

ONCE WERE NAVIGATORS

Reclaiming ancestral navigational methods as a methodological research practice

*Cadence Kaumoana**

Abstract

This article identifies the entrepreneurial mindset as a resolve to engage in exploration and action in order to address an issue or accomplish a goal. Entrepreneurial mindset, in the context of navigation, espouses an expectation of resilience, analysis, adjustment, application and development in all areas of intention. For thousands of years, Polynesian navigators negotiated the unpredictable and unknown Pacific islands, waters, winds and rains to voyage the breadth of the Pacific Ocean. Practices of navigating the Pacific required more than focus, direction and determination—the great journeys required in-depth knowledge, experience and capability. Included with these contributors to successful navigation, there is the link to whakapapa, ngā Atua and the pūrākau, thereby making navigational practice divinely associated. This article outlines the five ancient navigational markers used by the Polynesian peoples to traverse the vast expanse of the Pacific Ocean and aligns them with a proposed Kaupapa Māori research methodology I call Te Arahina.

Keywords

Polynesian navigation, research methodology, mātauranga Māori, maramataka, Te Arahina

Positionality statement

I position myself as a wahine, Māori researcher. My research specifically focuses on mindset and the identification of the entrepreneurial mindset as a tool for achieving entrepreneurial goals.

As I began my research in the field of mindset, and entrepreneurial mindset in particular, it became apparent that my research direction required a methodology that was aligned to qualitative data gathering and a more generic research focus. I also needed a methodology that was able to align with a specific Indigenous focus, if required, and that was robust enough to include a review of existing

research. As a researcher who has been colonised by schooling based on colonial influences, and who has experienced the many impacts of the effects of colonisation, my efforts were strengthened to ensure that the comparisons and analysis of data and research were measured, as much as could be achieved, through an Indigenous methodology. Linda Tuhiwai Smith (2012, p. 73) adeptly describes the reaction to the disconnection from one's own cultural values: “[N]ative intellectuals may have become estranged from their own cultural values to the point of being embarrassed by, and hostile towards, all that those values represented.”

* Ngāti Apakura, Ngāti Mahuta, Ngāti Maniapoto. EdD Candidate, School of Education and School of Business, University of Auckland, Auckland, New Zealand. Email: cadencekaumoana@hotmail.com

To ensure that I was not ignoring and putting aside cultural idiosyncrasies, I first had to recognise my bias and attempt to achieve my research goal of identifying an appropriate research methodology. I have therefore approached this sharing of knowledge in a way that ensures I don't "become separated from [my] own indigenous value system and have been swept up into the games and machinations of a world [I] only partly understand" (L. T. Smith, 2012, p. 102).

Finally, the connection of my tūpuna to ocean navigation compelled my gravitation towards navigational methods of research and evaluation. My family name, Kaumoana, provided me a context for our family connection to the ocean. Best (1922a, p. 19) translated *kaumoana* as "expert seafaring navigator" and the word has been translated more recently as "mariner, sailor or boat crew". As Māori, our ancestors have a long and successful history of ocean navigation, which contributed to the rationale behind the development of my research model and carried a resonance that is echoed in Winiata's (2001, as cited in Mead, 2013, p. 321) connection of mātauranga Māori and intergenerational knowledge:

Matauranga Maori is a body of knowledge that seeks to explore phenomena by drawing on concepts handed from one generation of Maori to another. Accordingly, matauranga Maori has no beginning and is without end. It is constantly being enhanced and refined. Each passing of Maori makes their own contributions to matauranga Maori. The theory, or collection of theories, with associated values and practices, has accumulated mai i te ao Maori / from Maori beginnings and will continue to accumulate providing the whakapapa of matauranga Maori is unbroken.

I have two hopes in sharing this article: The first is that Indigenous knowledge is afforded the space it deserves in standing true as a valid form of methodological research practice. The second is that the knowledge shared herewith will be further researched, tried, reinforced and robustly critiqued in order to give it further validation, mana and authority, because "Māori knowledge represents the body of knowledge that, in today's society, can be extended, alongside that of existing Western knowledge" (L. T. Smith, 2012, p. 177). Using traditional knowledge to shape and explore Kaupapa Māori research creates a whole different lens (Kovach, 2010; Louis, 2007): "When indigenous peoples become the researchers and not merely the researched, priorities are ranked

differently, problems are defined differently, and people participate on different terms" (L. T. Smith, 2012, p. 196). The theoretical understanding developed from Indigenous knowledge systems can be used as research methodological practice, as a foundation for undertaking any type of project design and co-design, and for developing evaluative measures and engaging in contemporary and traditional entrepreneurial contexts.

Traditional knowledge systems

Developing a traditional methodology (Kovach, 2010; L. T. Smith, 2012) was attempted by considering the theoretical underpinnings contained within the maramataka (Roberts et al., 2006; Robinson, 2005; Tāwhai, 2013): the calendrical synergy between land, the waters and the skies—the environment. The principles of the maramataka have served Polynesians for centuries (Best, 1922b; Tāwhai, 2013) but are adaptable enough to be used in various contexts and situations today and in the future. Using Indigenous knowledge as the basis of all research practices is empowering and affirms effective traditional systems and processes: "Indigenous peoples have philosophies which connect humans to the environment and to each other, and which generate principles for living a life which is sustainable, respectful and possible" (L. T. Smith, 2012, p. 109).

