A Justification for Exploration: Hawaiian Wayfinding as an Evolving Model of Indigenous Science, Ethical Stewardship, and Relational Leadership

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Abstract

Hawaiian wayfinding is a living Indigenous knowledge system that integrates environmental observation, ethical practice, and leadership through relational and ecological intelligence. Mapping the contours of existing scholarship, this article argues that the present moment offers a critical opportunity to revisit historical Hawaiian-language materials, chants, and voyaging accounts to better inform contemporary leadership development and cultural revitalization. Wayfinding is approached as a dynamic epistemology—one that encodes environmental literacy, moral conduct, and intergenerational pedagogy within an adaptive and coherent system of practice.

Drawing on three intersecting analytical frameworks—Indigenous Knowledge Systems (IKS), Decolonization and Knowledge Revival (DKR), and Leadership and Pedagogy (LP)—the article traces how colonial disruption fragmented Hawaiian knowledge systems and how cultural practitioners, educators, and scholars have worked to reclaim and reconstruct wayfinding traditions with both fidelity and innovation. From an IKS perspective, wayfinding exemplifies embodied learning, apprenticeship, and relational accountability. The DKR framework highlights revival as ethical repair, emphasizing authorship, cultural sovereignty, and the politics of representation across the Pacific. The LP lens illuminates mentorship, distributed leadership, and values such as aloha ʻāina (care for the land), kuleana (responsibility), and pilina (relationship) as central to continuity.

Ethical considerations are woven throughout, underscoring that wayfinding is not merely a technical discipline but a moral and relational practice. The article concludes with policy recommendations focused on Hawaiian-language and wayfinding curricula, mentorship-based training, community-led archives, and cross-Pacific partnerships grounded in consent and reciprocity. By bridging ancestral epistemologies with contemporary leadership and educational practice, this article positions Hawaiian wayfinding as an evolving model of Indigenous science, ethical stewardship, and relational leadership for a changing world.

Keywords: Navigation, Indigenous, Decolonization, Leadership, Stewardship, Wayfinding

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Introduction

Hawaiian wayfinding is more than a method of oceanic navigation; it is a system of leadership, environmental observation, and community coordination rooted in an interconnected worldview (Beckwith, 1932; 1970; Kamakau, 1961; Malo, 1951). Historically, it served as a foundation for governance, resource management, and collective resilience. During the nineteenth and early twentieth centuries, however, these practices were profoundly disrupted by colonial suppression, linguistic loss, and the imposition of Western educational paradigms (Osorio, 2002; Silva, 2004). Although elements of wayfinding knowledge endured in mele (chants), moʻolelo (historical narratives), and kaʻao (traditional stories or legends), the continuity of wayfinding as both a leadership discipline and a practical wayfinding system was significantly diminished. In the present moment—marked by cultural revitalization efforts, leadership needs, and ecological uncertainty—reexamining these traditions with scholarly rigor and cultural accountability is both timely and necessary.

This paper examines the disruption and recovery of Hawaiian wayfinding as an Indigenous knowledge system that functions simultaneously as a framework for education, leadership, and environmental stewardship. Focusing primarily on Hawaiʻi while acknowledging resonance across the Pacific (Finney, 1979; 1994; 2003; Genz, 2011; 2016; George, 2012; Gladwin, 1970; Lewis, 1972), it explores how wayfinding knowledge has been revitalized within shifting sociopolitical and ecological contexts. The central actors in this history—voyagers, cultural practitioners, educators, and scholars—serve not only as custodians of ancestral knowledge but as architects of its contemporary transformation. Rooted in Hawaiian-language sources, oral histories, and modern pedagogical practices, Hawaiian wayfinding operates as a living epistemology that bridges

ancestral observation with contemporary leadership challenges (Meyer, 2003; Smith, 2021; Wilson, 2008).

Four theoretical frameworks guide this inquiry: Indigenous Knowledge Systems, Decolonization Theory, Distributed Leadership Theory, and Succession Theory. From an Indigenous Knowledge Systems perspective, wayfinding emerges as a relational epistemology transmitted through embodied practice, intergenerational mentorship, and ceremony (Meyer, 2003; Smith, 2021; Wilson, 2008). Decolonization Theory situates the loss and recovery of wayfinding within broader structures of imperial power, emphasizing authenticity, accountability, and community authority in cultural reconstruction (Battiste, 2013; Chilisa, 2012; Kovach, 2009; Smith et al., 2019). Distributed Leadership Theory reframes wayfinding as a collaborative and context-responsive practice grounded in collective governance and mutual responsibility (Gronn, 2002; Spillane, 2006). Succession Theory highlights how leadership capacities are cultivated and transferred across generations, revealing both the adaptive strength of Hawaiian communities and the vulnerabilities introduced by colonial disruption (Santora et al., 2015).

Together, these frameworks position Hawaiian wayfinding not only as a historical tradition but as a contemporary expression of Indigenous agency, pedagogical innovation, and ethical leadership. Reclaiming wayfinding constitutes both a cultural and strategic act—one that strengthens community capacity, reinforces relational ethics, and revitalizes Indigenous governance systems. Potential pathways for sustaining Hawaiian wayfinding knowledge include curriculum integration, mentorship-based learning, expanded archival access, and cross-Pacific collaboration, guided by the principle that cultural revival must honor specificity while contributing to a broader Indigenous resurgence (Simpson, 2017).

