and social personalities of those affected by them, in ways reflective of the patterns of the civilization in question.

13 Ibid. p 87.
Examples of other key "institutions" of civilizations that serve to keep those civilizations in some play today are Roman Law, key scriptures (such as the Old and New Testaments, the Koran, etc.), the Hindu caste system, Confucianism, Greek logic, the Western Corporation, Korean Chaebols, Japanese Zaibatsu, African performance arts for African civilization, the civil bureaucracy for China, the university system, etc.\(^{17}\)

Many civilizations grow through expanding outwardly, and by incorporating additional populations, often through military conquest. Over their amalgamation of new populations, they throw a public “cloak” of behaviors, ideologies, practices, values, customs, aesthetics, social roles and institutions. To those under this cover, they ascribe membership in the larger “civilization.” However, there usually remains very substantial cultural divergences that differentiate the hegemonic elites and the various sub-cultures, clients and subservient members within that civilization.

The diverse Polynesian societies situated on different islands did reflect cultural differentiations, but the single greatest determinant of the differences seems to have been the nature of the Pacific island(s) each concerned group had settled. Across Polynesia, there are large and small, flat and mountainous, coral reef and volcanic islands. Each configuration presented their original settlers with a specific reality as to the type and extent of resources available, constraints on production, and overall population carrying-size. Pre-contact estimates range from small island populations of a few hundred people to, at least, 250,000 on Hawaii's major islands.

Within their particular circumstantial parameters, each group crafted its own adaptive responses. At the same time, groups under like circumstances reproduced much the same basic configurations. These included, when feasible, irrigated agriculture, temple mounds, concentrated and fortified settlements, stratified classes and highly differentiated and specialized social, productive, craft and religious roles. Despite significant differences, even as they adapted to their different specific circumstances, most of the Polynesian island societies also retained the general ability to set off for — and readapt to — other island circumstances, as necessary.

\(^{17}\) It might be mistakenly understood that "institutions", as described, are entirely independent of people. In fact, people make institutions work. The difference is between individuals and their collective institutional groups. Thus, culture relies on the priest; civilization relies on the priesthood.
But Are They Really One?

In the case of Polynesian civilization, we find a somewhat different situation. Thus, one of the many things that amazed Capt. James Cook, who made three voyages “of discovery” around the Polynesian triangle between 1768 and 1779, was the commonalities of language, crops, navigation, cosmology and religion found in the various islands visited. For example, the original settlers of Hawaii and New Zealand came from Tahiti and the larger Society Island area. Both Hawaii and New Zealand are over 2600 miles away from this area, one north of it, the other to its south-west.

On his first voyage, Cook, upon the urging of his naturalist Joseph Banks, took upon his boat a Polynesian named Tupaia, who was both a navigator and a priest from the island of Raiatea, approximately 135 miles West of Tahiti.

While for many centuries there had been voyages between the homeland and these new settlements, for unknown reasons, approximately 400 years before Cook's arrival, such occasional exchanges ceased. Yet, Tupaia was still able to draw maps and explain how to navigate to both.18

Thereafter, Tupaia accompanied Cook to New Zealand where, despite the more than four centuries of separation, he could still converse with its inhabitants, discuss historical events, and assert his high social rank as a priest.¹⁹

Unlike so many other civilizations, Polynesians did not expand through conquest but diffused from a shared cultural core area across an open uninhabited area. Rather than having to incorporate (or destroy) others encountered on their way, their challenge was to maintain, in the face of repeated distance separations and necessary local adaptations, the connectivities, continuity and coherence of their larger common body of people and their shared capacities for future diffusion and resettlement. Among the populations of specific clusters, sub-cultural differences could be keep harmonized through regular human interactions. But across the large expanse of the entire triangle of Polynesian civilizations, only durable institutions — the institutions of their civilization independent of particular individuals and sub-groups — could fulfill this need.

The Institutions of Polynesian Civilization

Traditionally, Polynesia civilization had a set of widely shared psycho-social values, beliefs and practices that were defined and exercised around a set of core concepts: i.e. *tapu* (taboos/prohibitions), *mana* (power) *noa* (blessing, freedom, the opposite of *tapu*), *mauri* (the life principle that binds all things) and which was protected by *tika* (truth, correctness, directness, justice, fairness, righteousness), *pono* (honesty, genuineness, sincerity) and *aroha* (affection, sympathy, charity, compassion, love, empathy).