I share this research knowledge in the hope that I can support the privileging of "indigenous concerns, indigenous practices and indigenous participation as researchers and researched" (L. T. Smith, 2012, p. 111). Linda Tuhiwai Smith (2012, pp. 120–121) refers to the Indigenous Research Agenda model as having four tides that are the conditions of states of being in which Indigenous communities are moving: survival, recovery, development, and self-determination. She goes further to state that investigative strategies must be appropriate for the research purpose:

Research methodology is based on the skill of matching the problem with an 'appropriate' set of investigative strategies. It is concerned with ensuring that information is accessed in such a way as to guarantee validity and reliability. This requires having a theoretical understanding, either explicitly or implicitly, of the world, the problem, and the method. (L. T. Smith, 2012, p. 175)

Thanks to Kaupapa Māori theory (G. H. Smith, 1997), the space to undertake research in a very Indigenous way is possible. Beyond survival and recovery, this article seeks to achieve the third tide of

the Indigenous Research Agenda model—development—in the form of a Polynesian methodological approach to Indigenous Polynesian research. Linda Tuhiwai Smith (2012, p. 61) further affirms that doing so is a part of the knowledge-sharing process, whereby “knowledge was also there to be discovered, extracted, appropriated and distributed”. Using *mātauranga Māori*, Indigenous knowledge and wisdom resonates with my identity as a female Māori researcher and with my understanding of my place in the world. Hunkin (2012, p. 84) refers to *mātauranga Māori* as being “able to connect the past, the present and the future. Since the separation of Rangī and Papa, and the creation of the cosmos, and Tāne pursuing knowledge, *mātauranga Māori* has been a part of our culture and our well-being”. Using traditional Indigenous knowledge to determine a relevant and meaningful research methodology was therefore a prerequisite for undertaking my research.

Determining methods of measuring and reviewing data conflicted with a *te ao Māori* world view and my position within that world view. Having a cultural connection to the research purpose and aims keeps the research connected to the research and the researcher (Gergen et al., 1996; Shah, 2004). The research and the researcher are intrinsically connected (Heron & Reason, 2006), so it was important that the research approach and methodology were appropriate for the research focus and the research context. The alignment between the historical Polynesian explorations and the traits of the entrepreneurial mindset provided an opportunity to explore traditional theoretical understandings (Honig, 2020) for the development of a research methodology that aligns to both a Māori context and an entrepreneurial approach to ensure appropriate research validity and reliability.

By asserting the validity of Maori knowledge, Maori people have reclaimed greater control over the research that is being carried out in the Maori field. “Traditional” world views provide an [*sic*] historical example of the complexity of Maori beliefs and understandings of the world. They also provide ample examples of Maori efforts to seek knowledge, to organise it and to learn from it. (L. T. Smith, 2012, p. 177)

The five navigational markers

While attempting to voyage across the Pacific, ancient navigational experts experienced many anticipated and unanticipated difficulties, and

it can be assumed that they employed many approaches to resilience and solution-focused activities. The navigational-marker approach I’m about to discuss is designed to guide the researcher through the constant state of flux that navigating/researching unknown territories will inevitably produce.

Using the Tongan term *koloa*, Havea (2014, p. 96) beautifully connects migratory navigation to the common understandings shared across Polynesia and highlights the potential sharing of Indigenous knowledge practices:

I believe that the *koloa* in our cultures has something to do with the migratory practices of our ancestors, who voyaged the South Seas way before Europeans had the courage to leave the stability of their shores. Our island homes are in fact filled with stories of ancestors visiting and courting one another, moving between Samoa, Tuvalu, Tonga, ‘Uvea, Fiji, Rotuma, Niue and so forth. When they travelled, they took and shared their *koloa*. This is evidence of how our cultures have been and still are enriched by and enriching each other!

Using a traditional approach to navigating new ventures, the development of the entrepreneurial mindset could be a powerful tool in successful entrepreneurial achievement and leadership. Stiller et al. (2015, p. 166) reinforce the importance of leadership in navigating new territories and in the process of navigation itself:

In our ambition to navigate new, and often abstract and virtual oceans governed by complexity and elasticity, we need to ensure our own practices are positively enduring, and are a worthy legacy to hand down through the generations that follow. The gift of the wayfinder’s journey is not arrival at a destination, it is who we become along the way as we fulfil our potential.

The concept and development and of the five ancient markers can very much be applied to contemporary life in a variety of ways, including in this research setting as a Māori research methodology. Linda Tuhiwai Smith (2012, pp. 108–109) explains the validity of Indigenous knowledge:

The struggle for the validity of indigenous knowledge may no longer be over the recognition that indigenous peoples have ways of viewing the world which are unique, but over proving the authenticity of, and control over, our own forms of knowledge. The debates along intellectual and cultural property

rights cast the contestation of knowledge in a new frame.

I was introduced to the five navigational markers by Rereata Makiha of Te Mahurehure and Te Arawa tribal affiliations on August 12, 2019, at a symposium held at the University of Auckland (Makiha, 2019c), where he spoke about the Māori lunar calendar and Māori star navigation. Makiha was raised in the ancient traditional ways of te whare *wānanga* (Simmons & Biggs, 1970), the sacred school of learning, by his elders. He referred to the five navigational markers—Te Rapunga, Te Kitenga, Te Whāinga, Te Whiwhinga and Te Rawenga—in the context of using the environmental factors to determine the direction of the voyage. At this learning workshop, Makiha was asked if there was a collective Māori term for the markers or any published literature that referred to these markers, but, other than ancient *karakia*, there were none that were known of.