Literature Review

This literature review sits at the intersection of Hawaiian cultural practice, Indigenous knowledge systems, and contemporary educational and leadership frameworks. It centers on Hawaiian wayfinding, a relational and multilayered epistemology integrating astronomical, oceanographic, meteorological, ecological, and genealogical knowledge. Wayfinding is not solely a method for crossing the ocean; it is a living Indigenous knowledge system that encodes relationships between people, ancestors, land, and sea. After colonial disruptions fragmented this body of knowledge, archival, ethnographic, and experiential scholarship began working to reconstruct it and assess how these reconstructions might inform contemporary leadership and pedagogy. Drawing on scholarship from Hawai‘i and across Oceania, this review highlights both the distinctiveness and regional resonances of Hawaiian wayfinding. Together, these studies show that wayfinding knowledge systems are embedded in broader cosmologies, relational ethics, and pedagogical traditions that continue to shape Indigenous leadership across the Pacific.

Problem, Scope, and Key Actors

Hawaiian wayfinding knowledge was profoundly fragmented by colonization, suppression of the Hawaiian language, and Western schooling systems that displaced Indigenous epistemologies. While elements persisted in mele, mo‘olelo, and ritual practice, the relational infrastructure needed for intergenerational transmission eroded. The result is a dispersed corpus of archival fragments, uneven translations, partial oral traditions, and a substantial gap between historical references and functional practice. Similar patterns appear across Oceania, where cosmological, linguistic, and apprenticeship disruptions weakened voyaging traditions (Ahlgren, 2016; Knottmann, 2000; Tuaupiki, 2017). These shared challenges situate Hawaiian experiences within a broader Pacific trajectory of epistemic displacement.

Temporally, this review spans early 20th-century ethnographic sources through late 20th- and 21st-century revival movements. Key actors include Indigenous wayfinders, educators, archival scholars, revival leaders, and voyaging organizations. Figures such as Mau Piailug, Nainoa Thompson, and the hundreds of Hawaiian women wayfinding students (Enos, 2015; Lincoln Maielua, 2013; Wilson, 2010) illustrate living practice, while linguists and historians (Johnson et al., 2015; Nogelmeier, 2003; Noyes, 2011) illuminate the archival dimension.

Analytical Lenses

Three perspectives guide this review: Indigenous Knowledge Systems (IKS), Decolonization and Knowledge Revival (DKR), and Leadership and Pedagogy (LP).

- IKS emphasizes relationality, embodied learning, ancestral accountability, and ecological attunement (Meyer, 2003; Wilson, 2008), framing wayfinding as an ethical and embodied practice.
- DKR highlights historical disruption, translation politics, ceremonial authority, and Indigenous sovereignty in knowledge revival (Ahlgren, 2016; Nogelmeier, 2003).
- LP foregrounds mentorship, distributed responsibility, succession, and values-based learning. Voyaging studies show that wayfinding cultivates leaders grounded in cooperation, moʻokūʻauhau, perseverance, and reflective decision-making (Enos, 2015; Knottmann, 2000; Lincoln Maielua, 2013; Tuaupiki, 2017; Wilson, 2010).

Together, these lenses offer a coherent framework for analyzing historical foundations, revival movements, methodological challenges, cognitive models, and leadership implications.

Documentary Foundations and Prior Scholarship

Foundational research on Pacific wayfinding draws from both regional ethnographic studies and Hawaiian-language archival materials. Early analyses of Micronesian and Polynesian

voyaging systems established the first coherent frameworks for understanding non-instrument navigation, detailing star paths, wave-piloting, and mnemonic knowledge transmission (Burrows & Spiro, 1957; Krämer, 1937; Gladwin, 1970; Lewis, 1972). These studies were part of a longer lineage of Carolinian research dating to the early twentieth century (Sarfert, 1911; Damm & Sarfert, 1935; Goodenough, 1953; Alkire, 1965) and complemented Polynesian-focused works (Golson, 1963; Lewis, 1964; Sharp, 1964). Hawaiian archival sources—newspapers, chants, lexical records, and early ethnographies—offered celestial knowledge in more metaphorical, poetic, or dispersed forms (Andrews, 1865; Makemson, 1939; Poepoe, 1909), requiring interpretive skill to reconstruct cosmological and navigational contexts.

A major scholarly advance came with *Nā Inoa Hōkū* (Johnson & Mahelona, 1975), which systematically compiled Hawaiian and Pacific star names and correlated them with Western astronomical designations. The expanded 2015 revision (Johnson et al., 2015) deepened linguistic analysis, widened the corpus, and highlighted the importance of historically attested sources. These compilations became vital bridges between archival knowledge and contemporary wayfinding practice. As Nogelmeier (2003) demonstrated, many English translations had reshaped Hawaiian historical texts to fit Western narrative expectations, underscoring the need for Hawaiian-language fluency when interpreting celestial metaphors, figurative descriptions, and ritual contexts encoded in the archive.

