

TAVAKEFAI'ANA, SĒMISI FETOKAI KULĪHA'APAI
MOAHEHENGIOVAVA'ULAHĪ POTAUAINE
HŪFANGA-HE-AKO-MOE-LOTU, 'ŌKUSITINO MĀHINA

Fonua as fakafelavai (intersection) of 'uta (land) and tahi (sea): Material arts of tufunga langafale (land-architecture or house-building) and tufunga fo'uvaka (sea-architecture or boat-building)

Talaleatefito (Keywords)

Tāvāism as time-space philosophy of reality; *fonua* (people and place) as *fakafelavai* (intersection) of 'uta (land) and tahi (sea); *talatupu'a* as cosmogony and cosmology; and *tufunga langafale* as material art of land-architecture or house-building and *tufunga fo'uvaka* as material art of sea-architecture or boat-building.

Talakamata (Introduction)

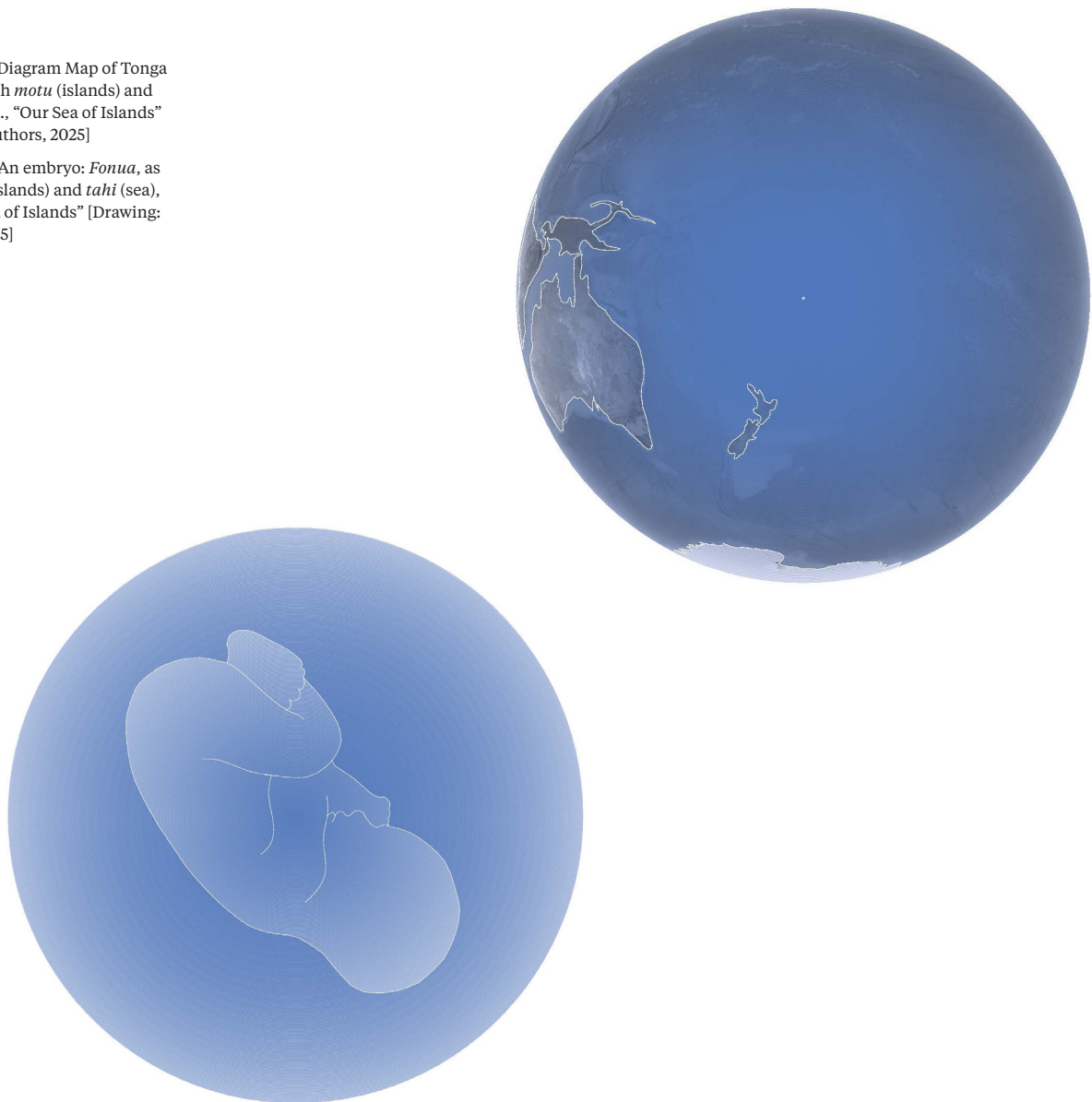
This essay briefly summarises in new ways the Tongan philosophy of *fonua*, itself understood as the *fakafelavai* (intersection), *fakahoko* (connection), and *fakamāvae* (separation) of 'uta (land) and tahi (sea).¹ These natural entities condition the Tongan material arts of *tufunga langafale* (land-architecture or house-building) and *tufunga fo'uvaka* (sea-architecture or boat-building)—themselves understood to intersect architecture and engineering,² in addition to other disciplinary and social activities.³ Combined, these natural entities and social activities comprise Tongan cosmogonical and cosmological accounts, all of which begin with the emergence of *fonua* (i.e., land and sea). The sea movement and land settlement of both the earthly people and godly build on this emergence further permitting the development and refinement of their heroic deeds. Borne from these earthly and godly activities, land-architecture and sea-architecture support other social and religious spheres, as in the land-based and sea-led (and sky-driven) activity of *faiva faifolau*, where, for instance, land-sea(-sky) travelling is portrayed through performance art.⁴

These combined *tā-vā* (temporal-spatial) natural entities, along with accompanying social activities as a 'text,' are viewed and reviewed here in the general 'context' of *TāVāism*, a Tongan time-space philosophy of reality.⁵ *TāVāism* recognises, through an inseparable joining of *hoa/soa* (or pairs), a single level of reality in which *tā* (time) is a *fakafuo* (definer) of *vā* (space) and, in turn, *vā* (space) is a *fakauho* (composer) of *tā* (time).⁶ We focus here through reflective thinking

and emotive feelings on three Tongan ethnographic groups or clusters: firstly we consider the *vaka* (boat), *fale* (house) and *ouau kava-tō* (kava-sugarcane ceremony); secondly we consider the *falevaka* (boathouse) or *faletahi* (sea-house),⁷ and *faleafolau* (houseboat) or *vakaʻuta* (land-boat),⁸ i.e., *tohoʻangavaka* (boat-hangar/hanger); and, thirdly we address the *fataʻufi* (yam pyramid structures or platforms) and the *Vaka-ʻa-Hina* (Boat-of-Hina).⁹ What these considerations allow us to do is understand the important role of the aqueous in Tonga’s material, cultural, and spiritual practices. The latter offer ‘texts’ for focusing on both architecture and engineering, given, on one hand, their intersecting, connecting, and separating of temporal-spatial, formal-substantial entities, and on the other, their assisting and resisting of forces. More broadly, the arts of architecture and engineering give us a better comprehension and appreciation in the ‘context’ of the current *fonua* (human-environment, society-ecology) itself in crisis due notably to climate change.

Ata (Fig.) 1a Diagram Map of Tonga as *fonua*, both *motu* (islands) and *tahi* (sea), i.e., “Our Sea of Islands” [Drawing: Authors, 2025]

Ata (Fig.) 1b An embryo: *Fonua*, as both *motu* (islands) and *tahi* (sea), i.e., “Our Sea of Islands” [Drawing: Authors, 2025]



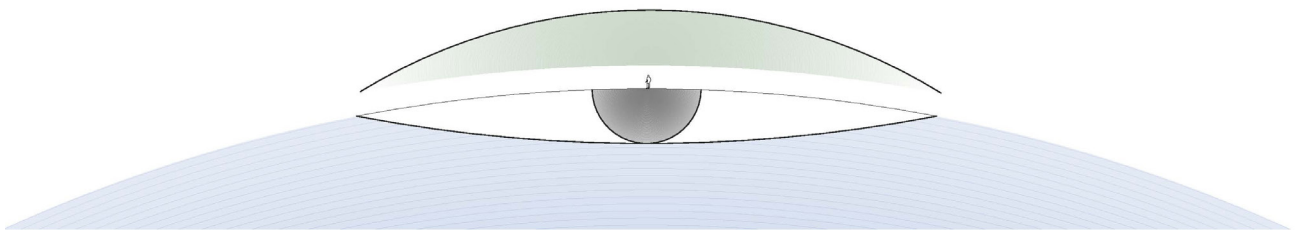
Talatupu'a (Cosmogony and cosmology)

Tongan *talatupu'a* (cosmogony and cosmology) account for the *tā-vā* (temporal-spatial) origin, growth, and development of the Tongan people, inclusive of their universe. It begins with the emergence of *fonua*, the *fakafelavai* (intersection) or *fakahoko* (connection), and *fakamāvae* (separation) of land and sea as primary natural entities. The appearance of human and the godly beings they worship build on this primary emergence. Human activities like *tufunga* (material arts) associated with land-architecture or house-building and sea-architecture or boat-building (themselves associated with the performance art of *faiva fai-folau*—voyaging—or *faiva toutaivaka*—navigation follow in turn).¹⁰

For our chief purposes, Māhina and Ka'ili¹¹ provide a window onto the beginning of Tongan cosmogony and cosmology:

In the beginning were the *Vahanoa*, the Vast Expanse of *Tahi* (Sea), and *Pulotu*, the Ancestral Homeland and Afterworld, which begat the *Tou'ia'ofutuna*, the *Maka* (Rock), which begat the four *Hoa/Soa* (Pairs, Dualities or Binaries) of 'Uta (Land) and *Tahi* (Sea) Elements,¹² which begat the four sets of *Tangata* (Male) and *Fefine* (Female) *Māhanga* (Twins), which begat the three 'Otua (Deities), Hikule'o, Maui and Tangaloa (and later the fourth Goddess Hina)—respectively residing in *Pulotu* (Ancestral Homeland and Afterworld), *Maama* (Earth), and *Langi* (Sky) (and *Māhina* [Moon]), linked through ongoing tripartite relations of trade and exchange, including knowledge, skills, and technology transfers.¹³

Of immense parallel interest is the biblical account of God's creation of the 'uta (land) and tahi (sea) as seen in the following short verses: "And God said, 'Let the water under the sky be gathered to one place, and let dry land appear [. . .] And it was so. God called the dry ground 'land,' and the gathered waters he called 'seas.' And God saw that it was good."¹⁴