That for so long, outsiders failed to see, let alone fully appreciate, the accoutrements and accomplishments of Polynesian civilizations can largely be attributed to two factors. First is the already noted ethnocentrism of massive land-based civilizations which have viewed Polynesia as composed of independent micro-cultures separated by vast expanses of ocean rather than as an ocean civilization with scattered centers and outposts. The second is the challenges of understanding, let alone accurately translating, the concepts and perspectives of an ocean, rather than land-based, people.

Such dissonance has long affected many western interpretations of Polynesia. For example, for Bosworth, the most foundational institution of a "civilization" is “writing”\(^{20}\). Polynesia is generally not seen as having a “writing” system.\(^{21}\) Yet tattooing, which westerners generally view as a decorative practice, was traditionally a highly developed symbolic accounting of an array of information, from social status and genealogy to life experiences and spiritual protections - all written, in very systematic fashion, upon the skin. It turned its bearer into what might be seen as a living human document and was considered an indispensable element of Polynesia life and society.\(^{22}\)

**Figure 7: Polynesian Images**

**Navigation: A Defining Institution of Polynesian Civilization**

For this paper, no misunderstanding is in greater need of clarification than that pertaining to the nature, roles and function of “navigation” as a key institution of Polynesian civilization. For while the actual accomplishments of Polynesians as seafarers have been widely acknowledged, till recently, the characterization has generally been that of a technologically rudimentary people. For example:


\(^{21}\) Missionaries often did develop new alphabets for the local dialects/language. In Hawaii this was done as early as 1820 and by the second half of the 19th century literacy among native Hawaiians was higher than on mainland USA. Kirch, Patrick. 2012. *A Shark Going In Is My Chief. The Island Civilization of Ancient Hawaii*. University Of California Press p. 21.

In 1956, New Zealand historian Andrew Sharp claimed that the Polynesians could not have intentionally set out to explore and settle their island realm because their canoes were too flimsy and unseaworthy, their wayfinding methods too imprecise, and their seamanship skills too lacking for the task of sailing east against the easterly Pacific trade winds, from Indonesia and Melanesia to the Polynesian archipelagos. Sharp believed that the islands had been settled by accident—by the crews of canoes that had been blown off course during storms or that had simply gone off course due to navigational incompetence or to cloudy weather hiding their navigational stars. He believed that the stories of long-distance, open-ocean voyaging found in the traditions of the Pacific islands were pure fantasy.23

In fact, nothing could be further from reality than Sharp's claims!

Sharp, and many others, have been wrong not only in terms of underestimating the technical sophistication of Polynesian ocean navigation, but also in being oblivious to its critical role in expanding, maintaining, sustaining and periodically refreshing Polynesian civilization itself. It does this by playing not only a pivotal role as a material conveyor of people and goods but also as a social, psychological, spiritual and informational galvanizer and guide. Ironically, the very institution (e.g. writing) Bosworth feels is so vital to civilization, has also been cited by others as a significant determinant of Europe's false denigration of Polynesian, and other, civilizations.

In the early 19th century, sophisticated Europeans had only arrived at a more complicated way of doing what the Polynesians, Micronesians, the Arabs and the Vikings had long since achieved…. The key to this paradox lies in the fact that a literate society faces the particular difficulty that it must be able to set down on paper, in this case maps, charts and almanacs, what not-literate people might easily read in the sky and carry in their heads. In the end it comes to imagine that the job can be done in no other way.24

Rather than Polynesian navigation being, as portrayed in the past by many Westerners, the expert application of rudimentary skills and technology, it is, in fact, a complex system of interdependent skills, understandings and knowledge, closely linked to those of sea craft design and construction. A common translation for Polynesian navigation is “wayfinding”; with the navigator being a “wayfinder”. For both wayfinding and traditional canoe building, there were established schools taught by recognized master practitioners. Instruction covered a wide array of topics and practices and could continue for ten to twenty years before a student became an initiated master.