The cultural resurgence initiated by the Polynesian Voyaging Society further transformed both practice and scholarship. The 1975 launching of *Hōkūleʻa* and the 1976 voyage to Tahiti under Mau Piailug triggered renewed interest in the depth and complexity of Pacific wayfinding. Crew members Lewis (1978) and Finney (1979) documented these journeys, integrating experiential insights with earlier scholarly work. Drawing on earlier planetarium collaborations

(Kyselka & Bunton, 1969; Kyselka & Lanterman, 1976), Kyselka (1987) described Nainoa Thompson's training process, the creation of a neo-Hawaiian navigational system, and the pedagogical adaptation of Micronesian teachings. Steven Thomas's *The Last Navigator* (1987), based on fieldwork with Mau on Satawal, added intimate detail about Carolinian mentorship and epistemology. Finney (1994, 2003) continued to document the revival's expansion, including the schooling of new navigators and the design of instructional systems that blended Hawaiian, Micronesian, and Western sources.

Parallel scholarly developments strengthened the documentary and conceptual foundation of wayfinding studies. Halpern (1985) analyzed Carolinian compass models; Metzgar (1991) documented pwo (navigator initiation) as a pedagogical and cosmological system; and anthropologists and educators analyzed pathways of knowledge transmission across Oceania. Knottmann (2000) examined Māori waka traditions as carriers of genealogy and identity, while in Hawai‘i, ethnographic works by Enos (2015), Lincoln Maielua (2013), and Wilson (2010) foregrounded Hawaiian women's experiences, leadership formation, and relational pedagogies within voyaging communities. Together, this body of work demonstrated that wayfinding systems are embedded in cosmology, ethics, genealogy, and cultural practice—not isolated technical skills.

Astronomical and linguistic work proceeded in parallel. The Kōmike Hua‘ōlelo (Hawaiian Lexicon Committee), established in 1987, coined or standardized more than 100 celestial and navigational terms (Kōmike Hua‘ōlelo, 2003; Kapano, 2016). The International Astronomical Union systematized planetary and lunar nomenclature (Wilkins, 1989), later forming the Working Group on Star Names (IAU, 2019), through which Hawaiian names—such as Paikauhale for τ Scorpii in 2018—were officially recognized. Collaborations like ‘A Hua He Inoa (‘Imiloa

Astronomy Center, 2019) strengthened this expansion of Indigenous astronomical knowledge into global scientific contexts.

Curricular resources and archaeological studies also proliferated. Noyes's *Polynesian Star Catalog* (2011) synthesized Hawaiian, Micronesian, and Melanesian names, extending the corpus established by *Nā Inoa Hōkū*. Research into archaeoastronomy increased across Hawai‘i and Oceania—at Ko‘a Heiau Holomoana (Lindsey Buyers, 2000; Mello, 2017), Nihoa and Mokumanamana (Kikiloi, 2012), Kūkaniloko (Lenchanko, 2015), Pu‘u o Kapolei (Ancheta, 2016), and in Fiji (Holbrook, 2016)—often linking celestial alignments with ritual, chiefly authority, and Indigenous stewardship. Work on Hawaiian lunar astronomy (Tsuha, 2007) and cross-cultural astronomical epistemologies (Ellsworth, 1987; Walker, 2012) further contextualized wayfinding within broader Indigenous systems of environmental observation. Holo Ho‘opai (2019) traced the entangled histories of Hawaiian and Western astronomy in the contemporary politics of Maunakea.

Ethnographic and practitioner-centered studies deepened understanding of contemporary Hawaiian voyaging's pedagogical evolution. Barcarse (2013) triangulated Hawaiian-language sources with Nainoa Thompson's curriculum to articulate the structure and epistemic foundations of neo-Hawaiian wayfinding. Lincoln Maielua (2013) documented the 2007 Kū Holo Mau voyage, where Mau conferred pwo status on five Hawaiian navigators—an unprecedented cross-cultural transfer of lineage authority. Comparative work continued on communities where unbroken voyaging traditions persist, including Taumako in the Solomon Islands (George, 2012) and the Marshall Islands (Genz, 2018).

By the mid-1990s, the University of Hawai‘i and PVS formalized credit-bearing courses in Hawaiian astronomy and navigation, standardizing an instructional model blending Hawaiian archival knowledge, Western astronomy, Micronesian teachings, and experiential learning. This

reflected Thompson's early pragmatic stance—"My job is getting the canoe there [to Tahiti], not to find out what ancient people did" (Kyselka, 1987, p. 208)—which shaped curriculum design in the revival's early decades. The revised *Nā Inoa Hōkū* (Johnson et al., 2015) responded to rising interest by consolidating historically grounded Hawaiian star knowledge while acknowledging but not incorporating PVS-coined terms, thereby maintaining a documentary rather than operational mandate.

Collectively, this interdisciplinary and intergenerational body of work forms the documentary foundation for understanding wayfinding as a scientific, cultural, ethical, and relational system that extends far beyond technique—rooted instead in worldview, language, genealogy, and lived practice.

Overview of Hawaiian Wayfinding

Hawaiian wayfinding synthesizes celestial observations, wind patterns, ocean swells, cloud behavior, biological cues, and genealogical relationships into a unified environmental reading. The modern Hawaiian star compass, developed by Nainoa Thompson between his first voyage aboard Hōkūleʻa in 1976 and Mau Piailug's agreement to formally train him from September 1979 to March 1980, emerged from Thompson's effort to articulate this holistic practice (Kyselka, 1987). Drawing deeply on Micronesian wayfinding models—particularly teachings from Mau's Weriyeng lineage—the compass translates diverse environmental relationships into a structured cognitive framework. Weriyeng, alongside Fanur, is one of the last surviving schools from what were once nearly 20 millennia-old traditional wayfinding guilds in Micronesia (Gladwin, 1970; Lewis, 1972; Metzgar, 1991), and its teachings profoundly informed the conceptual foundations of Thompson's system.