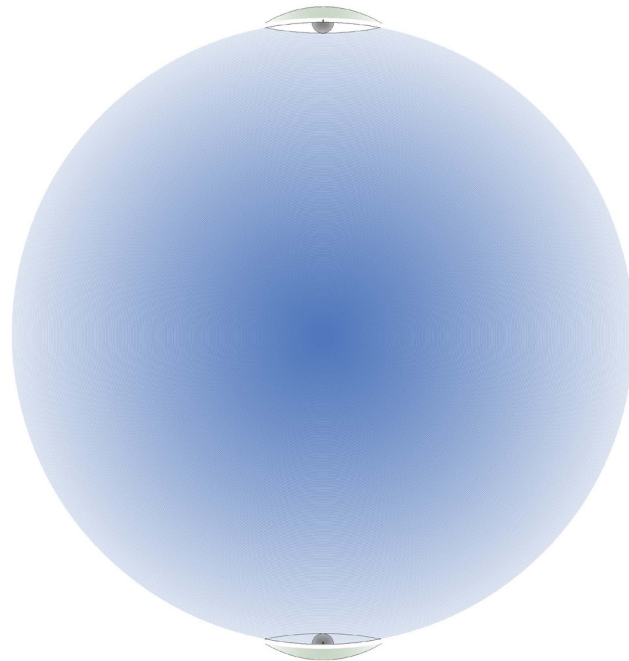


Ata (Fig. 2a) A sectional diagram
falekava-vaka [Diagram, Authors,
2025]

Fonua (People and place): The intersection of 'uta (land) and tahi (sea)

The Tongan philosophical notion of *fonua* is constitutive of the land and sea, which from the beginning, cause all entities to be indivisibly placed in time and space. It mirrors the famous dictum by Epeli Hau'ofa: "Our Sea of Islands," which translates into Tongan as "*Hotau Tahi 'Otumotu*," where Moana Oceania can be generally defined as "lands *fakafelavai* (intersected) (or *fakahoko* [connected] and *fakamāve* [separated]) by *tahi* (sea), *moana* [ocean], or *vai* (water), i.e., '*otumotu* (islands)."¹⁵ The word *fonua* also means *kakai* (people) and 'ātakai (environment), along with 'uta (land), *tahi* (sea), and *langi* (sky), i.e., landscape, seascape, and skyscape. *Fonuaism* exists as a philosophical notion across Malay-Moana Oceania (now Austronesia) and wider Moana Oceania as *banua*, *hanua*, *vanua*, *fanua*, *fenua*, and *whenua*, commonly meaning both *kakai* (people) and 'ātakai (environment).

Ata (Fig.) 2b A sectional diagram:
three *fonua* as placenta, earth, burial
place in a back and forth, cyclical
process of past-present-future
(house-boat), on spherical earth.
[Diagram: Authors, 2025]



There are three types of Tongan *fonua* indicating a cyclically diversified, yet unified, movement from *fā'ele* (birth), through *mo'ui* (life), to *mate* (death). The first *fonua* defines *fā'ele* (birth) and is marked by the *valevale* (fetus) and *taun-gafanau/manava* (mother's placenta/womb) (*Ata* (Fig.) 2). The second *fonua* expresses *mo'ui* (life) and is demarcated by the *kakai* (people), and 'ātakai (environment), while the third is marked by the *mate* (dead) and the *tanu'anga* (burial place). Whereas the fetus, people, and dead are the *fakafuo/fakatā* (temporal/formal definers) of the mother's placenta/womb, environment and burial places, the mother's placenta/womb, environment, and burial place are, in turn, *fakau-ho/fakavā* (spatial/substantial composers) of the fetus, people, and the dead.¹⁶

'Aati FakaTonga (Tongan arts): Faiva (performance arts), tufunga (material arts), and nimamea'a (fine arts)

Tongan arts are generally divided into three genres: *faiva* (performance arts), *tufunga* (material arts), and *nimamea'a* (fine arts).¹⁷ In old Tonga, 'aati (arts) were closely aligned to *ako* (education), where they were mutually organised to focus on knowledge and skills, along with beauty and utility. In both cases, knowledge and beauty took precedence over skills and utility. That is, the more knowledgeable and beautiful, the more skillful and useful and, by extension, the more skillful and useful, the more knowledgeable and beautiful. Whereas beauty is aesthetically concerned with *tatatu* (symmetry) and *potupotutatau* (harmony) as a creative process, utility is emotionally linked to *māfana* (warmth) and *vela* (fineriness)¹⁸ as a communicative outcome, in the logical order of precedence.¹⁹

While the Tongan performance arts are *tefito-he-loto-sino* (body-centred, i.e., inside-the-body), both the Tongan material and fine arts are *tefito-he-tu'a-sino* (non-body-centred, i.e., outside-the-body), with both the performance and material arts seen as largely *tefito-he-tangata* (male-led), and fine arts as mainly *tefito-he-fefine* (female-based). The performance, material, and fine arts of *faiva*, *tufunga*, and *nimamea'a* literally means 'doing-time-in-space,' 'marking-time-in-space,' and 'defining-time-in-space,' respectively, and are themselves expressions of *tā-vā* (time-space), *fuo-uho* (form-content), on both abstract and concrete levels.²⁰

Both boat-building and house-building, belonging to the material arts, are considered the material art-form of architecture and engineering.²¹ They are commonly concerned with the constant yet consistent *fakatatau* (mediation) of intersecting (or connecting and separating) time-space, form-content and

Ata (Fig. 3) Webber's Cook's Reception, 1777, in concentric circle *mata-ava* (eye-hole) [Source: Auckland Art Gallery Toi o Tāmaki]



opposite *ivi* (energies or forces) each carrying both historical and metaphorical tendencies. The three selected ethnographic examples that will be *tāvāistical-*ly discussed below—like the three arts and *fonua* described above—are *tā-fuo* (time-form)-defined, *vā-uho* (space-content)-composed, with all being expressed through vortex-led, helix-type, spiral-like formations or *kupesi*,²² including the DNA-like *mata-ava* (eye-hole) formations.²³ This is aligned to the *tāvāist* philosophical belief that it is in the *mata-ava* (eye-hole), vortex-led, helix-type, spiral-like or *kupesi* DNA-like formations²⁴ that time-space (form-content) configuration of *me'a* (matter) as *ivi* (energy) finds its most *matolutu'u* (dense) and *mālohitu'u* (intense) expression.

Tā-Vā: A Tongan (time-space) philosophy of reality

Tāvāism has a plurality and complexity of general and specific ontological and epistemological tenets²⁵ which include, inter alia, the following:

1. That *tā* and *vā* (time and space) as ontological entities are the common *vaka* (vessels, vehicles, or mediums) of existence carrying all things within a single reality.²⁶
2. That time and space as epistemological identities are differently organised across cultures (and languages), in plural, temporal-spatial, formal-substantial, collectivistic, holistic, and circular ways.
3. That *'ilo* (knowledge) and *poto* (skills) are themselves derived from time and space and *fuo* (form) and *uho* (content), on both the abstract and concrete levels.
4. That knowledge and skills gained in education as a transformation of the human mind and heart from *vale* (ignorance) to knowledge and on to skills, are composed in *fonua/kalatua* (culture) and communicated in *tala/lea* (language) as mere *vaka* (vessels).²⁷
5. That the already-taken-place past is put in the front as guidance and the yet-to-take-place future is placed in the back so it is guided by past experiences, with both the illusive past and elusive future being constantly and consistently mediated in the ever-changing present held centre-most.
6. That time and space, as abstract dimensions of form and content which are, in turn, the concrete manifestations of time and space, are themselves *tafa'akifā* (four-dimensional i.e., form, depth/height, length and breadth/width) in nature and not *tafa'akitolu* (three-dimensional i.e., form, depth/height, length and breadth/width only) in character.²⁸
7. That time and form are the *fakafuo/fakatā* (definers) of space and content which are, in turn, the *fakauho/fakavā* (composers) of time and form.
8. That all things in a single level of reality stand in eternal relations of exchange, giving rise to *fepaki/felekeu* (conflict) and *fenāpasi/maau* (order).
9. That conflict and order are of the same logical status, where order is an expression of the conflict, when equal and opposite *ivi* (energies/forces) meet at a common point, defined by a state of 0 or *noa* (zero-point).
10. That everywhere in reality is *fakafelavai* (intersection), and there is nothing beyond *fakahoko* (connection) and *fakamāvae* (separation).

11. That everywhere in reality is *hoa/soa* (pair/duality/binary), and there is nothing above *hoakehekehe/hoatamaki* (opposite/dissimilar pairs) and *hoamālie/hoatatau* (equal/similar pairs).

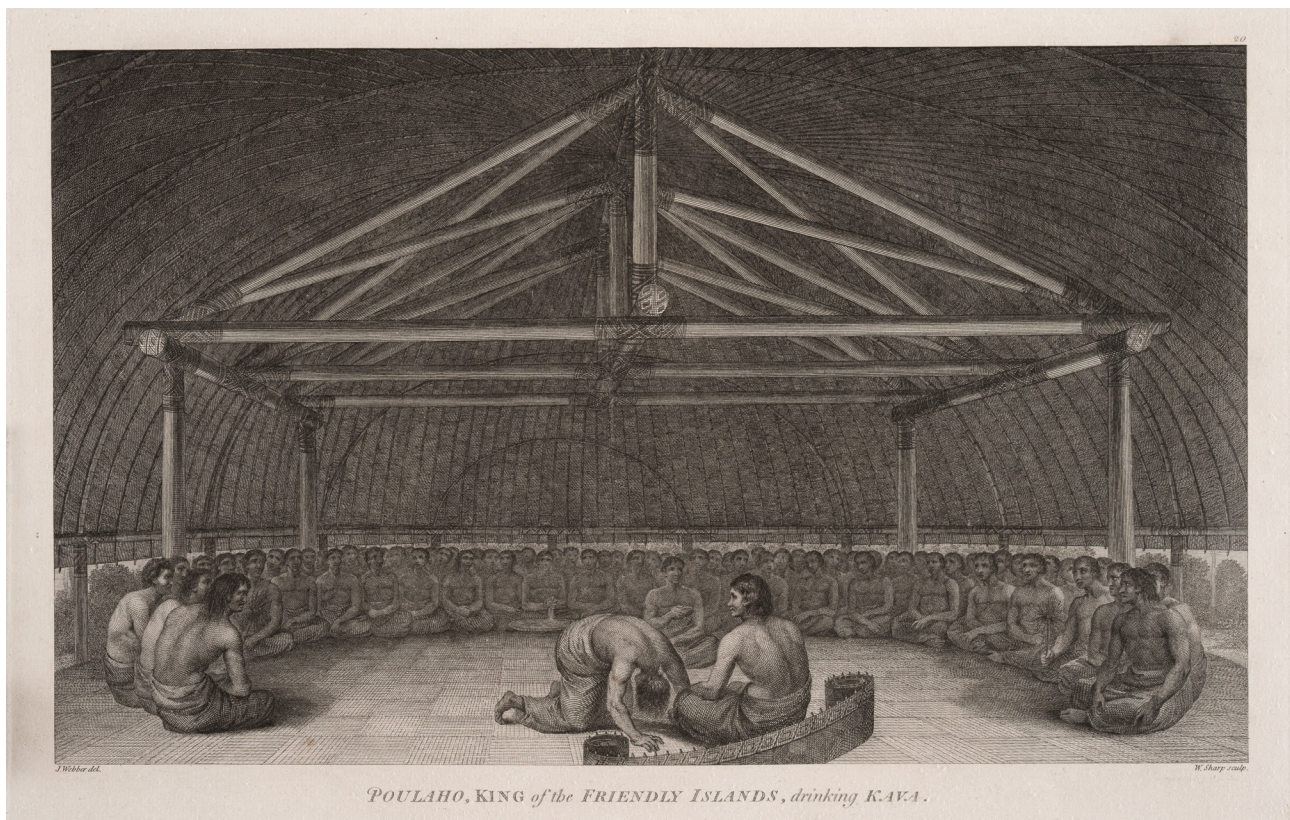
12. That *mata-ava* (eye-hole) is the intersection (or connection and separation) of two *kohi/laini* (or lines); a line is the collection of eyes-holes; and *vā* (space) is the summation of lines.