Empirically, a Polynesian navigator had to memorize precise information across an array of natural phenomena: star positions, wind patterns, currents, the habits of specific fish and birds, cloud formations, and Te Lapa (“The Flashing” - a water-bound light phenomenon that appears to emanate from land and is, apparently still unknown to Western scientists).25 Of particular importance was knowing how to read and follow swells, (waves that propagate along the interface between water and air and which can travel thousands of miles).26

Figure 9: Polynesian Stick Chart

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Until chaos theory we (the West) had no way to exam turbulent systems like the ocean. Science just assumed sea waves were random…Today the surface of the ocean turns out to be highly modulated…. For example, a swell bending around an Island casts a turbulent shadow downward of the Island with a pattern that reveals the island's location…. Swells … shouldn't be confused with surface waves… Swells march in consistent ranks across thousands of miles…. If you can read the shape of the swell, you can tell the direction and strength of the current.27

**Technically**, traditional Polynesian navigation depended on a constellation of capacities adequate for someone, such as Tupaia, to guide a voyage neither he, nor anyone else, had made for several hundred years. Aligned with this was the expertise of canoe building masters in constructing sea craft capable of travelling over those thousands of miles, filled with people and provisions. Polynesians used a "star compass" to guide them to specific destinations as well as maps (made of sticks) to indicate the patterns of swells and the location of islands over the area to be sailed.

Before sailing, they would memorize the pattern which led to their intended precise destination. They could feel and taste changing differences in ocean waters. They used their own bodies as instruments. For example, in what is called testicular navigation, “the wayfarer reads the swell by sitting cross-legged and nearly naked on the bottom of his all vegetable matter canoe and feeling it in his testicles”.28

**Socially**, large canoe construction required organizing the efforts of hundreds of people.29 Most boats, of course, were smaller, and most navigation was over short distances. During select periods of time, island groups would make visiting voyages to each other. Such voyages might serve as opportunities for the exchange of goods and crops but were generally more social than economic. Young people sometimes went on “touring” voyages to perform for each other. Of course, not all was peaceful, and voyages for war, often over status or land, were common.

In terms of interpersonal behavior, Levy discusses the challenges and abilities of the Polynesians to maintain peaceful communities amongst tight concentrations of people on a small land-mass. He describes their ability throughout the day to navigate themselves around each other and problematic conditions, so as to avoid behavioral confrontations and emotional collisions. He sees this as engendered in childhood, citing that the usual term (in Tahitian) for actively dealing with children is *fa'atere*, literally “to steer.”

Levy notes that:

> at an early age the child must learn to coordinate and maneuver himself in relatively unprotected environments....proper performance consists of scanning for and avoiding errors...(and) to be sensitive to the mobile, context-determined situation of his community.\(^{31}\)

*Psychologically,* especially for a long voyage, the skills to use techniques on an expert level had to be matched with accommodating personalities of both crew and passengers. Crew and passengers had to live in tightly cramped quarters and, if settlers, quickly establish functioning communities and production units upon arrival. Navigators had to maintain a honed focus over long hours.

In terms of personality, John Robison, an autism specialist and scholar of neurodiversity, has suggested that the very capacity to be a great Polynesian navigator was tied to the special sensitives of the Polynesian master navigators themselves.\(^{32}\) Piailug (a modern-day navigator) described how as a toddler his father would hold him in the ocean waters encouraging him to sense the feel of the different movements of the water.\(^{33}\)

Robinson notes that:


\(^{31}\) Ibid. pp. 460-61.


\(^{33}\) Golson, Jack. Ed. 1962. *The wayfinder,* with no mathematical model between him and his environs, concentrates 100% of his intention on his place in the sea and the sky. With this one pointedness he processes all of his data on his course, speed, the current etc. His point of concentration is in his navel, called the *piko* in Hawaiian. This is considered the center of one's body and being, so that it - not the brain – is the point from which to live. Instructions for psychologically locating one's *piko* and for staying centered there have been passed down through the centuries in chants. Instructions for wayfinding explained that your *piko* is your canoe. p.1.
For navigators like Piailug ...exceptional sensitivity isn’t disabling. It is life-saving... it is apparent that he accurately senses things many others cannot see.... Where a typical person merely feels a wave rock the boat, he senses the angle of the rocking and realizes when it's different from the angle he felt a moment ago. From that he knows the canoe has wandered from its course. He has similar ability to sense changes in the patterns in the sky, and in the winds he feels against his face. American schools are filled with children who have similarly extreme sensory sensitivity. Almost to a one their sensitivity is described as highly disabling.34

Religiously, Polynesian spiritual beliefs and practices were an integral and indispensable part of Polynesian navigation. On a daily basis, it was the web of Polynesian rules of taboo (tapu) and free choice (noa) that structured so many aspects of their life and around which they had to navigate daily.