Following the symposium, I undertook further research to ascertain the meaning behind each of the five markers, which included discussions with other maramataka practitioners and further literature analysis. From these discussions and findings, I have aligned the navigational process to the research method approach outlined in this article. Suaalii-Sauni (2017, p. 174) articulates so beautifully the critical importance of the determination and exchange of knowledge and practices:

We will not know how our concepts and frameworks make sense alongside each other or in real-life settings until we actively engage them, theorise and observe them, together, in these settings. What we do know is that, as Māori and Pasifika peoples, we have been endowed with the mana and whakapapa to determine for ourselves how we exchange; why, when, and where. We cannot fully do that if we do not openly talk together about what we mean or assume about our concepts, knowledges and practices, and what they mean to us and to our relationships with each other.

Significantly, Buck (1966, p. 435) discusses the inclusion of a list of terms that he classified as “mental development terms”:

Their inclusion, variation, and place in the complete recital depended on what had become established by tribal authorities or schools of learning. An attempt on the part of any student to pick and choose from the various tribal versions in order to

provide a more perfect list would create a perfection which never existed.

In this context, Buck highlights an important point: that there is no one way to undertake or utilise any activities or knowledge because there is no singular perfect approach. This indicates to me that there are opportunities to develop and to trial to support the ultimate goal. This ability to be agile, to use adaptability depending on the situation, has clear research synergies with navigational adaptations to the winds, tides and other environmental influences.

Methodology: Te Arahina

For the purposes of this research, the term Te Arahina is used to name the process of the five navigational markers. Rev. Māori Marsden (2003, p. 31) writes of the ancient Māori seers who “created sets of symbols to provide them with their maps/models to portray each state in this evolutionary process. These representations were the means by which they could apprehend/grasp/interpret/reconcile the various worlds; and grasp what they perceived as ultimate reality.” It is not always considered good practice to break down Māori words to better understand the term. Often, Māori words have a symbolic descriptor that cannot be derived simply from breaking apart the words within a bigger word and then defining the word thus. However, I take the approach of defining the parts of the word *arahina* because the stars are a critical part of navigation, and they are amplified under the mantle of the moon.

The name Te Arahina is derived from two Māori words, *ara* and *hina*. *Ara* is defined by in the *Dictionary of the Māori Language* (7th ed.) as “a noun; way, path” (Williams & New Zealand Advisory Committee on the Teaching of the Maori Language, p. 13). The particle *-hina* is a passive ending, and *arahina* is therefore the passive form of the verb *ārahi*, meaning “to herald – used of particular stars which, when they appear in the night sky, signal the beginning of particular lunar months” (Moorfield, n.d.-a). In the context of Te Arahina, *hina* is also the personification of the moon (*māhina* is one of the words for moon in te reo Māori). I’ve opted call my framework Te Arahina, which I use as a metaphoric descriptor of the moon’s path and the lunar signs that indicate a new beginning. In this way, Te Arahina recognises the deep connection our Polynesian people have to lunar and stellar guidance and direction, and the importance of using navigational direction as the essence of this research and evaluation framework.

The five navigational markers within Te Arahina are Te Rapunga—The Seeking, Te Kitenga—The Observing, Te Whāinga—The Pursuit, Te Whiwhinga—The Attainment and Te Rawenga—The Success. They act as means for reflection and guidance to review and refine the research process as required and as necessary. At each point, the researcher has the opportunity to reflect and restart, and to constantly review. Spiller et al. (2015, p. 142) provides context in describing the role of the navigational leader, the “wayfinder”: “Wayfinding is a process of constant, natural review. It is the way of readiness and responsiveness. It is a way that isn’t based on existing between the familiar, stable and fixed points of assessments, but relies on a continuous process of assessment.” In this way, the researcher will be periodically reviewing variables and adjusting their course of investigation accordingly to ensure they are on the best path.

Tāwhai (2013, pp. 5–6) speaks of his elders who would study the tides and the shape, brightness and angle of the moon in undertaking experiments to deepen and reinforce their knowledge: “These two gentlemen represented, to our generation, people who had acquired much traditional knowledge, who had analysed it, reworked and developed it, and applied it to the lives of the community.” Te Arahina offers a framework in which to utilise coordinates as markers to prepare, analyse, rework, develop and apply mātauranga to guide the research journey. The five phases of Te Arahina are explained individually in the following subsections.