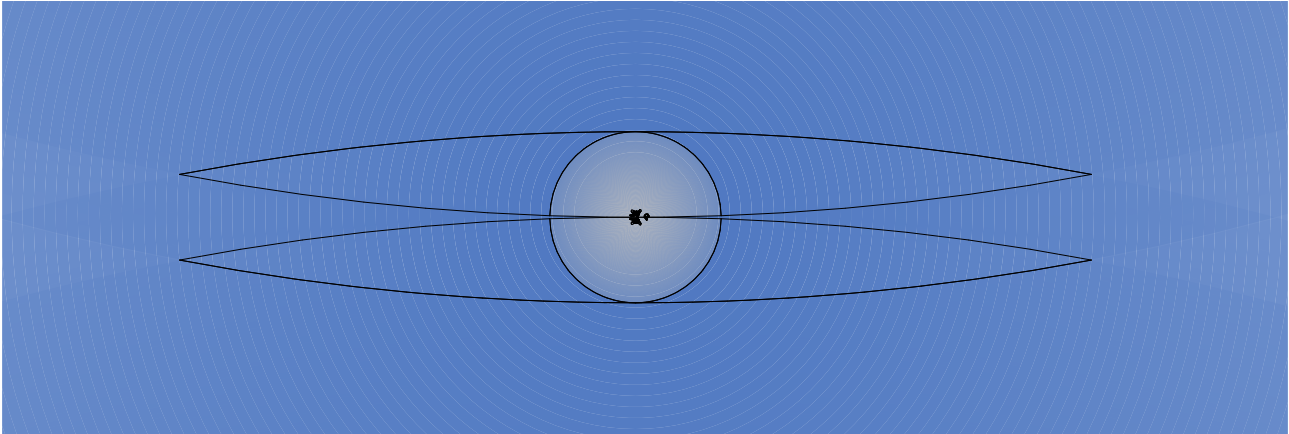
13. That eye-holes are where *tā-vā* (time-space) as *me'a* (matter) as *ivi* (energy) is most *matolutu'u* (dense) and *mālohitu'u* (intense).

***Ouau kava-tō* (kava-sugarcane ceremony), *vaka* (boat), and *fale* (house)**

Oral history tells that, upon the arrival of the first people in Tonga, they initially lived in caves and tree trunks, until it occurred to them to turn their *vaka* (boats) upside-down to form *fale* (houses) by adding four *pou* (posts) as upright support. They celebrated their safe arrival in Tonga by ceremonially *inu kava* (drinking kava) and making *feilaulau* (offerings) to the gods of the *matangi* (winds) and *tahi* (sea), i.e., *peau/ngalu* (waves), Lulu and Lātū, in the space between the *faliki* (floor) below and the 'ato (roof) above.²⁹ So, the kava ceremony was created at the connection and separation (or intersection) between the *vaka* (boat) as a "*fale-fakafo'ohake*" (upside-down house) and *fale* (house) as a "*vaka-fakafo'ohi-fo*" (downside-up boat). The kava ceremony, like the boat and house, was given *fuololoa* (ovular) (or in some cases *fuopotopoto* [circular]) form, with the key positions named after the boat, for instance, with the presiding chief at the front

Ata (Fig. 4a) Webber's *Pau* drinking /eating *kava/tō* (Vaka [Boat] & Fale [House]) [Source: Auckland Art Gallery Toi o Tāmaki]





Ata (Fig. 4b) Vaka [boat] plan
diagram [Diagram: Authors, 2025]

as if in the *olovaha* (bow, thereby opposite the back)—and given the role of *tou'a* (kava-maker, anchor). On either side are placed the *'alofi* (rowers).³⁰

All three constitutive components are respective forms of *tufunga* (material arts) and *faiva* (performance arts), all of which are morphodynamic, hydrodynamic, and aerodynamic in mode of operation.³¹ They are forms of protection from the winds, including the *'uha* (rain) and the *la'ā* (sun). The winds, waves, and rain are mere *vaka* (vessels) for the movement of *ivi* (energy)³² as intersecting (or connecting and separating) tendencies. These are further *fakatatau* (mediated) as vehicles for the conduct of such performance arts of *faiva faifolau* (voyaging) (i.e., *faiva toutaivaka* [navigation])—notably their eyes-holes by way of process and outcome. Besides the material arts of land-architecture or house-building, and sea-architecture or boat-building as both architecture and engineering, there is a multiplicity of other associated performance, material, and fine art-forms, notably *faiva milolua* (kava-making), *tufunga lalava* (house-boat-lashing), and *nimamea'a lālanga* (mat-weaving).³³

Falevaka (boathouse) and faleafolau (houseboat)

The *falevaka* (boathouse) and *faleafolau* (houseboat) are the common derivatives of the *fale* (house) as a “*vaka-fakafo'ohifo*” (down-side-up boat) and *vaka* (boat) as a “*fale-fakafo'ohake*” (upside-down house) and *vaka* (boat) as an “upside-down *fale* house.” All these are generally derived from the *fale fakaManuka* (house in the-style-of-Manuka) (*Manu'a* in Sāmoan) which is commonly *fuololoa* (ovular) (and occasionally *fuopotopoto* [circular]) in form (and content). While the house and boat are constitutive in nature, the boathouse and houseboat are separative in character. Whereas the house and boat are vertically exchanged through inversion, the boathouse and houseboat are horizontally exchanged through substitution.³⁴

Falevaka (boathouse) is “*fale-i-vaka*” (house-in/on-boat), i.e., now ‘on the boat’ as “*faletahi*” or “*fale-i-tahi*” (house-in-the-sea) on the boat in the sea. The *faleafolau* (houseboat) is “*vaka-i-fale*” (boat-in-house), i.e., now ‘in the fale’ as “*vaka'uta*” or “*vaka-i-'uta*” (boat-in-the-house), in the house on land. Both the boathouse and houseboat belong in the material arts, e.g., landscape-architecture or house-building and sea-architecture or boat-building (where the material art of engineering focusing on the mediation of equal and opposite energies or forces). They are respectively concerned with the mediation of intersecting tendencies

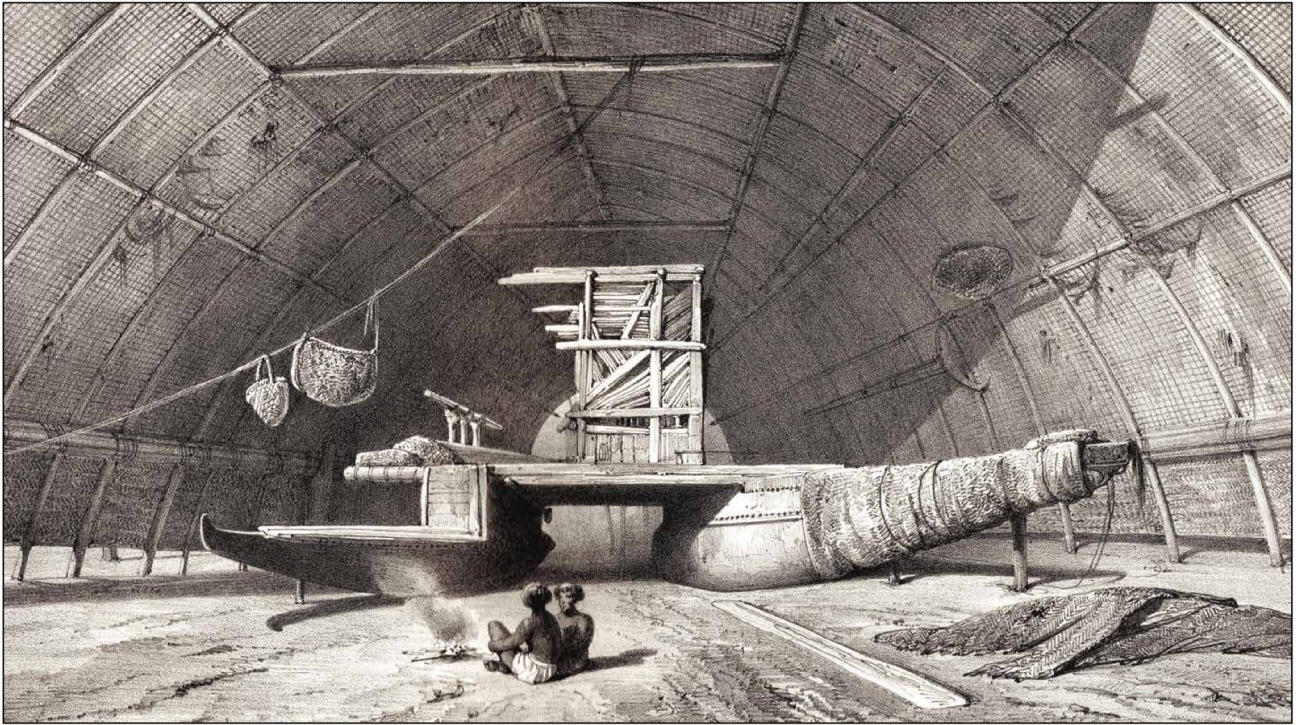
between *tā* and *vā* and opposing forms of *ivi* (energy) enacted within and across various processes and outcomes. The boathouse moves away from land to sea as opposed to the houseboat shifting away from sea to land. Their opposite two-way movement between land and sea are morphodynamically mediated at the intersection (or connection and separation) of *matātahi/matāmoana/matavai* (eye-of-the sea/ocean/water) and *matā'uto'uta/matāfanga/matātongo* (eyes-of-the-land/anchorage/mangroves).³⁵

Besides the 'eating away' of the *matātahi/matāmoana/matavai* (eye-of-the sea/ocean/water) and *matā'uto'uta/matāfanga/matātongo* (eyes-of-the-land/anchorage/mangroves) by the winds and waves, morphodynamics is also linked to landscape changes in the formation of distinct topographic features caused by erosional and depositional processes and outcomes due largely to 'uha (rain), winds, and waves. The same also applies to both aerodynamics and hydrodynamics linking winds and waves respectively. These morphodynamic, aerodynamic, and hydrodynamic forces have bearings on the land and sea in the material arts relating to land-architecture or house-building and sea-architecture or boat-building, including the associated performance arts of *faiva faifolau/toutaivaka* (long-distant voyaging/navigation) and *faiva toutaiika* (deep-sea fishing) and the performance art of *faiva fānifo* (surfing).³⁶

Of immense interest are the common temporal-formal marking and spatial-substantial composing of the boathouse and houseboat in their angular arrangements, placing their pointed-ends down and wider ends above. By way of comparison, the Sydney Opera House is a collection of boathouses and houseboats, at the intersection (or connection and separation) of land and sea. Like the Tongan boathouses and houseboats, the Sydney Opera House is arranged in angular ways. But, unlike the Tongan boathouses and houseboats, the arrangement of the Sydney Opera House involves placing the wider ends below and the pointed ends above. That is, in that respect, the Tongan boathouses and houseboats are the opposite of Sydney Opera House.³⁷ The same inversion can be seen in the way sails are oppositely arranged in Tonga and the West, morphodynamically, aerodynamically, and hydrodynamically.