With the Maori there was no one special day, no Sunday, on which tapu must be particularly observed. One day was as another. It was a perpetual Sabbath; ... the Maori's religion was his daily life.35 Every Polynesian lived in “a rich, vibrant, ‘living’ Polynesian world where everyday encounters with things and people are heavily cosmologically textured... The ocean (was) a living thing... the sea and its inhabitants belonged to the powerful god Tangoroa ...the building of a canoe was an affair of religion... (with) extensive spatial and temporal structure of rites surrounding (it)...”36

Under such circumstances as described, that fact that the taboo system has been shown to have had substantial benefits in the management of local sea and land resources 37 reinforces the logic of having navigators undergo ritual initiation before being awarded “master” status.

Motivation

It seems simple to understand the motivation of Polynesians for regular inter-island voyaging. But why were they motivated to migrate over long distances to uninhabited and never seen locations?

34 In the USA, a fixation on lining up objects and on geometric patterns, a key Polynesian navigation skill, is considered a common indicator of autism.
Commonly suggested reasons -- overpopulation, resource depletion, search for wealth, or fleeing from conflict -- are largely built on European colonial experience and do not really seem to fit.

At most, the size of any migration apparently was in the hundreds, a number that would not seem to be significant in terms of alleviating a home island's overpopulation for any appreciable time. Given the large resources of time, materials and human labor necessary to execute a migration, its organizer(s) had to already possess riches, power, time and peace with which to assemble the effort. Nor did Polynesian migrants (unlike Europeans) bring back "foreign" wealth to their originating island. Migrants stayed where they found themselves, as independent entities. A good case can be made that the reasons were actually psychological and spiritual.

One of the many reasons why Polynesians set out on hazardous voyages to other Islands is the restless desire to visit strange places, to go sightseeing .... Firth ... describes just such an attitude with the Tikopia. Too frequently, perhaps, Western anthropologists attribute the actions of ... people to environmental or utilitarian motives. But to the Polynesians, “the undiscovered lands beyond the horizon” were a space frontier, as the solar system is today... and the simple desire to conquer this frontier may have dominated all other motives for voyaging and colonization.

Polynesian identity was tied to the ancestors who had come from an original homeland. “Hawaiki” was the legendary homeland of the Maori peoples and to which they believed they returned in death.

Now do I direct the bow of my canoe
To the opening whence arises the sun god, Tama-nui-te-ra,
Great son of the sun,
Let me not deviate from the course,
But sail direct to the land, the Homeland.

Thus, Colin suggests that, from the Polynesian perspective, each great voyage was seen as a transformative experience.

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In re-interpreting Polynesian voyaging it is worth considering that many traditional stories tell ‘neither of deliberate nor accidental cruising, but supernatural transport’ ....Clearly, the voyaging canoe was considered to be sacred in character and all the special conditions and rules of tapu surrounding its construction were to sanction the creation of a vehicle essentially of another place and time.⁴⁰

In 1893, Fredrick Jackson Turner presented his famous “frontier thesis” at the World's Columbian Exposition, marking the 400th Anniversary of Columbus' voyage. He wrote (except for the added Polynesian “equivalents”):

The peculiarity of American (Polynesian) institutions…furnish the forces dominating American (Polynesian) character….the frontier is the outer edge of the wave ….each frontier leaves its traces behind it, and when it becomes a settled area the region still partakes of the frontier characteristics…the universal disposition of Americans (Polynesians)....is the actual result of an expansive power which is inherent in them…It is like the steady growth of a complex nervous system....Thus wave after wave is rolling westward (eastward); the real Eldorado (Hawaiki) is still farther on….Complex society is precipitated by the wilderness into a kind of primitive organization based on the family.....no homogeneous public sentiment can be formed to legislate immediately into being the requisite institutions. …. And yet they are all needed immediately The most effective efforts...came through its educational and religious activity, … now, four centuries from the discovery of America (The Hawaii-New Zealand islands),.... the frontier has gone, and with its going has closed the first period of American (Polynesian) history.