Te Rapunga—The Seeking

The first phase in the Te Arahina process, Te Rapunga, is the beginning stage of the research journey. Starting from a neutral position, the researcher will determine the direction and goal of the research and be equipped with all of the literature, materials and resources required to undertake the research journey. The word *rapu* is defined as a verb, to “seek, look for, ascertain” (Williams & New Zealand Advisory Committee on the Teaching of the Maori Language, p. 326) and *rapunga* is defined by Moorfield (n.d.-c) as a “search, hunt, enquiry, investigation”. Linda Tuhiwai Smith (1993) uses the term Te Rapunga in the title of a book chapter: “Te Rapunga i Te Ao Marama (The Search for the World of Light)”. Buck (1966, p. 435) refers to Te Rapunga as “Seeking”, and the term forms part of a list of “abstract terms arranged in a sequence of mental development”:

Te Rapunga—Seeking
Te Kukune—Growth
Te Pupuke—Swelling
Te Hihiri—Energy
Te Mahara—Thought
Te Hinengaro—Mind
Te Manako—Longing

In Buck’s list above, there is no mention of the other terms herein outlined in Te Arahina because his focus is on the sequence of mental development. The important point to note here is that Te Rapunga is also used as the starting point of the mental development sequence, just as it is in the Te Arahina framework. In the context of this research, I align the phase Te Rapunga to the process of investigating the current status of the research and determining the direction towards the goal. Navigationally, Te Rapunga refers to the positioning of the ocean vessel to identify location and direction using the navigator’s starting point (Makiha, 2019b). Makiha (2019c) noted that when there was a lack of clarity, “the waka was put into a spin to realign to the navigational direction required”, and he further refers to Te Rapunga as the phase of recalibration. Te Rapunga therefore is the initial setting to identify the goals, the direction, the opportunity, the process before the outset of the journey, with the ability to reset as required.

This approach to “integrative review” ensures that all empirical and theoretical data has been reviewed “to provide a more comprehensive understanding” of the best pathway towards the goal (Whittemore & Knafl, 2005, p. 546).

Te Kitenga—The Observing

The second phase in the Te Arahina process, Te Kitenga, requires the scanning and assessment of data and information. *Kite* is defined as “see, perceive, find, discover” quoting the demi-god Maui: “[M]aku e rapu ka kitea” (Williams & New Zealand Advisory Committee on the Teaching of the Maori Language, 2001, p. 120). *Kitenga* is defined as “seeing, sighting, finding, observation, perception, view” (Moorfield, n.d.-b) and aligns to grounded theory’s stage of data collection and coding (Charmaz, 2000). From a navigation perspective, Te Kitenga involves consideration of the tidal flows, maps, directions, planetary movements, star constellations, pūrākau, movements of animals and plants, and lunar and solar phases as insights to best practice. These insights into environmental factors allow the navigator to gauge the current state of the journey and help guide the next

steps towards the penultimate goal. In addition to these grounded theory attributes is the culturally contextual process of research tau utuutu (Ka'ai, 2008, p. 68), or reciprocation, through collecting and analysing data simultaneously as an effective method of navigating in choppy waters, where your immediate next steps are critical.

Te Kitenga is more than looking at the obvious and reading the combination of signs from the earth, the skies and the seas. In the words of Henry David Thoreau, "The question is not what you look at, but what you see" (Searls, 2009, p. 65). Being able to read the signs is critical to ensuring you are on the right path: "[C]entral to wayfinding is the discipline of reading the signs in an unfolding, constantly moving reality, one in which the wayfinder stays open and responsive to changing conditions" (Spiller et al., 2015, p. 128). In addition to being able to read and interpret the indicators of the environment, it is important to read those indicators that can't be seen but only felt: "[S]ometimes the 'signs' are just a funny feeling that something is not quite right, that it is time to slow the waka down and look around" (Spiller et al., 2015, p. 128).

Te Kitenga, in a research context, would therefore require our constant review and reflection throughout our research journey, and demands that we consider all important resources and data to determine our line of sight and progress.

Te Whāinga—The Pursuit

The priority of the Te Whāinga phase is to ensure the navigator, or researcher, is on the correct path through a process of evaluation. As Durie (2003, p. 33) states, it is crucial "not to look inwards, or backwards, but to seek out distant horizons, and make the most of new opportunities".

Whāinga is defined as "pursuing" (Williams & New Zealand Advisory Committee on the Teaching of the Maori Language, 2001, p. 484) and elsewhere as "pursuit, aim, goal, objective, purpose" (Moorfield, n.d.-e). Whāinga therefore aligns to the grounded theory focus of ensuring the research question is at the centre of the project (Stebbins, 2001). Te Whāinga in the context of Te Arahina is the pursuit of aspirational goals, and is achieved through the process of coding, analysis and variance (Makiha, 2019b, 2019c). Te Whāinga is any opportunity to obtain feedback, input and ideas about the journey thus far. It could also be considered as a protection phase, whereby we review any potential risks and mitigate them. In Te Whāinga, we ascertain the success of the current pathway, review the variables, and refine the

plan towards achieving the goal. In a recounting of his journey from Tahiti to New Zealand without using instruments, The Pākehā adventurer David Lewis (1966, p. 88) refers to his *ara whetu*, or "star-path", as a method to readjust his course when he found it in error or sufficiently suspected it to be so. Lewis (1966) changed his star-path to fit the new situation based on the points of two guiding stars.

Where there are multiple external factors at play and when there is uncertainty or discontentment, transformation theory suggests that reflection is important to determine the best next steps: "[M]ost reflection takes place within the context of problem solving" (Mezirow, 1994, p. 224). Transformation theory involves reviewing critically to determine appropriate endeavours and to address situational priorities. Moving from stillness allows mindfulness, readiness, thoughtfulness, and exploration of relaxation and attentiveness to guide the next steps (Spiller et al., 2015). Furthermore, listening for difference and making time to connect with your team and those on the journey with you becomes another critical step in the phase of Te Whāinga (Spiller et al., 2015, pp. 158–159).

If the pathway is *tika* and *pono*, then we continue on, taking on board any new insights and adjusting if necessary.