Ata (Fig. 5a) *Vava'u falevaka*
(boathouse) on a sailing double-
hulled *kalia* (canoe)/*vaka* (boat)
[Source: Museo de America, Madrid]



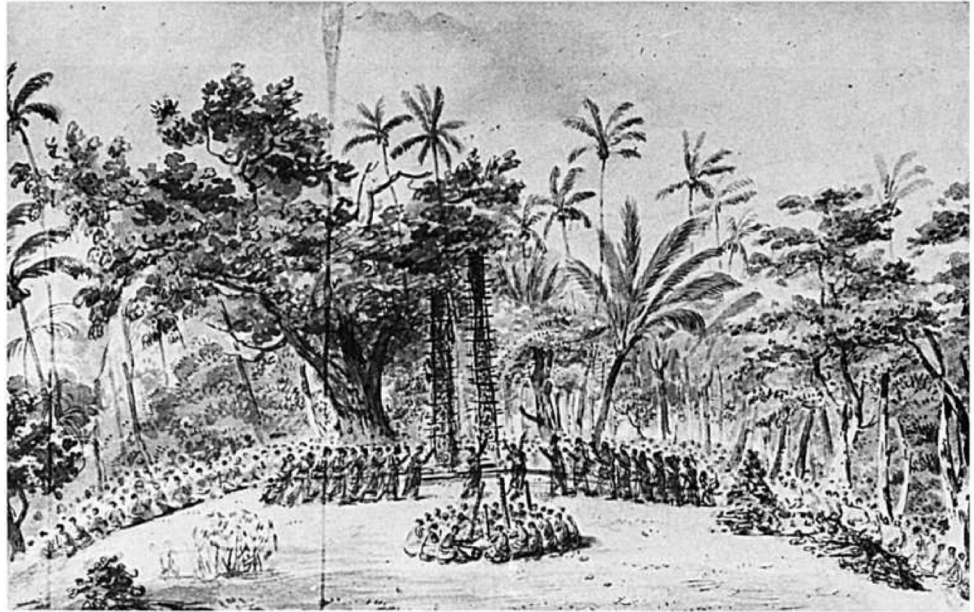


Ata (Fig. 5b) Tongatapu falealafolau (houseboat) with *tufunga* (architectural and engineering artists) at work [Source: Dumont d'Urville 1846]

***Fata'ufi* (yam pyramids, structures or platforms) and *Vaka-'a-Hina* (Boat-of-Hina)**

Captain James Cook, in his third and last voyage in 1777, observed firsthand the building of *fata'ufi* (yam pyramids, structures or platforms) in progress during the *kātoanga 'Inasi* ('Inasi festival) in his brief stay on the main island of Tongatapu, in Tonga. This was followed by his earlier equally impressive reception on the island of Lifuka, in Ha'apai, by notable chief and warrior Finau 'Ulukālala. The Tu'i Tonga, Pau, came on board to invite him to be a special guest at a royal reception in his honour the same day. Following breakfast, Cook attended the Tu'i Tonga ashore and witnessed his people very busy at work, building a square tower defined by four, very long, upright posts, approximately two feet from one another. The space between the posts were then filled up with yams held in place by fixing sticks spanning from post to post at a length of about every four feet. As they reached the top of these posts they fastened others to them as they continued until each pile was some thirty feet or more in height. On the top of one they placed two baked hogs, while on the top of the other was placed a living animal, and further down, about half way, was tied another. Cook was highly impressed and noted the knowledge and skills, creativity and innovativity deployed by the people building these two structures. Comparing these abilities with his own seamen, he determined that they could not achieve the same structures without skillful carpenters and a dozen different types of tools, nor without a hundred weight of nails. Even with these things, it would take the Europeans several days to achieve what the Tongans did in hours. After filling up these two piles, they completed several other heaps of yams and breadfruits on both sides, adding a turtle and a huge quantity of excellent fish. This was all the Tu'i Tonga's gift to Cook, an offering which far exceeded what he had received in Ha'apai.³⁸

Both structures belong to the *tufunga* (material arts), specifically the old *tufunga langafata'ufi* (yam pyramid-building) and the new *tufunga tongiukamea*



Ata (Fig. 6a) Webber's *fata'uafi* (yam pyramids), displayed, Tongatapu, 1777 [Source: National Maritime Museum, Greenwich, London]

(steel-cutting). The yam pyramids and Boat-of-Hina are human-made structures enacted for more than two centuries now (the former in 1777, and the latter in 2019). In comparison, both express the continuity and changes in the intellectual-emotional, practical, material, and technological dimensions of life. A mixture of both land-based and sea-based resources were displayed in Cook's account, with its exhibition of plenty and dignity, beauty and utility—where the two tall upright yam pyramids were filled with excellent *kahokaho* (yams) and *puaka* (pigs) as chiefly food—surrounded by piles of 'uafi (yams) and *mei* (breadfruits), including a *fonu* (turtle) and huge quantity of the best *ika* (fish) as chiefly delicacies defining a circular, peripheral enclosure. The *fananga* (legend) goes that goddess Hina regularly travelled on her *vakavavā* (spaceship) between the *Maama* (Earth) and the *Māhina* (Moon), her divine abode, where she practiced her fine art of barkcloth-making workshop.³⁹

Both the yam pyramids and the Boat-of-Hina are based on the *kupesi* (geometric design) of *fata*,⁴⁰ the internal vertically sharp-ended triangular part of the house on top of the four *pou* (posts) holding together the 'ato (roof). In addition, there are other *kupesi* (geometric designs) used by the yam pyramids and the Boat-of-Hina, notably the *fata-'o-Tu'i-Tonga*, *manulua*, *tokelau-Feletoa*, and *veimau* as abstractions of pall-bearers of Tu'i Tonga, including the royal tombs, two-birds-flying, internal architectural and engineering structures of the fortress of Feletoa and checkerboard or ordered water-flow patterns respectively. Ontologically, yet epistemologically, both material artworks are a collection of connecting and separating (or intersecting) eyes-holes defining temporal-spatial, formal-substantial entities, in vortex, helix, *kupesi* or DNA-like formations, constantly moving in multi-directional and multi-dimensional ways.⁴¹

Talangata (Conclusion)

We have fused, yet also diffused, our specific text according to Tongan *fonua*, itself defined by land and sea in the Tongan material arts of land-architecture or house-building, and sea-architecture or boat-building. Importantly, these arts have morphodynamic, aerodynamic, and hydrodynamic affects and

Ata (Fig. 6b) Tavakefai'ana's Vaka-
'a-Hina (Boat-of-Hina), displayed,
Christchurch, 2019 [Source:
majid2019]



effects consistent with the general 'context' of *Tāvāism*, the Tongan (and Moana Oceanian) time-space philosophy of reality. While there are different ways of knowing and feelings, there is only one single level of reality, with the latter preceding the former. That is, the ontological, with its ways of being, is the only measure of the epistemological with its various ways of knowing, feelings, and doing.

Specifically, these reality-given and society-made ways of being are generally rooted in the *tāvāist* ontological and epistemological tenets. Evident across both process and outcome, these types of 'textualised' natural entities (viz., land and sea), and forms of disciplinary and social identities (viz., material arts of land-architecture or house-building and sea-architecture or boat-building) are *tāvāistically* 'contextualised.' As diverse connecting (or connecting and separating) temporal-spatial, formal-substantial tendencies, both converge and find expression in eye-hole patterns—where *me'a* (matter) as *ivi* (energy) made dense and intense are shown in vortex-like, helix-type, *kupesi*, DNA-like formations.⁴²

Tala'apenitekisi (Appendix) 1

The five *kupu/veesi* (verses) below are taken from Lulu and Lātū as an ancient twenty-five-verse long sung and danced poetry⁴³ addressed as prayers to voyaging/navigation and celebration. They are performed as a *me'etu'upaki* dance literally meaning “standing-and-dancing-with-miniature-*paki*-paddles.” The poetry is beautifully sung in the *afo fa'ahikehe* (minor tune) and gracefully danced with the *paki* (miniature paddles) as an extension of the *sino* (body) as *fakafelavai* (intersecting) or *fakahoko* (connecting) and *fakamāvae* (separating) bodily movements, i.e., in interlinked spiral motions. Further, it undergoes structured *liliu fasikehe-fasikehe* (melody changes), *liliu tāvātuai-tāvāvave* (tempo-spacio changes), *liliu tōma'olalo-tōma'olunga* (key changes) and *liliu le'osi'i-le'olahi* (volume changes) through sustained *tatau* (symmetry), *potupotutatau* (harmony), and *mālie/faka'ofa'ofa* (beauty), resulting in energy-like feelings of *māfana* (warmth), *vela* (fieriness), and *tauēlangi* (climactic elation). It surely does so by invoking and evoking a beautiful and useful healing process for the body, mind, and heart, one having enormous therapeutic, psychoanalytic, or hypnotic significance and relevance.

The language used is largely unintelligible to living Tongans, probably proto-Moana Oceania. This sung and danced poetry was a prayer addressed by ancient navigators/voyagers to the gods of the winds and sea or waves, Lulu and Lātū, seeking their divine protection, and asking for pacific conditions in insuring and ensuring a safe voyage (verses 1 and 2). It also talks about sailing and paddling techniques and celestial navigational objects (verses 3 and 4), while telling of a long and arduous voyage from northwest Moana Oceania through many of the islands, recounting perilous and dangerous wind and sea conditions, sea birds, and celestial and terrestrial navigational objects (e.g., Taputea, i.e., Venus; verse 4, line 1). It also recalls key landmarks and ports of call such as Tālava (Tarawa), Kiribati; Funafuti, Tuvalu; 'Uvea; Sāmoa; and Suva, Fiji, all the way to Tonga (verse 5). Upon arrival, it tells of preparing *kava* for drinking, making *feilaulau* (offerings) to Lulu and Lātū, and of feasting, singing, and dancing (verse 5).⁴⁴

Lulu mo Lātū (Lulu and Lātū)

An ancient sung and
danced prayer poetry
related to navigation and
celebration

Poetry, music, and dance
by an anonymous master
poet

English translation by
Kolokesa Uafā Māhina-
Tuai; Tavakefai'ana,
Sēmisi Fetokai Kuliha'apai
Moahengiovava'ulahi
Potauaine and Hūfanga-
He-Ako-Moe-Lotu,
'Ōkusitino Māhina

1. Ko Lulu ē! Ko Lulu ē!
Ko Lulu ē! Sua mai matē!
Fakapō! Sua mai sua mai
Fakapō! Sua mai sua mai
'Ī-ī-ā! Tū-ū-ū!

2. Ko Lātū ē! Lātū ē!
Pe'i tonga mu'a kae tokelau⁴⁵
Pale ki vā tapu i le lā
Kae liua manu o le vaha
Kae tākoi si'ene nga'uta
'Ī-ī-ā! Tū-ū-ū!