The Hawaiian star compass operationalizes wayfinding knowledge into 32 horizon houses and four wind quadrants, providing a mnemonic and spatial map through which wayfinders track directional shifts, swell patterns, and celestial movement (Kyselka, 1987; Finney & Low, 2007). Stars are grouped into rising and setting families that anchor orientation across the open ocean. Winds and clouds are read in relation to island topography, while seabird behavior, variations in water color, and wave refractivity signal proximity to land. This integrated observational practice reflects a Hawaiian epistemological principle that knowledge is relational, contextual, and embodied—emerging through reciprocal engagement with the environment rather than abstract measurement (Meyer, 2003). While structurally resonant with Weriyeng's paafu, the Hawaiian compass is uniquely adapted to the skies, winds, and oceanic conditions of Hawai‘i, including the demands of long-distance voyaging both within and beyond the tropics. Its design accommodates Hawai‘i's extreme geographic isolation and the wayfinding challenges of interarchipelagic travel. Comparative work across Oceania further contextualizes this model. Māori, Tahitian, and Marshallese wayfinding systems similarly organize celestial and oceanic space through culturally embedded mental maps (Genz, 2011; 2016; George, 2012; Teriierooiterai, 2013). Teriierooiterai's linguistic reconstruction of Tahitian celestial classification, for example, demonstrates how cosmology and wayfinding share conceptual roots, reinforcing that Hawaiian and other Polynesian systems evolved from intertwined mythological, genealogical, and observational knowledge traditions.

Historical Sources and Celestial Knowledge

Archival Hawaiian sources provide the earliest written accounts of celestial knowledge, although these references appear primarily in metaphorical, poetic, or ritual contexts rather than as explicit wayfinding instruction. Documents by Bryan (1995), Fornander (1878; 1916-1920),

Kamakau (1865a-b; 1961; 1964), Malo (1951), Poepoe (1909a-i), and others contain star names, cosmological structures, and ritual associations that require careful interpretation. Makemson's (1939-1941) synthesis—produced with the assistance of Mary Kawena Pukui—linked many of these star names to identifiable celestial bodies, though functional details related to wayfinding remained limited.

A central challenge in working with these materials is that historical Hawaiian texts reflect worldviews, not technical manuals. As Nogelmeier (2003) observes, Hawaiian authors wrote for readers who already possessed cultural grounding and environmental familiarity; modern interpretation therefore depends on linguistic fluency, contextual understanding, and comparative Pacific analysis. Other Polynesian examples—such as Tahitian cosmological layering (Teriierooiterai, 2013) and Māori genealogical mappings of wayfinding knowledge (Tuaupiki, 2017)—further illustrate that celestial knowledge is embedded within cosmological, ritual, and genealogical structures rather than isolated as discrete wayfinding data.

Methodological Challenges in Reconstruction

Reconstructing Hawaiian wayfinding traditions presents several interrelated methodological challenges. Many Hawaiian-language sources remain untranscribed or untranslated, and existing translations frequently obscure Indigenous conceptual categories or impose Western interpretive frames (Nogelmeier, 2003). The loss of traditional apprenticeship structures compounds this difficulty; historically, wayfinding knowledge was transmitted through embodied practice—apprenticeship, observation, ritual discipline, and communal responsibility—rather than through written documentation.

Comparable losses have been documented in Māori and Marshallese traditions, where embodied pedagogies similarly shaped the transmission of wayfinding expertise (Ahlgren, 2016;

Tuaupiki, 2017). Another major challenge lies in bridging the interpretive gap between historical references and functional practice. Archival sources rarely describe how knowledge was applied in situ, making it necessary for modern wayfinders to triangulate between archival fragments, empirical experimentation, and experiential learning to maintain both cultural fidelity and practical effectiveness (Barcarse, 2013; Finney & Low, 2007). Across the Pacific, scholarship consistently emphasizes that wayfinding cannot be reconstructed through texts alone; it must be reactivated through relational, environmental, and embodied engagement.

Integration with Contemporary Practice

The Hawaiian Renaissance of the 1970s catalyzed the contemporary revival of wayfinding, positioning voyaging as a form of cultural restoration, political assertion, and leadership development (Finney, 1994; 2003; Iaukea, 2021). Subsequent ethnographic research has expanded this understanding. Wilson (2010) examines gendered experiences of voyaging, showing how Hawaiian women articulate wayfinding through themes of perseverance, spiritual connection, genealogical continuity, and cooperative leadership. Enos (2015) similarly demonstrates that Indigenous pedagogical methods—observation, applied practice, reflection, and reciprocal teaching—play a central role in the transmission of voyaging knowledge and in shaping long-term personal and professional trajectories.