Te Whiwhinga—The Attainment

Te Whiwhinga is the fourth phase of Te Arahina and is only attained once the all clear has been provided by the third phase, Te Whāinga, and clear goals have been met and achieved. *Whiwhinga* is defined as "possessed of, having acquired, act or process of laying out the plan" (Williams & New Zealand Advisory Committee on the Teaching of the Maori Language, 2001, p. 499), and also as "acquisition, attainment, procurement" (Moorfield, n.d.-f). In the Te Arahina framework, Te Whiwhinga determines whether or not the initial goals have been met (Houston, 1935; Sole, 2005). From a navigational perspective, if the pathway towards the goal becomes hazardous, then a new plan is required and the navigator reverts back to the Te Rapunga phase. A process of review and analysis needs to be undertaken to determine whether or not the waka/research project is on track. When travelling on a waka in the ocean, a navigator would review the environment around them—examining the tides, waves, winds, marine life, birds, lands, stars, the moon and the sun—to identify the location and tracking of the voyage (Best, 1923; Irwin et al., 2017; Makiha, 2019a; Salmond, 1992). Should

the voyage be found to have gone astray from the path, then a recalibration is necessary and a return to Te Rapunga is critical. Therefore, in a research undertaking Te Whiwhinga is a review and redirection phase to review the research questions, to analyse the data and to use this information to feed the next iteration of research or, if necessary, begin again from the start.

Adapting to change requires insight and the ability to be reflective and self-reflective (Kitchenham, 2008; Mezirow, 1994). Teamwork and knowledge of the variations required to adjust the course of direction are important to ensuring Te Whiwhinga is attained (Spiller et al., 2015).

Specifically, by using Te Kitenga (scanning, data collation and environmental markers) and Te Whāinga (review, group feedback and analysis), completed work can be reviewed and the research direction will either move into Te Whiwhinga or begin again at Te Rapunga and be recalibrated. Te Whiwhinga is achieved when the research outcome has been obtained.

Te Rawenga—The Success

Te Rawenga is the final phase of Te Arahina. When all pointers are showing the journey is on track, then you are in a state of rawenga, or a state of high-quality excellence (Sole, 2005). *Rawe* is defined as “excellent, sufficient, enough” (Williams & New Zealand Advisory Committee on the Teaching of the Maori Language, 2001, p. 332) and also as “fine, nice, wonderful, exceptional, super” (Moorfield, n.d.-d). The addition of the plural suffix *ngā* to the word *rawe* emphasises the word’s meaning and denotes multiple moments of rawe. Te Rawenga confirms successful completion while ensuring the recognition and celebration of the success of the collective. Te Rawenga is both the recognition of achievement of an intentional goal and the self-determination of one’s own success. In this regard, Te Rawenga can be a self-reflective measurement tool to confirm one’s determination of the level and status of completion or attainment of success.

Research applications of Te Arahina

Shedding resistance and being open to learning are two elements that are important in the navigation process (Best, 1923; Turei, 1993), and indeed in any learning situation. When resistance to change is overcome, an openness of mind is developed that can help overcome adversity, build resilience, and seek to explore new learning and new methods of approach. Learning by doing complements an openness of mind through practice and effort

(Anzai & Simon, 1979; Arrow, 1971; DuFour & DuFour, 2013).

A question arises regarding the final phase of the Te Arahina framework. Is Te Rawenga necessary to achieving the same outcomes as the first four phases of Te Arahina? In some ways Te Rawenga is the prize at the end of the race; the motivation and inspiration to accomplish a task and complete it through to the end. But, more so, Te Rawenga is the self-determination in measuring one’s success and achievement. Through Te Rawenga, better systems are developed to grow perseverance, determination, resilience and motivation. Te Rawenga is an essential part of the methodological process and involves acknowledging and appreciating the learning and outcomes achieved along the journey.

The five phases of Te Arahina are mentioned in ancient prayers and incantations. The incantation below highlights the concept of Te Rawenga, articulately captured in Sole’s (2005, p. 7) history of Ngāti Ruanui, in his chapter “Te Ōrokohanga o te Ao”:

He rawenga

The achieving.

Ko te rawenga i runga

The achievement] from above,

Ko te rawenga i waho

[The achievement] from below,

Ko te rawenga i roto

[The achievement] from within,

Ko te rawenga i a Ranginui e tuu nei

Achievements of Ranginui standing here.

This part of the ancient creation story incantation refers to the ultimate achievement of culminative creation, from the heavens above, the earth below and the life essence within, to achieve the enlightenment that the Sky Father, Ranginui, had. Sole (2005) provides another karakia, which was used during the making of the ancient canoe, Aotea, that refers to the concept as a method of realising the objective.

Jack Thatcher (Ngāi Te Rangī, Ngāti Ranginui, Ngāti Porou and Te Aitanga-a-Hauiti) is an internationally renowned expert ocean navigator, and he notes in Evans (2021, p. 162) that navigator apprenticeship training starts with the reading of the stars, because “a major part of traditional navigation is about being able to find direction using the stars, the moon and the sun”. In Thatcher’s training extensive study of the moon, the sun

TABLE 1 Application of Te Arahina as a research methodology

Te pou (the markers)	Translation	Research application
Ta Rapunga	The Seeking	Research aims, objectives and methodologies
Te Kitenga	The Observing	Literature analysis and review Observations of the research area
Te Whāinga	The Pursuit	Research methods and investigations
Te Whiwhinga	The Attainment	Research findings and analysis
Te Rawenga	The Success	Review and finalise. Return to Te Rapunga with a new focus.

and the stars is required before the journeying can begin. The study of winds, currents, animal life and plants also required extensive time and effort. Polynesian navigators planned, prepared, reviewed and analysed data in preparation for ocean voyages, and they continue to do this today. Table 1 illustrates how Te Arahina can be applied as a research methodology.