3. Laku tā ē! Laku tā ē!
Laku tā, siki poi ē!
Siki poi ē! Siki poi ē!
Siki 'olunga, mata'u fohe
Ma'u ē tātā mālīe
Siki poi ē! Siki poi ē

4. 'Oi Taputea! Taputea mai!
He uia malama i le tai
'Oi suluia lau pengatuia
He uia malama i le uia
'Ī-ī-ā! Tū-ū-ū!

5. 'Oi anu mai fai mai!
Tapu lā ē moe i le tai
Velo ē sila Tālava ē
Vaka 'i Suva kite fanua
Afe mai tuli ki Nanumea
Afe ki 'Uvea 'a vakatu
Tonu mo tau 'i tu'ahakau
Fakahakea kiai te vaka
Ki Tapunasili mo Lotevai
Ke fālō mai nai ē
Kā ko Tonga pasipasi mai
Ke puna kotoa ē! 'To ē ē!

1. Oh dear Lulu! There's Lulu!
Oh dear Lulu! Bring life-saving winds!
Alas! Let there be winds
Alas! Let there be winds
'Ī-ī-ā! Tū-ū-ū!

2. Oh dear Lātū! There's Lātū!
Blow from south then north
Sacred space, sheltered sail
The seabird returns to land
The sign of a good catch
'Ī-ī-ā! Tū-ū-ū!

3. Mark your beat! Mark your pace!
On your mark, twist and turn
Turn and twist, twist and turn
Hold up, your right paddle
Grip tight, row in rhythm
Twist and turn! Turn and twist

4. Oh Taputea! Shining Taputea!
Let there be light on the sea
Oh knowledge providers of life
Light up the sea, we beseech thee
'Ī-ī-ā! Tū-ū-ū!

5. Stay afloat, and be safe
Sails down, now sleep
Sails up, there is Tarawa
Boat to Suva, now appears
Turn in haste to Nanumea
Then to 'Uvea, drop anchor
Keep outside the outer reefs
And sail the boat straight
To Tapunasili and Lotevai
To replenish and refurbish
As we safely sail to Tonga
Where we celebrate! Oh yae yae!

Talakolosaliō (Glossary of Tongan words)

		Fakaʻofaʻofa	Beauty; also see mālie (beauty), old term for fakaʻofaʻofa (beautiful)
		Fakatā	Temporal definer; also see fakafuo (formal composer)
		Fakatamaki	Crisis
		Fakatupu	Create; also see fakatupu (creation)
		Fakauho	Substantial composer; also see fakavā (spatial composer)
		Fakavā	Spatial definer; also see fakauho (substantial definer)
		Fālahi	Width; also see maokupu (width)
		Fale	House
		Fale fakafoʻohake	Upside-down house, i.e., vaka (boat); also see vaka fakafoʻohifo (downside-up boat), i.e., fale
ʻAati	Art	(house)	
Ako	Education	Faleafoiau	Houseboat; also see vakaʻuta (land-boat)
ʻAonga	Utility; also see ʻaonga (useful)	Faletahi	Sea-house; name; also see falevaka (houseboat)
ʻApenitekisi	Appendix	Falevaka	Boathouse; also see faletahi (sea-house)
ʻAta	Image, mirror, picture or photo	Fataʻufi	Yam pyramid
ʻAta-ki-loto	Abstract	Fatu	Heart; also see mafu (heart)
ʻAta-ki-tuʻa	Concrete	Fefine	Female
ʻAtamai	Mind	Fefusiaki-Fetekeaki	Force
Ava	Hole	Felekeu	Chaos, conflict; also see fepaki (chaos, conflict)
Faʻahifā	Four dimensions (4D), viz., fuo (form), maʻolunga/loloto (height/depth), loloa (length) and maokupu/fālahi (breadth/width), i.e., time-space, form-content; also see tafaʻakifā (four-sided-dimensionality)	Fenāpasi	Order; also see maau (order)
Faʻahitolu	Three dimensions (3D), viz., maʻolunga/loloto (height/depth), loloa (length) and maokupu/fālahi (breadth/width), i.e., timeless/formless; also see tafaʻakitulu (three-sided-dimensionality)	Fepaki	Chaos, conflict; also see felekeu (chaos, conflict)
Fāʻele	Birth	Fonu	Turtle
Faifolau, faiva	Voyaging, performance art of; also see toutaivaka, faiva (navigation, performance art of)	Fonualoto	Burial place
Faiva	Performance art	Fonuaʻuta	Fonua-in-the-land, i.e. people in the land
Fakafelavai	Intersection	Fonuatahi	Fonua-in-the-sea, i.e., people in the sea
Fakafuo	Formal definer; also see fakatā (temporal definer)	Fonutahi	Sea turtle
Fakahoko	Connection	Fonuʻuta	Land turtle
Fakamālō	Acknowledgement; also see fakamālō (thank-you)	Fonua	Land and sea; land-sea and its people; also see its regional variations banua, vanua, fanua, fenua, hanua, and whenua (land and sea, i.e., land-sea and its people)
Fakamāvae	Separation	Foʻuvaka, tufunga	Sea-architecture or boat-building, material art of
		Fuo	Form; also see fuo (time)
		Fuo-Uho	Form-Content/Substance

Fonua as fakafelavai (intersection) of *ʻuta* (land) and *tahi* (sea):
Material arts of *tufunga langafale* (land-architecture or house-building)
and *tufunga foʻuvaka* (sea-architecture or boat-building)

ON WATER: THE AQUEOUS IN
ARCHITECTURE

Fuouho	Abstract	Loto	Heart, inside, desire
Hahake	East	Maama	Earth; divine abode of God Maui; symbolic name for Tonga
Haka, faiva	Dance, performance art of	Maau	Order; also see <i>fenāpasi</i> (order); <i>maau</i> (poem)
Heliaki	Metaphor	Māfana	Warmth; a form of <i>kula</i> (redness); also see <i>vela</i> (fieriness) as a form of <i>kula</i> (redness)
Hihifo	West	Mafu	Heart; also see <i>fatu</i> (heart)
Hiva, faiva	Music, performance art of	Māhina	Moon; divine abode of Goddess Hina; month is also named <i>māhina</i>
Hoa	Pair, duality or binary; see Sāmoan <i>soa</i> (pair, duality, or binary)	Mālie	Beauty; also see <i>fakaʻofaʻofa</i> (beauty)
Hotau Tahi ʻOtumotu	Our Sea of Islands	Mālohituʻu	Intense
ʻTai	Reality; also see <i>ʻiai</i> (realism)	Māmani	World
Ika	Fish	Manava	Mother's womb; also see <i>taungafanau</i> (mother's placenta)
ʻIkonōmiki	Economics	Maokupu	Breadth; also see <i>fālahi</i> (width)
ʻIla	Point; also see <i>mata-ava</i> (eye-hole/point)	Maʻolunga	Height; also see <i>loloto</i> (depth)
ʻIlo	Knowledge; form of <i>maama</i> (lightness; fieriness; redness)	Mata	Eye; also see <i>mata</i> (face)
ʻIlo Faʻu (ʻIF)	Artificial Intelligence (AI)	Mata-Ava	Eye-Hole, i.e., <i>ʻila</i> (point)
ʻIlo Maʻu (ʻIM)	Real Intelligence (RI)	Matangi	North wind
Ivi	Energy	Matangi tokelau-hahake	Northeast wind
Kava	Name of plant	Matangi tokelau-hihifo	Northwest wind
Kohi	Line; also see <i>laini/kohi</i> , with <i>kohi</i> (drawing) as the older form of <i>tohi</i> (writing)	Matangi tonga	South wind
Kula	Red	Matangi tonga-hahake	Southeast wind
Kupesi	Geometric design	Matangi tonga-hihifo	Northwest wind
Kupu	Verse; also see <i>veesi</i> (verse)	Mate	Dead; also see <i>mate</i> (death)
Lalava, tufunga	House-boat-lashing, material art of	Matolutuʻu	Dense
Lalo	Down-under; also see <i>tonga</i> (south)	Maʻungatala	Reference
Langafale, tufunga	Land-architecture or house-building, material art of	Meʻa	Matter
Langi	Sky; divine abode of God Tangaloa, symbolic name for Sāmoa; also the royal tombs of most ancient Tuʻi Tonga dynasty were named Langi, designating the divine realm of Tangaloa ʻEitumatupuʻa, God of the Sky, father of ʻAhoʻeitu, the first Tuʻi Tonga.	Mei-loto-ki-tuʻa	From-inside-out
Liliu fasihehe-fasikehe	Melody change	Mei-tuʻa-ki-loto	From-outside-in
Liliu leʻosiʻi-leʻolahi	Volume change	Moana	Ocean; also see <i>tahi</i> (sea)
Liliu matangi	Climate change; also see <i>fakatomaki</i> (crisis)	Momoko	Cold; a form of <i>ʻuli</i> (blackness)
Liliu tāvātuai-tāvāvave	Tempo-spatio change	Moʻui	Life
Liliu tōmaʻolalo-tōmaʻolunga	Key change	Ngalu	Wave; also see <i>peau</i> (wave)
Loloa	Length	Nimameaʻa	Fine art
Loloto	Depth; also see <i>maʻolunga</i> (height)	ʻOlunga	Up-above; also see <i>tokelau</i> (north)
		Ongo	Feeling, hearing, sound
		Peau	Wave; also see <i>ngalu</i> (wave)
		Peau kula	Red wave; compare with scientific tidal seismic sea waves and tsunami (harbour waves)
		Peau tāmata	Killer wave