Turner feared that the end of the frontier would spell the end of America's dynamic, innovative, democratic character. He underestimated America's ability to find new colonial, neo-colonial and global market frontiers. The Polynesians were not so fortunate.

The Great Pauses

As already noted, it appears that there were two major migrations, coming out of East Asia and the area around Taiwan. One was from around 1300 BC to 900 BC reaching Fiji, Tonga, and Samoa. The other occurred from around 300 AD to 1300 AD, eventually reaching Hawai‘i, Easter Island, and New Zealand.

Regarding the first pause, one of the plausible explanations is that given the variation in island environments, the process was somewhat cybernetic.

Each new settlement met new challenges that required the development of, first, new solutions for maximizing its immediate success and, only thereafter, new discoveries leading to new solutions for its next eventual migration.

The island landscapes of the Pacific were gradually encompassed over time, during movements that required the development and deployment of skills sufficient to overcome unimagined conditions. ...as... colonists reached Fiji/Samoa/Tonga, they encountered islands smaller, more isolated and less environmentally diverse.41

Regarding the second pause, with the settlement of what is now present-day Hawaii and New Zealand, the possibilities for significant new discoveries were basically over. For a while exchange voyages continued, but for reasons not known, sometime after 1300 AD, the great voyages between the widely separated island groups ceased. Various explanations have been given for this pause in such longer distance voyages. These include a change in the currents and winds due to climatic cooling, deforestation (which made it more difficult to build the large vessels necessary), the development and expansion of the society on each of the islands (which turned their powerful leaders' attentions more and more to internal jockeying for power and control), and, after settlements were well established, a diminishing need for any exchanges of biological material, or marriage, political or social alliances.

When Arnold Toynbee called Polynesia an ‘arrested’ civilization, he considered it in its “last agonies.” He stated that the growth of a civilization consists in a “progressive and inward self-determination or self articulation” of the civilization;... In the growth phase the civilization successfully responds to a series of ever new challenges, while in the disintegration stage, it fails to give such a response to a given challenge. It tries to answer it again and again, but recurrently fails.” (IV 20)42

When Captain Cook arrived in Polynesia in the 1770s, Polynesian civilization was still intact and vibrant. Unfortunately, shortly thereafter, European-brought diseases began to ravage the various island populations. (From 1791 to 1863; approximately 80% of the Marquesas population died; on Rapa, 80%).43 By the 1880s, European and American social, political and religious contacts had captured much of Polynesian daily life and ended most "self-determination" and "self-articulation" by Polynesia's decimated population.

The Role of Hōkūle‘a

By 1975, no living Hawaiian knew the ancient techniques for long distance ocean navigation. Yet, at that very moment, new stirrings in Polynesia were beginning to emerge. What has happened since raises questions as to whether Toynbee’s pessimism was not misplaced and whether Polynesian civilization wasn’t always stronger than he thought, and more dormant than “arrested.”

In 1973, Ben Finney, an anthropologist at the University of Hawaii, along with artist Herb Kawainui Kane and sailor Tommy Holmes, established the Polynesian Voyaging Society (PVS). Their aim was to show that ancient Polynesians could have purposely settled the Polynesian Triangle using non-instrument navigation. The PVS began work on a sixty foot Polynesian double-hulled voyaging canoe, based on drawings of Captain Cook. They called it Hōkūle‘a — the name of one of the major navigating stars of traditional Polynesian sailing.

Though there were no qualified living Hawaiian ocean navigators, Finney was able to recruit Mau Piailug, a Micronesian navigator from the tiny (1 mile by 1 1/2 mile, 600 population) Carolinian island of Satawal in Micronesia. With his help, efforts began to recover Hawaiian knowledge and techniques and adopt them for the proposed first voyage of the Hōkūle‘a.

In 1976, Captain Kawika Kapahulehua and navigator Mau Piailug sailed the Hōkūle‘a, from Hawaii to Tahiti, exclusively using Polynesian navigation techniques. Thirty-three days later they arrived in Tahiti, 600 years after the last Polynesian canoe had made such a journey.