Further applications of Te Arahina

Te Arahina can be applied in multiple contexts such as teaching, evaluation and a methodological or research approach because it is a tool that uses indicators as markers and requires the review of variables to adjust and adapt the course as necessary. In a research context, Te Arahina is a culturally robust methodology for reviewing, analysing and pursuing research goals. Entrepreneurial mindset education follows a similar system of innovating, pursuing and creating goals to achieve a desired outcome, making the Te Arahina process an accessible methodological system of learning. A Tainui leader is acclaimed to have guided the way forward by directing “Let it be to the right of the sun, of the moon, of the morning star on high” (Jones & Biggs, 1995, p. 14), and in a similar vein using environmental indicators with intention and purpose is a natural and easy inclination guided through intergenerational knowing.

Ehara ko te ia o te wai
Ehara hoki ko te pupuhi o te hau
Engari ko te whakatika kē o ngā rā
Ka tae ora te waka ki uta.

It is not the direction in which the current flows
Nor is it the direction in which the wind blows
Rather it is the setting of the sails
That enable a canoe to reach its destination.

This whakataūāki reinforces that no matter the trial or difficulty, the solution can be found in how

you address the issue. The power is in the mind of the decider, and there is always an alternative path. Along with the academic application of Te Arahina, like other Indigenous knowledge systems it has many other holistic applications. Indigenous knowledge “is a way in which people are able to voice and share their thoughts and support each other while working to reach a common understanding” (Jones & Biggs, 1995, p. 84) and can further support other methods of accomplishing aspirations.

My research on the entrepreneurial mindset has been guided by Te Arahina, and the depths of its potential has opened up diverse considerations of leadership, wayfinding and navigation, resilience, perseverance, and identity and well-being, among other areas. When referring to the use of Indigenous knowledge and its application, Royal (2017, p. 118) soundly articulates:

Work in mātauranga Māori is not merely concerned with ethnic pride and cultural revitalisation. Its deeper call relates to notions of indigeneity – how we can improve the way in which humankind exists and lives in the world through new strategies of indigeneity, rekindling kinship between people, and between people and the natural world. Kaupapa Māori too will make significant contributions in this direction.

Te Arahina involves constant reviewing and revising to help the researcher stay on course and recalibrate their research project whenever necessary. This model of resilience, redirection and recalibration provides a contextual framework to support research outcomes, and has many further applications. Before a navigator began their journey across oceans and lands, they would be prepared physically, emotionally and materially, and ensure they had the appropriate guidance and resources available to embark on the journey, as well as the blessing of their whānau. Similarly, it

is important that a researcher ensures they are well prepared for the journey ahead and takes the time to reflect and adjust along the way.

Polynesian navigators traversed the Pacific for thousands of years. They mentally mapped over 4,000 kilometres of ocean from Rotuma to the Marquesas and knew a myriad of islands, highlighting a “long history of finding their way to the edges of the Pacific [with] the sun, moon and stars ‘serving them for a compass’” (Druett, 2011, pp. 224–225). While simplistic in its fundamentals, Te Arahina is an adaptable, responsive model based on ancient mātauranga and navigational practices. Te Arahina is flexible in implementation, providing clear direction for undertaking and accomplishing a goal, whether it be in the pursuit of research, in entrepreneurial activities, or in other goal-orientated pursuits. Our ancient Polynesian ancestors were renowned navigators, and their legacies continue through their teachings, mātauranga and navigational feats to lead and guide us all today.

Glossary

Aotea	one of the ancient waka in the fleet that left Hawaiki for Aotearoa
Aotearoa	New Zealand
ara	path
ara whetu	star-path
arahina	moon-path
Atua	ancestor with continuing influence, supernatural being
he	[determiner] a
hihiri	energy, energetic, dynamic
hina	moon
hinengaro	mind, consciousness
karakia	prayer, incantation
kaumoana	ocean navigating expert
kaupapa	topic, purpose, proposal
Kaupapa Māori	Māori research approach
kitenga	observation, perception, insight
koloa	[Tongan] cultural materials to fulfill customs and traditions, gift, wealth
kukune	to swell, grow, advancing
mahara	consider, thoughtful, thought
mai i te ao Māori	from Māori beginnings
maku e rapu ka kitea	I will seek and find
manako	long for, desire