Peau tangata	Male wave	Tō	Name of sugarcane plant
Politiki	Politics	To’a	Warrior
Poto	Skill; form of maama (lightness; fieriness; redness)	To’a tete’e	Fearless warrior
Potupotutatau	Harmony	Toka’anga matangi	Wind direction
Puaka	Pig	Tokelau	North; also see ‘olunga (up-above)
Pulotu	Ancestral homeland and afterworld; divine abode of Goddess Havea Hikule’o; symbolic name for Fiji, notably the easterly Lau Group	Tonga	South; also see lalo (down-under)
Sino	Body	Tonga lahi he ‘eiki moe tapu	Tonga abounding in both chiefliness and godliness, i.e., Tonga’eiki, Tongatapu, and Tongalahi
Tā	Time; also see tā (define, demarcate, beat, hit, mark)	Toutaiika, faiva	Fishing, performance art of
Ta’anga, faiva	Poetry, performance art of	Toutaivaka, faiva	Navigation, performance art of; also see faifolau, faiva (voyaging, performance art of)
Tatau	Symmetry	Tufunga	Material art
Tā-Fuo	Time-Form	Uho	Content/Substance; also see vā (space)
Tatau	Symmetry	‘Uli	Black
Tā-Uho	Time-Content	Vā	Space; also see uho (content)
Tā-Vā	Time-Space; also see tā-vā (temporalism-spatialism)	Vai	Water
Tahi	Sea; also see moana (ocean)	Vaka	Boat; name; also see vaka (vessel, vehicle, medium)
Tahi-mo-‘Uta	Matāpule chiefly orator title, i.e., Sea-and-Land	Vaka fakafo’ohifo	Downside-up boat, i.e., fale (house); also see fale fakafo’ohake (upside-down house), i.e., vaka (boat)
Tala	Language; also see lea (language)	Vakatahi	Sea-boat
Talafaletahi	Name of sea-based people and estate	Vaka’uta	Land-boat; name; also see falealafolau (boathouse)
Talafale’uta	Name of land-based people and estate	Vale	Ignorance; a form of ‘uli (blackness); also see vale (mental illness)
Talakamata	Introduction	Valevale	Fetus
Talakolosaliō	Glossary	Vā-Uho	Space-Content/Substance
Talatuku	Conclusion	Veesi	Verse; also see kupu (verse)
Talatupu’a	Cosmogony and cosmology	Vela	Fieriness; a form of kula (redness); maama (lightness)
Tangata	Male		
Tatau	Symmetry		
Tau Tahi	Sea Warrior; name		
Tau ‘Uta	Land Warrior; name		
Tauēlangi	Climatic elation		
Taungafanau	Mother’s placenta; also see manava (mother’s womb)		
Tā-Vā	Time-Space		
Tāvāism	Time-space philosophy of reality		
Tefito-he-loto-sino	Body-centred, i.e., inside/ onside-the-body		
Tefito-he-tu’a-sino	Non-body-centred; i.e., outside-the-body		

TALAFAKAMĀLŌ (ACKNOWLEDGEMENTS)

Tonga's most precious *koloa* treasure is in *fakamālō* (saying thank-you), with sincere appreciation and deep admiration, for the most beautiful and useful exchange on refined *'ilo* (knowledge) (and *poto* [skills]), some of which are duly embedded and embodied in this critical essay. To you all, Professor Maui-TāVā-He-Ako Dr Tēvita O. Ka'ili; Lagi-Maama Academy & Consultancy, Kolokesa Uafā Māhina-Tuai, Toluma'anave, Barbara Makuati-Aftu, and Hikule'o Fe'aomoeako Melaia Māhina; Dr Siosifa Tualau Fifita; Pā'utu-'O-Vava'u-Lahi Dr Adriana Māhanga Lear; Tapu Lolohea amidst many significant others; with mind-heightening and heart-warming we say *mālō lahi* (huge thank-you) to all your good selves, minds, and hearts for the precious *koloa* of refined *'ilo* (knowledge) (and *poto* [skills]) thus freely yet generously rendered. *'Ofa atu fau moe manatu māu*.

TALANOUTI'OSI (NOTES)

1. There is a *matāpule* (chiefly orator title) for Tonga's Royal Army and Navy named *Tahi-mo-Uta* (Sea-and-Land). Also, there were the names *Tau'Uta* (Land Warriors) of Tonga'eiki / Tongatapu / Tongalahi (i.e., Tongatapu for convenience; named due to its association with the first kingly line, Tu'i Tonga, of both earthly and godly

origin, i.e., Tonga *lahi he 'eiki moe tapu* (Tonga abounding in both chieflikeness and godliness), in the south, and *Tautahi* (Sea Warriors) of Vava'u and Ha'apai, in the northern groups, during some fifty years of bloody Tongan Civil Wars from the late eighteenth century to the mid-nineteenth century. See 'Ökusitino Māhina, "The Tongan Traditional History Tala-ē-fonua: A Vernacular Ecology-Centred, Historical-Cultural Concept", PhD thesis, Australian National University, Canberra. 1992.

2. By combining both in Tongan thinking-feelings and doing, architecture engages the mediation of assisting and resisting *tā-vā* (temporal-spatial), *fuo-uho* (formal-substantial) entities, on both the abstract and concrete levels, while engineering involves the mediation of *ivi fefūsiaiki-fetēkeaki* (pulling-pushing energies/forces), commonly through sustained beauty and utility.

3. Tangikina Moimoi Steen and Nancy L. Drescher (eds.), *Tonga: Land, Sea and People* (Tonga, Tonga Research Association, 2011). Also see Sēmisi Fetokai Potauaine (Tavakefa'ana), Bruce Sione To 'a Moa, Sione Lavenita Vaka, and 'Ökusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), "Loto, Tu'a, moe Fale: Inside, Outside, and House" and "*Vaka, Fale, moe Kava*: Boat, House, and Kava—Mana Structures, Mana Spaces," in *Pacific Studies* 44, no. 1–2 (2021): 163–187 and 188–223 respectively.

4. Tēvita O. Ka'ili (Maui-TāVā-He-Ako), "The Ancestors of the Arts," in *Crafting Aotearoa: A Cultural History of Making in New Zealand and the Wider Moana Oceania*, edited by Karl Chitman, Kolokesa U. Māhina-Tuai, and Damian Skinner (Te Papa Press, 2019); Also see Māhina, "The Tongan Traditional History Tala-ē-fonua"; 'Ökusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), "*Taha he Kehe—Unity in Diversity: Towards a New Moana Oceania*," in *From the Deep: Pasifiki Voices for a New Story*, edited by James Bhagwan, Elise Huffer, Frances C. Koya-Vaka'uta, and Aisake Casimira, (Suva, Fiji: Pacific Theological College, 2020), 110–123.

5. See Tēvita O. Ka'ili (Maui-TāVā-He-Ako), "*Tāvani: Intertwining Tā and Vā in Tongan Reality and Philology*," Special Issue, *Pacific Studies* 40, no. 1–2 (2017): 62–78; Tēvita O. Ka'ili (Maui-TāVā-He-Ako), *Marking Indigeneity: The Tongan Art of Sociospatial Relations* (University of Arizona Press, 2017); T. O. Ka'ili (Maui-TāVā-He-Ako), 'Ökusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), and Pign Ann Addo (Kula-He-Fonua), "Introduction: *Tā-Vā* (Time-Space): The Birth of an Indigenous *Moana* Theory," Special Issue, *Pacific Studies* 40, no. 1–2 (2017); David Harvey, "Between Space and Time. Reflections on the Geographical Imagination," *Annals of the Association of American Geographers* 80, 3 (1990): 418–434; Sigfried Giedion, *Space, Time and Architecture: The Growth of the New Tradition* (Harvard University Press, 1967).

6. Adriana Māhanga Lear (Pā'utu-'O-Vava'u-Lahi), Kolokesa Uafā Māhina-Tuai, Sione Lavenita Vaka, Tēvita O. Ka'ili, (Maui-TāVā-He-Ako), and 'Ö. Māhina (Hūfanga-He-Ako-Moe-Lotu), "Tongan *Hoa*: Inseparable Yet Indispensable Pairs/Binaries," Special Issue, *Pacific Studies* 44, no. 1–2 (2021b): 5–141.

7. The names *Talafale'uta* (Land-based-*Talafale*) and *Talafaletahi* (Sea-based-*Talafale*) are chiefly estates of Noble Tu'ipelehake in Tongatapu, in the south, and Ha'apai and Vava'u, in the north.

8. There is a name *Vaka'uta* in *Eua*.

9. See Mele Ha 'amoa Māhina 'Alatini and Hikule'o Fe 'aomoeako Melaia Māhina, *Fonu 'Iloa ko Sangone: Sangone the Legendary Turtle* (Kula-'Uli Publishing (NZ), 2009).

10. Or *faiva toutaivaka* (long-distant-navigation-voyaging), including *faiva toutaiika* (deep-sea-fishing), as both performance arts.

11. See Ernest Edgar Vyvyan, *Tales and Poems of Tonga*, B. P. Bishop Museum Bulletin 46 (1928); 'Ilaisa. Futa Helu, *Critical Essays: Cultural Perspectives from the South Seas*, (Canberra: Journal of Pacific History 1999a); 'Ilaisa Futa Helu, "Aspects of Tongan Material Culture," in *Critical Essays: Cultural Perspectives from the*

South Seas, (Canberra: Journal of Pacific History 1999b): 309–331; Ka'ili, "The Ancestors of the Arts"; Māhina, "The Tongan Traditional History Tala-ē-fonua"; 'Ökusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), "Myth and History," in *Voyages and Beaches: Pacific Encounters, 1769–1840*, edited by Alex Calder, Jonathan Lamb, and Bridget Orr (University of Hawaii Press, 1999), 61–68.

12. One of the four *hoa/soa* (pairs, dualities or binaries) of Land and Sea Elements is called *Fonua'uta* (Land-Fonua) and *Fonuatahi* (Sea-Fonua) or *Fonu'uta* (Land Turtle) and *Fonutahi* (Sea Turtle) (see Ka'ili, "The Ancestors of the Arts"; Māhina, "The Tongan Traditional History Tala-ē-fonua").

13. These knowledge, skills, and technology transfers, as were many others, in ancient time-spaces, were conducted at the intersection (or connection and separation) in what is now called *'Ilo Fa'u* ('IF) Artificial Intelligence (AI) and its inseparable *hoa/soa* (pair) *'Ilo Ma'u* ('IM) Real Intelligence (RI). The term 'intelligence,' like the word 'information,' both meaning *'ilo* knowledge and *poto* skills, are more technological than intellectual in orientation (or better still, both indivisibly intellectual and technological, i.e., ontological and epistemological, in *modus operandi*). See 'Ökusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), Kolokesa Uafā Māhina-Tuai, Tēvita O. Ka'ili (Maui-TāVā-He-Ako), and Sēmisi Fetokai. Kulihaapai Moahehengi 'ovava' ulahi Potauaine (Tavakefa'ana), *Koe Pō Hiva Tu'ufonua Faka Tonga II: A Night of Tongan Classical Music II* (Kula-'Uli Publishing (NZ), 2023); also see Māhina, "*Taha he kehe—Unity in Diversity*"; Sēmisi F. Potauaine (Tavakefa'ana), "The Tectonic of the *Fale*," *Interstices: Journal of Architecture and Related Arts* 6 (2005): 104–109. Also see Tongan tāvāist philosophy of education as the transformation of the human mind and heart from ignorance to knowledge to skills, in that logical order of precedence: 'Ökusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), "From *Vale* (Ignorance) to *'Ilo* (Knowledge) to *Poto* (Skill), the Tongan Theory of *Ako* (Education): Theorising Old Problems Anew," Special Issue,

AlterNative: An International Journal of Indigenous Scholarship 4, no. 1 (2008): 67–96; Māhina, “*Taha he Kehe*—Unity in Diversity”; also see Kaʻili, Māhina, and Addo, “Introduction: *Tā-Vā* (time-space).” Of relevance, too, is the *tāvāist* tenet that errors of thinking and feelings are a problem of mind and heart but not of reality.