Had I not had the occasion to be present, in 1992, when the voyaging canoe Hōkūle‘a stopped at the Cook Islands, I would never have understood the full emotional reaction of Polynesians to the event of a pan-Polynesia voyage as a manifestation of their pan-Polynesian identity.

What began in 1973 as a scientific experiment to build a replica of a traditional voyaging canoe for a one-time sail to Tahiti, had become an important catalyst for a generation of cultural renewal. By the end of the century, Hōkūle‘a would have sailed more than 100,000 miles; reaching every corner in the Polynesian Triangle, and the West Coast of the United States…

44 In fact, in the 20th century, traditional Pacific navigation skills appear to have been better preserved in select areas of Micronesia and Melanesia, perhaps because continuous sailing between neighboring islands remained longer as a characteristic activity of regular life than in the larger island societies of Polynesia. C.f. Gladwin, Thomas. 1970. *East is a Big Bird: Navigation & Logic on Puluwat Atoll*. Harvard University Press. Cambridge.
(Today, there are 25 deep-sea voyaging canoes with crews from 13 different Pacific countries and 10 master navigators ... training the next generation of wayfinders.)

But Are They Really Predisposed for Space?

As already noted, Toynbee considered Polynesia an “arrested civilization.” He characterized “arrested civilizations” as “climbers who have reached a certain height but now find themselves blocked; they can go neither forward nor backward.” But today Polynesians from all over the Polynesian Triangle are both reviving old, and creating new, possibilities for future expressions of Polynesian civilization. One avenue which Toynbee probably never imagined involves engagement with humanity's efforts to colonize outer space.

In fact, at the beginning of space travel, Hawaii provided sites for the geology training of Apollo astronauts and then served as the port for astronauts returning from the Moon. It now provides landscapes that mimic the surface of Mars, for training the first manned mission to that planet.

It has also provided Ellison Shoji Onizuka, from Kealakekua, Hawaii, who successfully flew into space with the Space Shuttle Discovery (and later sadly died in the destruction of the Space Shuttle Challenger.) The Mānoa Hawaii’s Space Flight Laboratory (HSFL) at the University of Hawaii is a multi-disciplinary research and education center dedicated to meeting the challenges to space exploration.

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https://scholarsarchive.byu.edu/ccr/vol80/iss80/3
Meanwhile, an independent citizen group, known as “The Lawful Hawaiian Government”, which seeks to restore the authority of the old Hawaiian Kingdom, has designated a field of lava on Hawaii’s Big Island as its official UFO Landing Pad and Star Visitor Sanctuary.

![Figure 14: Star Visitor’s Landing Area](image)

However, the possible relevance of Polynesian civilization to future space activities is more than an associative relationship with present-day efforts for space exploration located in Hawaii. As already recognized by NASA, “the long-term success of the interstellar migration will depend on human motivation and the provision for human creativity, discovery, inventiveness and serendipity.”

Through the direct participation of Finney and others, the Polynesian experience has already been introduced into NASA’s thinking on the nature of interstellar migration. The present prevailing practices for space exploration favor independent specific objective voyages, conducted and directed by authorities on earth. However, the Polynesian experience demonstrates the viability of an alternative process, one implemented as a serial unfolding of explorations, occurring in a step by step fashion.

Under such a scenario, each new step would be generated after the consolidation of the efforts and learnings of the most recent past migration group. New exploration would then directly emanate from that last group, rather than exclusively from independent missions directed from the originating home base.

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For the Polynesians, such a process occurred over thousands of years, with substantial periods of pause — thereby permitting full adaptation by the most recent migration group to its new circumstances, including the local development of new technologies and capacities necessary for the next stage.

What the Polynesian migration experience very importantly demonstrated was that, even though the process was not centrally controlled or driven, a unity of conscience and a core retention of shared institutions was maintainable through the dynamic of interim reciprocal voyaging visits; mostly between settlements within relative proximity, but supplemented by occasional grand voyages back to their centers of origin. Since the challenges will be social and psychological, as well as technical and logistical, and since the requisite social and psychological profiles seem far different from that of the populations of the “big” civilizations of our time, and since the necessary configurations are reflective of Polynesian civilization, it is suggested that it is around such experience of Polynesian civilization that the future Argonauts of outer space may well be formed.