Māori	Indigenous peoples of Aotearoa
maramataka	environmental insight calendar, lunar calendar
mātauranga	knowledge, wisdom
mātauranga Māori	ancient Māori knowledge, Māori world view,
ngā	[particle, determiner] the (plural of te)
Pākehā	New Zealander of European descent
Papatūānuku/Papa	earth mother and wife to Ranginui
pono	be true, truth, valid
pou	pillar, post
pupuke	swell up, increase
pūrākau	ancient account, narrative
Ranginui/Rangi	sky father and husband to Papatūānuku
rapunga	search, inquiry, investigation
rawe	to be excellent
rawenga	state of excellence
Tainui	one of the ancient waka in the fleet that left Hawaiki for Aotearoa
Tāne	atua of the forest, one of the children of Rangi and Papa
tau utuutu	alternate, back and forth
te	[determiner, singular] the
te ao Māori	the Māori world
te rapunga i te ao marama	the search for the world of light
te reo	the Māori language
te whare wānanga	traditional place of higher learning
tika	to be correct, true, just
tūpuna	ancestors
wahine	woman, female
waka	ocean-going vessel, canoe
whāinga	pursuit, aim, goal, objective, purpose
whakapapa	genealogy, ancestry
whakataūāki	proverb, significant saying
whānau	family
whetu	star
whiwhinga	attainment, acquisition

References

- Anzai, Y., & Simon, H. A. (1979). The theory of learning by doing. *Psychological Review*, 86(2), 124–140. <https://doi.org/b87jx8>
- Arrow, K. J. (1971). The economic implications of learning by doing. In F. Hahn (Ed.), *Readings in*

- the theory of growth* (pp. 131–149). Palgrave Macmillan. <https://doi.org/crvt>
- Best, E. (1922a). *The astronomical knowledge of the Maori* (Monograph No. 3). Dominion Museum.
- Best, E. (1922b). *The Maori division of time* (Monograph No. 4). Dominion Museum.
- Best, E. (1923). *Polynesian voyagers: The Maori as a deep-sea navigator, explorer, and colonizer* (Monograph No. 5). Dominion Museum.
- Buck, P. (1966). *The coming of the Māori*. Whitcombe and Tombs.
- Burrell, G. (1994). Modernism, postmodernism and organizational analysis 4: The contribution of Jürgen Habermas. *Organization Studies*, 15(1), 1–19. <https://doi.org/bmqxwh>
- Charmaz, K. (2000). *Constructing grounded theory: A practical guide through qualitative analysis*. SAGE.
- Druett, J. (2011). *Tupaia: The remarkable story of Captain Cook's Polynesian navigator*. Random House New Zealand.
- DuFour, R., & DuFour, R. (2013). *Learning by doing: A handbook for professional learning communities at work*. Solution Tree Press.
- Durie, M. H. (2003). *Nga kähui pou: Launching Māori futures*. Huia.
- Evans, J. (2021). *Reawakened: Traditional navigators of Te Moana-nui-a-Kiwa*. Massey University Press.
- Feuer, L. S. (1989). *Imperialism and the anti-imperialist mind*. Transaction Publishers.
- Gergen, K. J., Gulerce, A., Lock, A., & Misra, G. (1996). Psychological science in cultural context. *American Psychologist*, 51(5), 496–503. <https://doi.org/b5wj96>
- Havea, J. (2014). Crossing cultures in Oceania. In S. L. Filipo, T. M. Suaalii-Sauni, M. A. Wendt, V. Mo'a, N. Fuamatu, U. L. Va'ai, & R. Whaitiri (Eds.), *Whispers & vanities: Samoan Indigenous knowledge and religion* (pp. 95–102). Huia.
- Heron, J., & Reason, P. (2006). The practice of co-operative inquiry: Research “with” rather than “on” people. In P. Reason & H. Bradbury (Eds.), *Handbook of action research* (pp. 144–154). SAGE.
- Honig, B. (2020). Exploring the intersection of transnational, ethnic, and migration entrepreneurship. *Journal of Ethnic and Migration Studies*, 46(10), 1974–1990. <https://doi.org/g67k>
- Houston, J. (1935). Aotea. *Journal of the Polynesian Society*, 44(1), 36–47.
- Hunkin, L. (2012). *Mātauranga Māori*. In D. Bean, T. Black, W. Collings, W. Nuku, & Haemata Ltd (Eds.), *Conversations on mātauranga Māori* (pp. 80–84). New Zealand Qualifications Authority.
- Irwin, G., Johns, D., Flay, R. G., Munaro, F., Sung, Y., & Mackrell, T. (2017). A review of archaeological Māori canoes (waka) reveals changes in sailing technology and maritime communications in Aotearoa/New Zealand, AD 1300–1800. *Journal of Pacific Archaeology*, 8(2), 31–43.
- Jones, P., Biggs, B., & Tainui Māori Trust Board. (1995). *Ngā iwi o Tainui: The traditional history of the Tainui people: Ngā koorero tuku iho a ngā tūpuna*. Auckland University Press.
- Ka'ai, T. (2008). Te ha whakawairua, whakatinana i te mātauranga Māori i te whare wananga: The validation of Indigenous knowledge within the university academy. *Te Kaharoa*, 1(1), 50–85. <https://doi.org/g67j>
- Kitchenham, A. (2008). The evolution of John Mezirow's transformative learning theory. *Journal of Transformative Education*, 6(2), 104–123. <https://doi.org/fn435x>
- Kovach, M. (2010). *Indigenous methodologies: Characteristics, conversations, and contexts*. University of Toronto Press.
- Lewis, D. (1966). Stars of the sea road. *Journal of the Polynesian Society*, 75(1), 84–94.
- Louis, R. P. (2007). Can you hear us now? Voices from the margin: Using Indigenous methodologies in geographic research. *Geographical Research*, 45(2), 130–139. <https://doi.org/fthnzp>
- Makiha, R. (2019a, May 17). *Ko Matariki e arau ana: The gathering of Matariki* [Presentation]. Vodafone Events Centre, Auckland, New Zealand.
- Makiha, R. (2019b, June 6). *Matariki | Puanga: Matariki kōrero with Matua Rereata Makiha* [Workshop]. Ōrakei Marae, Auckland, New Zealand.
- Makiha, R. (2019c, August 12). *Matariki Wānanga* [Presentation]. University of Auckland, New Zealand.
- Marsden, M., & Royal, T. A. C. (2003). *The woven universe: Selected writings of Rev. Māori Marsden*. Estate of Rev. Māori Marsden.
- Mead, H. M. (2013). *Tikanga Māori: Living by Māori values*. Huia.
- Mezirow, J. (1994). Understanding transformation theory. *Adult Education Quarterly*, 44(4), 222–232. <https://doi.org/bs8jfm>
- Moorfield, J. C. (n.d.-a). Ārahi. In *Te aka Māori dictionary*. Retrieved November 29, 2021, from <https://maoridictionary.co.nz/search?idiom=&phrase=&proverb=&loan=&histLoanWords=&keywords=%C4%81rahi>
- Moorfield, J. C. (n.d.-b). Kitenga. In *Te aka Māori dictionary*. Retrieved November 29, 2021, from <https://maoridictionary.co.nz/search?idiom=&phrase=&proverb=&loan=&histLoanWords=&keywords=kitenga>
- Moorfield, J. C. (n.d.-c). Rapunga. In *Te aka Māori dictionary*. Retrieved November 29, 2021, from <https://maoridictionary.co.nz/search?idiom=&phrase=&proverb=&loan=&histLoanWords=&keywords=rapunga>
- Moorfield, J. C. (n.d.-d). Rawe. In *Te aka Māori dictionary*. Retrieved November 29, 2021, from <https://maoridictionary.co.nz/search?idiom=&phrase=&proverb=&loan=&histLoanWords=&keywords=rawe>
- Moorfield, J. C. (n.d.-e). Whāinga. In *Te aka Māori dictionary*. Retrieved November 29, 2021, from <https://maoridictionary.co.nz/search?idiom=&phrase=&proverb=&loan=&histLoanWords=&keywords=Wh%C4%81inga>
- Moorfield, J. C. (n.d.-f). Whiwhinga. In *Te aka Māori dictionary*. Retrieved November 29, 2021, from