14. Genesis 1: 9 and 10. God set out in the creative process and outcome to *fakafuo* (“make *fuo* form”), *fakahoa* (“make *hoa/soa* pairs”), and *fakakakato* (“make *kakato* whole”), all things during the day between *pongipongi* (morning) and *efiafi* (evening) for six days, measured by both *fakaʻofoʻofa/lelei* (beauty) and *ʻaonga/ngāue* (utility).

15. On the one hand, *fonua* can be defined as “lands intersected (or connected and separated) by sea,” and on the other, our sea of islands can be defined as “lands intersected (or connected and separated) by sea, *hotau tahi ʻotumotu* (our sea of islands)” — where both are reflections of one another, on both the general and specific levels. See Epeli Hauʻofa, “Our Sea of Islands,” in *A New Oceania: Rediscovering Our Sea of Islands*, edited by Eric Waddell, Vijay Naidu, and Epeli Hauʻofa (School of Social and Economic Development, University of the South Pacific with Beake House, 1993), 2–16; also see Māhina, “*Taha he Kehe*—Unity in Diversity.”

16. Given the current global human-environment, society-ecology crisis, notably *liliiu matangi* (climate change), *fonua* firmly stands to affectively and effectively provide a critique of the anthropocentrism, separatism and dualism underpinning the Post Cold War Western-led, UN-driven doctrine of sustainable development, defined as “development that meets the needs of the present generation without compromising the future generations in meeting their needs.” See Māhina, “*Taha he Kehe*—Unity in Diversity”; Māhina, Māhina-Tuai, and Potauaine, “*Koe pō hiva tuʻufonua Faka Tonga II*”; Tim Mulgan, Sam Enright, Marco Crix, Tim O. Jayasuriya, Tevita O. Kaʻili, (Maui-TāVā-He-Ako), Adriana Māhanga Lear

(Pāʻutu-ʻO-Vavaʻu-Lahi), ʻAisea Nau Mathew Māhina, ʻŌkusition Māhina (Hūfanga-He-Ako-Moe-Lotu), John Matthewson, Andrew Moore, Emily C. Parke, Vanessa Schouten, and K.rushil Watene, “Charting Just Futures for Aotearoa New Zealand: Philosophy For and Beyond Covid-19 Pandemic,” *Journal of the Royal Society of New Zealand* 51, sup. 1 (2021): 167–178.

17. See Māhina, Māhina-Tuai, Kaʻili, and Potauaine, “*Koe Pō Hiva Tuʻufonua Faka Tonga II*”; Māhina-Tuai, ʻAlatini, and Māhina, “*Koe Pō Hiva Tuʻufonua Faka Tonga II*”; Adrian M. Lear (Pāʻutu-ʻO-Vavaʻu-Lahi), Kolokesa Uafā Māhina-Tuai, Sione Lavenita Vaka, Tevita O. Kaʻili, (Maui-TāVā-He-Ako), and ʻŌkusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), “Sino, ʻIlo, Moe Ongō: Body, Knowing, and Feeling,” Special Issue, *Pacific Studies* 44, 1–2 (2021a): 12–94; Adriana M. Lear (Pāʻutu-ʻO-Vavaʻu-Lahi), Kolokesa Uafā Māhina-Tuai, Sione Lavenita Vaka, Tevita O. Kaʻili, (Maui-TāVā-He-Ako), and ʻŌkusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), “Tongan Hoa: Inseparable Yet Indispensable Pairs/Binaries,” Special Issue, *Pacific Studies* 44, no. 1–2 (2021): 5–141.

18. See *tā-vā* (time-space) as *meʻa* (matter) as *ivi* (energy).

19. See Aisea Nau Mathew Māhina, “The Transcendence of the Finite in Tragedy and *Lakalaka*. Exploration of Ecstasy and the Sublime Through Metaphysical Comfort and *Tau e Langi*” (MPhil diss., University of Auckland, 2004); ʻŌkusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), “Psychoanalysis and Tongan poetry: Reflection on ‘the Song of Flowers,’” Special Issue, *Literature and Aesthetics: Journal of the Sydney Society of Literature and Aesthetics* 14, no. 1 (2003): 136–147; ʻŌkusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), “The Poetics of Exile: Love and Death in Tongan Poetry,” in *Before Pangaea: New Essays in Transcultural Aesthetics Presented in Honour of Professor Grazia Marchiand*, edited by E. Benitez, Special Issue, *Literature and Aesthetics: Journal of the Sydney Society of Literature and Aesthetics* 15, 1 (2005): 136–147; ʻŌkusitino Māhina (Hūfanga-He-

Ako-Moe-Lotu), “Comedy and Tragedy in Myths, Poems and Proverbs: *Tā-Vā* Time-Space Art and Literary Criticism,” in *Tonga: Land, Sea and People*, 140–166; Lear, Māhina-Tuai, Vaka, Kaʻili, and Māhina, “*Sino, ʻIlo, Moe Ongō*”; Lear, Māhina-Tuai, Vaka, Kaʻili, and Māhina, “*Tongan Hoa*.”

20. See Kaʻili, “*Tāvani*: Intertwining *Tā* and *Vā* in Tongan Reality and Philology”; Kaʻili, *Marking Indigeneity: The Tongan Art of Sociospatial Relations*; Māhina, “The Transcendence of the Finite, in Tragedy and *Lakalaka*; Janet Anderson, Graham Cullum, and Kimon Lycos (eds.), *Art & Reality: John Anderson on Literature and Aesthetics* (Hale & Iremonger, 1982); John Anderson, *Space, Time and the Categories: Lectures on Metaphysics 1949–50* (University of Sydney Press, 2007); Harvey, “Between Space and Time.”

21. Whereas architecture deals with *tā-vā* (time-space) and *fuo-uho* (form-content), engineering focuses on *ivi* (energy/force), as inseparable ontological entities, both on the abstract and concrete levels; see Sēmisi F. Potauaine (Tavakefaʻana), “Tectonic of the Fale: Four-Dimensional, Three-Divisional” (MArch thesis, University of Auckland, 2011); Sēmisi Fetokai Kulihaʻapai Moahehengi ʻovavaʻulahi Potauaine (Tavakefaʻana) and ʻŌ. Māhina (Hūfanga-He-Ako-Moe-Lotu), “Oceanic Architectural Routes: The Photographic Archive of Mike Austin Curated by Albert Refiti,” *Interstices: Journal of Architecture and Related Arts* 22 (2022): 95–100; Sione Toʻa Moa, “Langi Royal Tombs: The Beginning of Tuʻi Tonga Architecture” (MArch thesis, University of Auckland, 2011); Mōsesese. Lisiate Havili Fifita, “Kava at the Intersection of the Fale and Vaka” (MArch(Prof) thesis, University of Auckland, 2016); Walter S. T. Holakeitui, “*Ā-tā: It's Not What You Say, It's Where You Sit*” (MArch(Prof) thesis, Unitec Institute of Technology, Auckland, 2019); Tevita Fuataimi Mālohi Vikiłani, “*Tā ki tahi tā ki ʻuta = The One Who Can Perform in Both Land and Ocean is a Well Rounded Person. A Tongan Proverb*” (MArch(Prof) thesis, Unitec Institute of Technology, Auckland, 2021); and lastly see Andy J. Anderson, “Tonga: Apt

Housing” (BA thesis, Architecture, University of Auckland, 1983); Kenneth Frampton, *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture* (Harvard University Press, 1995); Giedion, *Space, Time and Architecture*. Also see *tokelaufeletoa kupesi* geometric design as an abstraction of the internal architectural and engineering structures of the most famous early nineteenth-century fortress of Feletoa in the middle northern groups of Vavaʻu.

22. The Tongan *kupesi* (geometric design) is the equivalent of the scientific DNA—where the former is read *mei-tuʻa-ki-loto* (from-outside-in) and the latter *mei-loto-ki-tuʻa* (from-inside-out)—*heliaki* metaphorically considered as *toto* (blood)—by way of *hohoko* (genealogy), defined as physio-bodily, psycho-emotional, socio-cultural *fakafelavai* (intersection) (or *fakahoko* [connection] and *fakamāvae* [separation]) through *fakafanau* (procreation)—is read mainly through or on the *mata* (facial features); *fānau* (children) are collectively though metaphorically referred as *mata* (eyes), i.e., *kupesi* (facial features) by virtue of creation and procreation.

23. See Potauaine, “Tectonic of the Fale”; Moa, “Langi Royal Tombs.”

24. The Tongan *kupesi* (geometric design) is the equivalent of the scientific DNA—where the former is read *mei-tuʻa-ki-loto* (from-outside-in) and the latter *mei-loto-ki-tuʻa* (from-inside-out)—*heliaki* metaphorically considered as *toto* (blood)—by way of *hohoko* (genealogy), defined as physio-bodily, psycho-emotional, socio-cultural *fakafelavai* (intersection) (or *fakahoko* [connection] and *fakamāvae* [separation]) through *fakafanau* (procreation)—is read mainly through or on the *mata* (facial features); *fānau* (children) are collectively though metaphorically referred as *mata* (eyes), i.e., *kupesi* (facial features) by virtue of creation and procreation.

25. See ʻŌkusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), “Art as *Tā-Vā*, ‘Time-Space’ Transformation,” in *Researching*

the Pacific and Indigenous Peoples: Issues and Perspectives, edited by Tupeni Baba, “Ōkusitino Māhina, Nuhisiva Williams, and Unaisi Nabobo-Baba (Centre for Pacific Studies, University of Auckland, 2004), 86–93: ‘Ō Māhina (Hūfanga-He-Ako-Moe-Lotu), “*Tā, Vā, and Moana: Temporality, Spatiality, and Indigeneity*,” Special Issue, *Pacific Studies* 33, no. 2–3 (2010): 168–202; ʻŌkusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), “Time, Space, and Culture: A New *Tā-Vā* Theory of *Moana* Anthropology,” Special Issue, *Pacific Studies* 40, 1–2 (2017a): 105–132; Lear, Māhina-Tuai, Vaka, Kaʻili, and Māhina, “*Sino, ʻIlo, Moe Ongo*”; Lear, Māhina-Tuai, Vaka, Kaʻili, and Māhina, “Tongan *Hoa*”; Anderson, “Tonga: Apt Housing”; Harvey, “Between Space and Time”; Mulgan, Enright, Cris, Kaʻili et al., “Charting Just Futures.”

26. That is, *tā-vā* (temporality-spatiality), *fuo-uho* (formal-substantial) or *tafaʻakifā* (four-sided-dimensionality, i.e., *fuo* (form) i.e., *tā* (time), and *māʻolunga/loloto* (height/depth), *loloa* (length) and *maokupu/fālahi* (breadth/width), i.e., *vā* (space).