Comparative Pacific scholarship reinforces these findings. Studies of Māori and other voyaging revivals reveal parallel dynamics in which waka traditions cultivate identity, reaffirm Indigenous authority, and foster leaders grounded in relational values (Knottmann, 2000; Tuaupiki, 2017). Taken together, these works illustrate that contemporary Hawaiian wayfinding functions not merely as a revival of historical techniques but as a culturally embedded system of leadership formation and community regeneration.

The Case for Culturally Grounded, Functional Systems

Culturally grounded functional systems require three interdependent components: archival foundations to preserve historical knowledge, embodied practice to validate, refine, and operationalize that knowledge, and relational pedagogies that cultivate leaders rather than technicians. Ethnographic studies of Hawaiian women voyagers highlight how functional practice teaches ethical responsibility, humility, patience, collective action, and genealogical consciousness (Enos, 2015; Wilson, 2010). Comparative work across the Pacific similarly demonstrates that wayfinding systems persist only when embedded within Indigenous worldviews, languages, and ecological relationships (Ahlgren, 2016; Tuaupiki, 2017). Accordingly, the reconstruction of Hawaiian wayfinding must integrate archival scholarship with experiential learning and culturally grounded pedagogies. The Hawaiian star compass and related mental frameworks exemplify this synthesis: historical fragments are translated into usable knowledge through practice, reflection, mentorship, and communal accountability. Ultimately, culturally rooted wayfinding systems matter not simply because they produce competent wayfinders, but because they cultivate ethical leaders capable of relational, values-based decision-making in a changing world.

Analysis

Three primary perspectives guide this analysis—Indigenous Knowledge Systems (IKS), Decolonization and Knowledge Revival (DKR), and Leadership and Pedagogy (LP)—supported by four intersecting theoretical frameworks: Indigenous Knowledge Systems Theory, Decolonization Theory, Distributed Leadership Theory, and Succession Theory. Together, these frameworks provide a multidimensional foundation for examining Hawaiian wayfinding as both an ancestral knowledge system and a contemporary paradigm for Indigenous leadership development. Across the literature, three major themes emerge: (1) holistic integration of

knowledge, (2) adaptive and dynamic knowledge systems, and (3) mentorship and distributed leadership. Each theme highlights the interplay among environmental cognition, cultural continuity, and ethical stewardship, demonstrating how Hawaiian wayfinding persists not only as a method of wayfinding but also as a blueprint for leadership grounded in community, environment, and spirituality.

Theme 1: Holistic Integration of Knowledge

Hawaiian wayfinding demonstrates a holistic epistemology—an integrated framework that unites celestial, oceanic, biological, and social information into a coherent system of orientation, decision-making, and leadership. This integration extends beyond technique; it reflects an ontology that situates humans within a web of reciprocal relationships. Wayfinders observe star paths, ocean swells, wind directions, cloud formations, and seabird flight patterns not as discrete data points but as interdependent indicators of balance and change in the surrounding environment (Finney, 1979; 1994; 2003; Kyselka, 1987; Lewis, 1972). Each observation contributes to an evolving pattern that guides the canoe, the crew, and, by extension, the community that relies upon them.

From an IKS perspective, this theme exemplifies relational epistemology: knowledge is embodied, transmitted through practice, and validated by lived experience. Apprenticeship, memorization, and guided observation under a master wayfinder reflect the IKS principle that knowledge is inseparable from the social and ecological contexts in which it is learned (Meyer, 2003, 2008; Wilson, 2008). The Hawaiian star compass functions as a cognitive and pedagogical framework, transforming environmental inputs into an integrated mental schema that guides perception and judgment. In this sense, the wayfinder becomes the instrument, embodying the synthesis of knowledge and practice.

From a DKR perspective, holistic integration underscores both the magnitude of colonial disruption and the ethical responsibility of revival. The suppression of Hawaiian language and traditional education fragmented the systems that once unified wayfinding, cosmology, and governance (Osorio, 2002; Walker, 2012). Reviving these connections requires interpretive care and cultural accountability, especially since mo‘olelo and oli often encode wayfinding principles metaphorically or ceremonially. Ethical reconstruction, as emphasized by decolonial scholars (Battiste, 2013; Chilisa, 2012; Kovach, 2009; Smith, 2021), involves restoring functionality while maintaining fidelity to cultural intent.

From the LP perspective, holistic integration reinforces distributed leadership. Decision-making aboard a voyaging canoe is situational and collective, shifting fluidly according to expertise and environmental conditions. Apprentices learn collaboratively, reflecting a pedagogy grounded in observation, cooperation, and shared accountability (Buente et al., 2020; Spillane, 2006). The wayfinder’s recognition of interconnected systems mirrors the leader’s understanding of community interdependence. Holistic integration therefore reflects the confluence of IKS and Distributed Leadership Theory: knowledge is collective and embodied, and leadership emerges organically from interaction with one’s environment.

Theme 2: Adaptive and Dynamic Knowledge

Hawaiian wayfinding is not static; it evolves dynamically in response to environmental, historical, and cultural change. This adaptability is a defining characteristic of Indigenous knowledge systems, which prioritize responsiveness over rigidity. Across centuries, wayfinders adapted mental frameworks to local winds, currents, celestial patterns, and island geography while maintaining core epistemological principles.