- <https://maoridictionary.co.nz/search?idiom=&phrase=&proverb=&loan=&histLoanWords=&keywords=Whiwhinga>
- Oktay, J. S. (2012). *Grounded theory*. Oxford University Press. <https://doi.org/g67h>
- Roberts, M., Weko, F., & Clarke, L. (2006). *Maramataka: The Maori moon calendar*. Agribusiness and Economics Research Unit, Lincoln University.
- Robinson, S. (2005). *Tohunga: The revival: Ancient knowledge for the modern era*. Reed.
- Royal, C. T. (2017). Politics and knowledge: Kaupapa Māori and mātauranga Māori. In T. Hoskins & A. Jones (Eds.), *Critical conversations in Kaupapa Māori* (pp. 109–118). Huia.
- Salmond, A. (1992). *Two worlds: First meetings between Maori and Europeans, 1642–1772*. University of Hawaii Press.
- Turei, P. (Director). (1993). *Kupe voyaging by the stars* [TV broadcast]. Nimrod Film Productions.
- Searls, D. (Ed.). (2009). *The journal of Henry David Thoreau, 1837–1861*. New York Review Books.
- Shah, S. (2004). The researcher/interviewer in intercultural context: A social intruder! *British Educational Research Journal*, 30(4), 549–575. <https://doi.org/bdvww4>
- Simmons, D. R., & Biggs, B. G. (1970). The sources of “the lore of the whare-wānanga”. *Journal of the Polynesian Society*, 79(1), 22–42.
- Smith, G. H. (1997). *The development of Kaupapa Maori: Theory and praxis* [Doctoral thesis, University of Auckland]. ResearchSpace. <http://hdl.handle.net/2292/623>
- Smith, L. T. (1991). Te rapunga i te ao marama (The search for the world of light): Māori perspectives on research in education. In T. Linzey and J. Morss (Eds.), *Growing up: The politics of human learning* (pp. 46–55). Longman Paul.
- Smith, L. T. (2012). *Decolonizing methodologies: Research and Indigenous peoples*. (2nd ed.). Zed Books.
- Sole, T. (2005). *Ngāti Ruanui: A history*. Huia.
- Spiller, C., Barclay-Kerr, H. & Panoho, J. (2015). *Wayfinding leadership: Groundbreaking wisdom for developing leaders*. Huia.
- Stebbins, R. A. (2001). *Exploratory research in the social sciences*. SAGE. <https://doi.org/g67g>
- Suaalii-Sauni, T. (2017). The va and kaupapa Māori. In T. Hoskins & A. Jones (Eds.), *Critical conversations in Kaupapa Māori* (pp. 161–178). Huia.
- Tāwhai, W. (2013). *Living by the moon: Te maramataka a Te Whānau-ā-Apanui*. Huia.
- Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, 52(5), 546–553. <https://doi.org/dhbp8>
- Williams, H. W., & New Zealand Advisory Committee on the Teaching of the Maori Language. (2001). *A dictionary of the Maori language* (7th ed.). Legislation Direct.