27. Of all three, *ʻilo* (knowledge) (and *poto* [skills]) as reality-led are primary while *fonua/kalatua* (culture) and *tala/lea* (language) as society-based or merely as *vaka* (vessels) are secondary. See Māhina, “From *Vale* (Ignorance) to *ʻilo* (Knowledge) to *Poto* (Skill)”; Lear, Māhina-Tuai, Vaka, Kaʻili, and Māhina, “*Sino, ʻIlo, Moe Ongo* I”; Potauaine, “Tectonic of the Fale”; Māhina, “The Tongan Traditional History *Tala-ē-Fonua*”; Māhina, “*Taha he Kehe*—Unity in Diversity.”

28. That is, *fuo* (form), *māʻolunga/loloto* (height/depth), *loloa* (length), and *maokupu/fālahi* (breadth/width), with *fuo* (form) as *tā* (temporal), i.e., *fuo* (formal) while *māʻolunga/loloto* (height/depth), *loloa* (length), and *maokupu/fālahi* (breadth/width) are *vā* (spatial), i.e., *uho* (substantial). See Lear, Māhina-Tuai, Vaka, Kaʻili, and Māhina, “*Sino, ʻIlo, Moe Ongo*”; Potauaine, “Tectonic of the Fale”; John Anderson, *Studies in Empirical Philosophy* (Angus and Robertson, 1962); Anderson, *Space, Time and the Categories*.

29. See ʻAlatini and Māhina,

Fonu ʻIloa ko Sangone: Sangone the Legendary Turtle (Kula-ʻUli Publishing (NZ), 2009); Hikuleʻo F. M. Māhina and Mele H. M. ʻAlatini, *Ko e Tupuʻanga ʻo e ʻAkau koe Kava mo e Tō: The Origin of the Kava and Sugarcane Plants* (Kula-ʻUli Publishing (NZ), 2009a); Hikuleʻo F. M. Māhina and Mele H. M. ʻAlatini, *Kalia Lahi Koe Lomipeau: Lomipeau the Giant Double-Hulled Canoe* (Kula-ʻUli Publishing (NZ), 2009b).

30. See Fifita, *Kava at the Intersection of the Fale and Vaka*; Sēmisi F. Potauaine (Tavakefaiʻana), Bruce S. T. Moa, Sione L. Vaka, and ʻŌkusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), “*Loto, Tuʻa, moe Fale*: Inside, Outside, and House” and “*Vaka, Fale, moe Kava*: Boat, House, and Kava—Mana Structures, Mana Spaces,” in *Pacific Studies* 44, no. 1–2 (2021a): 163–187; Walter S. T. Holakeitui, “*Ā-tā: It’s Not What You Say, It’s Where You Sit*”; Han Byul Seol, “State of Nirvana: A Spatio-Temporal Condition” (MArch (Prof) thesis, University of Auckland, 2015); Vikilani, “*Tā ki tahi tā ki ʻuta*.”

31. See Gerd Masserlink and Roland Gehrels, *Coastal Environment and Global Change* (John Wiley & Sons, 2014); Holakeitui, “*Ā-tā: It’s Not What You Say, It’s Where You Sit*”; Potauaine, Moa, Vaka, and Māhina, “*Loto, Tuʻa, moe Fale*: Inside, Outside and House”; Potauaine, Moa, Vaka, and Māhina, “*Vaka, Fale, moe Kava*: Boat, House, and Kava.”

32. From a Tonga *tāvāist* philosophy, *ivi* (energy) is classified into *ivi kula* (red energy) and *ivi ʻuli* (black energy), as in *peau kula* (red waves) (also taken as *peau/ngalu tangata* or *tāmāte* [male or killer waves]), Tongan for the scientific tidal and seismic sea waves and Japanese tsunami harbour waves. The *kula* (red) and *ʻuli* (black) colours are evident in all the three genres, e.g., the use of *vela* (hot) as red and *momoko* (cold) as black in the performance arts of *faiva taʻanga* (poetry), *faiva hiva* (music), and *faiva haka* (dance); *kafa kula* (red *kafa-sinnet*) and *kafa ʻuli* (black *kafa-sinnet*), in the material art of *tufunga lalava* (house-boat-lashing); and *koka kula* (red *koka* dye) and *tongo ʻuli* (black *tongo*

dye), in the fine art of *koka'anga* (bark-cloth-making). See Sēmisi F Potauaine (Tavakefai'ana) and 'Ökusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), "*Kula and 'Uli: Red and Black in Tongan Thinking and Practice*," in *Tonga: Land, Sea and People*, edited by Tangikina Moimoi-Steen and Nancy L. Drescher (Tonga: Tonga Research Association, 2011), 194–216.

33. Of great interest is the eye-hole-like rolled mat called *tatau* (divider) is rolled out, standing on the length of its edge around the *takafalu* (back) of Tu'i Tonga Pau—thereby temporally-spatially marking his sacred person from the rest of his common subjects—where the inner side, including the king, is named *loto tatau* (inside of the divider), and the outer side, including his common subjects, is labelled *tu'a tatau* (outside of the divider) as a symbolic marker of rank and status.

34. See Fifita, "Kava at the Intersection of the Fale and Vaka"; Potauaine, Moa, Vaka, and Māhina, "*Loto, Tu'a, moe Fale: Inside, Outside, and House*" and "*Vaka, Fale, moe Kava: Boat, House, and Kava*"; Potauaine, "Tectonic of the Fale."

35. Anderson, "Tonga: Apt Housing"; Frampton, "Studies in Tectonic Culture"; Giedion, *Space, Time and Architecture*; Charmaine M. 'Ilaiū, "Persistence of the Fale Tonga" (MArch thesis, University of Auckland, 2007); Tōmui Kaloni, "The architecture of Tonga," in *Cross Section: NZIA News* (2005): 11–15; Albert Refiti (Leali'ifano), "The Forked Centre: Duality and Privacy in Polynesian Spaces and Architecture," Special Issue, *AlterNative: An International Journal of Indigenous Peoples* 4, no. 1 (2008): 97–106; Solomone Tuita, "Towards a Tongan Architecture. A Commentary From a Tongan Perspective" (BA thesis, University of Auckland, 1988); Micah Van der Ryn (Fepule'a'i), "The Difference Walls Make: Cultural Dynamics and Implications in Samoan Architectural Traditions and Socio-Spatial Practices" (PhD thesis, University of Auckland, 2012).

36. See Masserlink and Gehrels, *Coastal Environment and Global Change*; Potauaine, Moa, Vaka,

and Māhina, "*Loto, Tu'a, moe Fale: Inside, Outside, and House*" and "*Vaka, Fale, moe Kava: Boat, House, and Kava*"; Potauaine, "Tectonic of the Fale."

37. See Potauaine and Māhina, "Oceanic Architectural Routes"; Moa, "Langi Royal Tombs"; and Potauaine, "Tectonic of the Fale."

38. J. C. Beaglehole (ed.), *The Journals of Captain James Cook: Edited from Original Manuscripts* (Cambridge University Press, 1969).

39. See Helu, "Critical Essays: Cultural Perspectives from the South Seas," *Journal of Pacific History* (1999); Ka'ili, "The Ancestors of the Arts"; Māhina, "The Tongan Traditional History Tala-ē-Fonua."

40. See the *kupesi* (geometric designs) *fata-o-Tu'i-Tonga* (pall-bearer-of-Tu'i-Tonga) as the abstractions of the 'otulangi (royal tombs) and the *falefata/falefataki* (house-of-fata), like the *fata 'ufi yam* pyramids and Boat-of-Hina, are derivatives of the *kupesi* (geometric design) *veimau* (checkerboard or ordered-water-flow) and more.

41. That is, a constant motion from *loto-ki-tu'a*, *tu'a-ki-loto* (inside-out, outside-in), *lalo-ki-'olunga*, *'olunga-ki-lalo* (bottom-up, top-down). See Moa, "Langi Royal Tombs"; Potauaine, "Tectonic of the Fale"; Lear, Māhina-Tuai, Vaka, Ka'ili, and Māhina, "*Sino, 'Ilo, Moe Ongō*."

42. That is, by modelling the ways of society, i.e., epistemology, on the ways of reality, i.e., ontology—as in the *tāvāist* philosophical tenet, that time and space, like form and content, are socially organised in plural, temporal-spatial, formal-substantial, collectivistic, holistic, and linear ways (as opposed to their organisation in singular, technoteleological, individualistic, atomistic, and linear ways in the West).

43. The performance art of poetry makes affective and effective use of the artistic and literary of *heliaki* as "metaphorically saying one thing but historically meaning another," as in the utilising of knowledge of the fishing birds (*kupu/veesi* verse 2, *kohi/laini* lines 5 and 6) and celestial stars (*kupu/veesi* verse 3, *kohi/laini* lines 1 and 2) as

natural entities for voyaging and navigation as disciplinary and social activities.

44. See Māhina, Māhina-Tuai, Ka'ili, and Potauaine, "*Koe pō hiva tu'ufonua Faka Tonga II*"; K. U. Māhina-Tuai, M. H. M. 'Alatini, and 'Ökusitino Māhina (Hūfanga-He-Ako-Moe-Lotu), *Koe Pō Hiva Tu'ufonua Faka Tonga: A Night of Tongan Classical Music* (Kula-'Uli Publishing (NZ), 2022); 'Ökusitino Māhina, (Hūfanga-He-Ako-Moe-Lotu), Kolokesa Uafā Māhina-Tuai, and Sēmisi. Fetokai Kulihāapai Moahehengi'ovava'ulahi Potauaine (Tavakefai'ana), "Nanamu as Tongan Sense of Smelling: A *Tāvāist* Philosophical Critique," *Garland Magazine: The Stories Behind What We Make* (1 September 2023): 1–34.

45. By dividing the Tongan *māmani* universe into four parts, viz., *hahake* (east), *hihifo* (west), *tokelau* or 'olunga (north or up-above) and *tonga* or *lalo* (south or down-under), there exists six Tongan *toka'anga matangi* (wind directions), viz., *matangi tonga* (south winds); *matangi tonga-hahake* (southeast winds); *matangi tonga-hihifo* (southwest winds); *matangi tokelau* (north winds); *matangi tokelau-hahake* (northeast winds); *matangi tokelau-hihifo* (northwest winds). There seems not to be *matangi hahake* (east winds) nor *matangi hihifo* (west winds). oat-building)—themselves understood to intersect architecture and engineering,² in addition to other disciplinary and social activities.³ Combined, these natural entities and social activities comprise Tongan cosmogonical and cosmological accounts, all of which begin with the emergence of *fonua* (i.e., land and sea). The sea movement and land settlement of both the earthly people and godly build on this emergence further permitting the development and refinement of their heroic deeds. Borne from these earthly and godly activities, land-architecture and sea-architecture support other social and religious spheres, as in the land-based and sea-led (and sky-driven) activity of *faiva faifolau*, where, for instance, land-sea(-sky) travelling is portrayed through performance art.⁴