From an IKS perspective, adaptability reflects epistemic resilience: knowledge emerges through continuous observation and verification. The Hawaiian star compass exemplifies this—rooted in ancestral knowledge yet reorganized by Nainoa Thompson in the late 20th century to align with Hawaiian geocultural, linguistic, and pedagogical needs (Finney & Low, 2007; Kyselka, 1987). This innovation demonstrates the vitality of IKS as a living framework (Meyer, 2008).

Through a DKR lens, adaptation carries ethical significance. Colonialism imposed rigid hierarchies that undermined Indigenous adaptability and constrained knowledge transmission. Decolonization requires restoring Indigenous autonomy to determine how knowledge evolves (Battiste, 2013; Smith et al., 2019). Revivalists engage in iterative processes—testing archival interpretations at sea, validating knowledge through observation, and refining understandings through communal dialogue—illustrating Kovach's (2009) principle of cyclical, reflexive Indigenous methodology.

From the LP standpoint, adaptability is central to both distributed leadership and succession. Wayfinders train apprentices not merely to memorize star paths but to interpret shifting conditions and make informed decisions. Succession occurs relationally as apprentices demonstrate readiness, responsibility, and competence (Fink, 2010; Kenny & Fraser, 2012; Santora et al., 2015). Adaptation thus illustrates the interplay between DKR and Succession Theory, revealing that Indigenous knowledge systems endure through ethical transformation, not static preservation.

Theme 3: Mentorship, Succession, and Distributed Leadership

Mentorship lies at the heart of Hawaiian wayfinding. Through long-term apprenticeship, wayfinders cultivate technical proficiency alongside relational and ethical awareness. The canoe becomes both classroom and community—a living site of pedagogy, governance, and identity

formation. From an IKS perspective, mentorship operationalizes relational epistemology. Knowledge emerges through observation, repetition, reflection, and embodied engagement with teacher, crew, and environment (Finney, 1979; 1994; 2003; Meyer, 2003; 2008; Wilson, 2008). Apprenticeship connects learners to genealogies of practice, reinforcing accountability across generations. DKR highlights mentorship as a site of ethical responsibility and cultural sovereignty. The transfer of wayfinding knowledge entails safeguarding protocols and ensuring that revival occurs on Indigenous terms (Aisek, 2018, 2022; Haleyalur, 2022a). Mentors function as stewards—facilitating access while maintaining cultural integrity and relational ethics (Smith, 2021). From the LP perspective, mentorship and distributed leadership are intertwined. Leadership aboard a voyaging canoe is shared, situational, and dynamic. Wayfinders model humility, adaptability, and collective care (Buente et al., 2020; Spillane, 2006). Succession unfolds gradually as apprentices earn trust and responsibility. Mentorship thus embodies the convergence of IKS, DKR, Distributed Leadership, and Succession Theory, serving as the mechanism through which knowledge, values, and authority circulate across generations.

Synthesis Across Perspectives

Across these themes, a coherent pattern emerges: Hawaiian wayfinding is a living system of knowledge, ethics, and leadership. Holistic integration reflects Indigenous relational epistemology; adaptability exemplifies decolonial praxis and succession; and mentorship embodies Indigenous pedagogy and collective governance. Together, these perspectives show that Hawaiian wayfinding is not merely a revival of precolonial practice but a sophisticated, contemporary model for leadership, education, and ethical stewardship. Hawaiian wayfinding thus stands as both metaphor and method—an Indigenous science, a philosophy of relationship, and a living culture of leadership capable of guiding communities through a changing world.

Ethical Implications

Reconstructing and practicing Hawaiian wayfinding carries profound ethical responsibilities arising from the intersections of historical disruption, cultural sovereignty, and practical application. Ethical considerations emerge not only from the need to preserve historical accuracy but also from the imperative to ensure that knowledge revival serves contemporary Hawaiian communities in culturally appropriate, relationally grounded ways. Across perspectives—Indigenous Knowledge Systems, Decolonization and Knowledge Revival, and Leadership & Pedagogy—ethics functions not as an external code but as an intrinsic element of the knowledge system itself.

Indigenous Knowledge Systems Perspective

From an Indigenous Knowledge Systems (IKS) perspective, ethical stewardship is inseparable from relational accountability. Knowledge within Hawaiian wayfinding is not abstract or proprietary but arises through the dynamic relationships among people, places, and the natural world. Wayfinding knowledge is validated through embodied experience, observation, and intergenerational mentorship, all of which depend on reciprocal responsibility between learner, teacher, and environment (Meyer, 2003; 2008; Smith, 2012; Wilson, 2008).

Ethical obligations therefore extend to the methods of knowledge transmission. Apprentices are taught to observe, internalize, and apply wayfinding principles in ways that honor both ancestral wisdom and ecological integrity. Misrepresentation or decontextualization of such knowledge—such as presenting wayfinding solely as a technical or universal science—constitutes an ethical breach, severing the relational foundations that give the practice meaning. The star compass itself embodies these ethical dimensions: it encodes both environmental knowledge and cultural values, reinforcing that correct practice is inseparable from right relationship.

Relational ethics also require community engagement. Practitioners must remain accountable to Hawaiian communities, cultural educators, and kūpuna (elders or ancestors) whose lived experience anchors the practice. Ethical stewardship in this sense transcends accuracy alone; it involves honoring the epistemic sovereignty of Indigenous practitioners and ensuring that revived systems remain aligned with communal values rather than external validation metrics or institutional agendas.