Lastly, the Polynesian experience challenges any assumptions that humanity's expansion to outer space should be entirely “scientifically” motivated and devoid of any purposely spiritual component.

In fact, “(the) idea of seeing space exploration as a religion has a long history, dating back to the Russians of the early twentieth century, many of whom self-identified as "Cosmists."”47 James C. Fletcher, a Mormon who headed NASA (1971-1977 and 1986-1989) was openly motivated by “…the ideas expressed in the Mormon temple...(that) humans were not the only intelligent beings in the universe...(and he) was interested in the probability of finding other civilizations in space and commented on it repeatedly.”48

When Fletcher combined his faith with science, as well as Frederick Jackson Turner’s frontier thesis, he sounded like Toynbee, proclaiming that:

Like Darwin, we have set sail upon an ocean: the cosmic sea of the Universe. There can be no turning back. To do so could well prove to be a guarantee of extinction. When a nation, or a race or a planet turns its back on the future, to concentrate on the present, it cannot see what lies ahead. It can neither plan nor prepare for the future, and thus discards the vital opportunity for determining its evolutionary heritage and perhaps its survival.49

Conclusion

As humanity moves into outer space, the very understandings and definition of civilization will have to undergo major rethinking. Already concepts such as "cosmic civilization" and "astrosociology" are finding their way into the thinking of NASA. But the requisite rethinking may well be not only of the next civilization to come but also of civilizations that are now, and those that have already been.

Arnold Toynbee said “the next problem of study is why and how, out of twenty-six civilizations, four (Far Western Christian, Far Eastern Christian, Scandinavian, and Syriac) miscarried and turned to be abortive; five (Polynesian, Eskimo, Nomadic, Spartan, and Ottoman) were arrested in a growth at an early stage; while the remaining civilizations grew through an élan that carried them from challenge response to further challenge and from differentiation through integration to differentiation again?” (III, 128)

Consideration of Polynesian civilization, and its ongoing transformation through revitalized navigation, raises questions not only as to its proper classification in the typology of civilizations, but, also as concerns our understanding of the life cycles of civilizations themselves. Rethinking opens up the possibility that what Toynbee thought of as an “arrested” civilization may actually be a civilization in the process of metamorphosis. One that may even be, with élan, already beginning to unfold its wings in preparation for humanity’s future migration into the new frontier of outer space and the emergence of interstellar civilization.
Image References

Though there are thousands of pictures and drawings available related to Polynesia, with a few exceptions they can be reduced to a handful of original sources and perspectives. With disease decimating Polynesia's inhabitants during early contact, followed by missionary teachings and Christianity that rapidly displaced many traditional religious and cultural norms, the little visual evidence of classical Polynesian life is heavily dependent on the drawings of members of early expeditions.

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Fig 1. Polynesian Triangle Map. https://polyhubonline.files.wordpress.com/2014/08/126157-004-e1cbe88f.jpg
Fig 3. Taiaro, French Polynesia. https://www.radionz.co.nz/international/pacific-news/367637/french-polynesia-keen-to-buy-taiaro-atoll-reports
Fig 5. L to R. Above & Below.
   A) Oahu statue. https://www.hawaiiecotourism.org/members/and-you-creations/
Fig 7. L to R. Above & Below.
   A) Hawaiian Ad 1940. https://thesocietypages.org/socimages/2013/03/27/the-dancing-hawaiian-girl-at-your-service/
   B) Traditional Hawaiian Chief. 1819 Bancroft Library, University of California Berkeley
   C) A New Zealand warrior from A Journal of a Voyage to the South Seas in his Majesty's Ship, the Endeavor. Sydney Parkinson. Circa 1768.
   D) Tonga Tattoo Women. Krutak #Hawaiian Tattoos


Fig 8. L to R. Above & Below.


C) Hōkūleʻa. https://alchetron.com/Hokulea


Fig 9. Polynesian Stick Chart.
http://www.ourpacificocean.com/micronesian_stick_chart/index.htm


Fig 11. Wa’a Kaulua Double Canoe: 1975 First Voyage. 1976/ben_finney.html


Fig 13. Hawaiian Space Dome.

Fig 14. Star Visitor’s Landing Area.
https://www.exopolitics.org/page/30/?search=predictions
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