Decolonization and Knowledge Revival Perspective

From a Decolonization and Knowledge Revival (DKR) perspective, ethical practice in wayfinding is both an act of resistance and an act of repair. Centuries of colonial disruption fragmented the Hawaiian knowledge continuum—through the suppression of the Hawaiian language, the imposition of Western schooling, and the systemic devaluation of Indigenous epistemologies (Battiste, 2013; Osorio, 2002; Walker, 2012). The surviving records of star lore, wayfinding vocabulary, and voyaging practice are often metaphorical, partial, or embedded in ceremonial language, requiring culturally accountable interpretation. Ethical revival therefore demands a balance between historical fidelity and functional renewal, ensuring that reconstructed systems remain operationally viable while aligned with the epistemic and ceremonial contexts from which they originate (Aisek, 2018, 2022; Haleyalur, 2022a; Kovach, 2009).

Decolonization also requires transparency in interpretive method—explicitly articulating how historical sources are read, translated, and adapted—so that reconstructions do not obscure Indigenous authorship or authority (Chilisa, 2012; Smith, 2021). Transparent methodology safeguards cultural sovereignty and protects ancestral knowledge from commodification or institutional appropriation. For Hawaiian wayfinding revivalists, this means shouldering twin

obligations: reconstructing systems for contemporary use while preserving the integrity of their genealogical, ceremonial, and cultural foundations.

Micronesian perspectives on *pwo* lineage illuminate the stakes of these responsibilities. The *pwo* ceremony provides the backbone of authority, succession, and stewardship in Micronesian voyaging systems. *Pwo* is not a mastery credential but the ceremonial beginning of deeper learning and heightened responsibility. It marks entry into a disciplined lineage, not graduation from it. Historical and oral accounts demonstrate that *pwo* transfers not only technical knowledge but also ethical obligations and genealogical continuity (Alkire, 1965; 1978; Feinberg, 1988; Gladwin, 1970; Lewis, 1972). A reconstruction of *pwo* ceremonies from 1932 to 2023 reveals the resilience and continuity of Micronesian leadership networks. Suuta's 1932 initiation on Satawal, Angora's mid-century initiation of Piailug (ca. 1948–1952), and Jesus Urupiy's 1990 Lamotrek ceremony reinforced a lineage that spans across Micronesia (Ahlgren, 2016; Flinn, 1992; Metzgar, 1991). At the turn of the millennium, Piailug's ceremonies in 2007 and 2008 initiated Hawaiian (Nainoa Thompson, Shorty Bertelmann, Bruce Blankenfeld, Kālepa Baybayan, and ʻŌnohi Paishon), Māori (Sir Hekenukumai Busby and Jacko Thatcher), Pakeha (Piripi Evans), and Cook Islands (Tua Pittman) wayfinders, forging formal links between Polynesian and Micronesian wayfinding lineages (Finney, 1979; 1994; 2003; Finney & Low, 2006; Genz, 2011; 2016; Kyselka, 1987). Subsequent ceremonies led by Ali Haleyalur, Rainam Edward, Rapwi Yalwairh, and Kasper Mark affirm that *pwo* remains a living, community-centered institution that adapts while maintaining cultural integrity.

Understanding *pwo* lineage is essential before addressing contemporary tensions around cultural authority and representation. In public discourse, *pwo* is often mischaracterized as a title meaning "master navigator," whereas in Micronesian epistemology the term tends to refer

specifically to the initiation ceremony. In Weriyeng traditions, initiation signals the beginning of advanced learning under one's teacher and the acceptance of relational, moral, and communal responsibilities. Such terminological drift risks erasing Micronesian sovereignty over their ceremonial vocabulary and conflating distinct traditions of learning, responsibility, and authority.

These concerns have surfaced in recent discussions among initiated wayfinders. In some conversations, Polynesian practitioners have explored the possibility of Micronesian lineage masters conferring *pwo* or *pairourou* status upon Polynesian students—even when those students had not studied Micronesian systems. Some Micronesian wayfinders have indicated that *pwo* is not a transferable credential but a lineage-specific initiation grounded in Micronesian cosmology, ceremony, and genealogical responsibility. They have emphasized that students trained within Polynesian traditions should ideally be initiated within culturally grounded Polynesian frameworks—bearing names and protocols appropriate to those traditions—rather than adopting *pwo* as a pan-Pacific label. The continued use of *pwo* to name Polynesian ceremonies—even when consultation centers primarily on Satawalese representatives rather than the broader Weriyeng leadership across Micronesia—may inadvertently privilege a narrow segment of Micronesian authority. Such selective engagement risks echoing colonial dynamics in which certain voices are elevated while wider lineage structures of naming, authorship, and recognition remain underacknowledged.

Gender dynamics further illustrate some of the uneven patterns within revival-era ceremonial practice. In many Polynesian voyaging communities, women constitute a significant proportion of students—often including those with the longest training, deepest scholarly and community engagement, and most sustained voyaging practice. Yet, to date, no Polynesian women appear to have been formally initiated within a Polynesian-named wayfinding ceremony. Tentative

plans have been discussed for several years, with proposed dates now potentially in early 2026. In contrast, modern Micronesian systems have already initiated women wayfinders, including ceremonies in 2018 (for Kimberly Romoloilug) and 2022 (for Dr. Melissa Taitano). While the reasons for these differences may be complex, the pattern raises thoughtful questions about how ceremonial authority is conferred, how institutional processes operate, and how gendered expectations—shaped in part by colonial histories—may influence recognition within contemporary Polynesian voyaging movements.

From a wider Pacific standpoint, the voyaging renaissance raises additional questions of narrative ownership. While Piailug's teachings catalyzed Hawaiian and broader Polynesian revitalization, some revival narratives have tended to obscure Micronesian continuity. A 2018 pan-Pacific poll asked, "Are Polynesians culturally appropriating Micronesian wayfinding?"—underscoring tensions that persist even among historically colonized peoples (Aisek, 2018). For many Micronesian families and lineage teachers, the issue is not that knowledge was shared but how stories are remembered and represented. Critical reviews such as Defngin's (2022) response to Jeff Evans's *Reawakened* highlight recurring omissions of Micronesian perspectives in mainstream accounts of Pacific wayfinding, a pattern scholars describe as Polycentrism (Battiste, 2013; Chilisa, 2012; Smith, 2012).

Micronesian scholar-wayfinders further stress that knowledge sharing must remain grounded in relational ethics. As Haleyalur (2022) notes, while Piailug taught elements of the Weriyeng system to Hawaiians and other Pacific voyagers, the deeper layers of *etak*, ritual medicine, and sacred chants were never disclosed. Teaching outsiders, he explains, is permissible only within frameworks of humility, reciprocity, and respect—not through extraction or entitlement. Knowledge is a living network among teacher, apprentice, ancestors, and sea—a

worldview that affirms Indigenous rights to silence, secrecy, and sacred protection (Meyer, 2008; Wilson, 2008).

In a 2023 editorial, Haleyalur expanded this critique, questioning the Polynesian Voyaging Society's use of Piailug's name and its role in hosting ceremonies without broader Micronesian authority. The Polynesian Voyaging Society (PVS), founded in 1973 and best known for constructing and stewarding Hōkūleʻa, had originally recruited Piailug in the absence of a local Polynesian wayfinding teacher. Haleyalur noted that subsequent ceremonies associated with PVS—such as the 2011 Hawaiʻi initiation of Peʻia Patai and the 2018 Aotearoa initiation of Piripi Smith and Stanley Conrad (Brown, 2019; Lagaso, 2019)—were conducted without the involvement of recognized Weriyeng or Fanur lineage masters. For Micronesian wayfinders, *pwo* is neither symbolic nor adaptable; it is a sacred initiation that can only be performed by authorized lineage holders under specific ritual conditions. Replicating its form without the appropriate lineage, chants, medicines, or permissions is therefore understood as a breach of ancestral covenants.

Taken together, these critiques do not diminish the accomplishments of Hawaiian or Polynesian voyaging movements; rather, they call for a more reflexive and relational approach to decolonization—one that honors Pacific interdependence without collapsing distinct genealogies of knowledge. True decolonial practice requires humility, accuracy, and ethical reciprocity: recognizing the limits of what was shared, naming lineages correctly, addressing gendered inequities, and restoring dialogue among Pacific communities. Both Hawaiian and Micronesian wayfinders ultimately seek a future grounded in relational stewardship. Re-centering Micronesian authority while celebrating Hawaiian innovation fulfills Piailug's intention—that the ocean connects, rather than divides, its peoples. In this spirit, the decolonization of wayfinding

knowledge becomes a living process of ethical alignment, where revival, respect, and responsibility guide the course toward a genuinely interconnected Oceania.

Leadership and Pedagogy Perspective

From a Leadership and Pedagogy (LP) perspective, wayfinding is fundamentally a system for cultivating ethical leaders. Teaching wayfinding is not limited to technical instruction; it is a process of forming individuals who can act with discernment, humility, and relational responsibility within a living cultural system. Leadership emerges not through formal titles but through demonstrated service, emotional discipline, and the ability to hold collective well-being at the center of decision-making (Buente et al., 2020; Spillane, 2006). In both Hawaiian and Micronesian contexts, the wayfinder's authority derives from *kuleana*—the ethical obligations one accepts toward the canoe, the crew, the environment, and the ancestors.

Ethical pedagogy therefore requires more than transmitting knowledge. It asks mentors to model the values underpinning wayfinding: humility, reciprocity, restraint, and care. Apprentices are trained to cultivate these qualities through embodied practice—night watches, environmental observation, preparation of sails and stones, listening to elders, and participating in ceremonial life. These relational practices teach students to perceive leadership not as personal attainment but as communal responsibility. In this sense, pedagogical ethics become inseparable from leadership ethics: one cannot guide a canoe without simultaneously learning how to guide a community.

This relational model also highlights the risks of pedagogical imbalance. Ethical lapses—such as withholding mentorship, claiming authority without lineage, misrepresenting training histories, or elevating individual prestige above collective responsibility—can fracture trust and disrupt intergenerational transmission. When institutions, media, or public narratives disproportionately valorize certain individuals, the distributed nature of wayfinding leadership can

be obscured. Such distortions can marginalize women, younger practitioners, or wayfinders from less-visible communities, weakening the relational fabric that sustains voyaging traditions.

From the view of Succession Theory, leadership formation must be accompanied by thoughtful planning for continuity. Senior wayfinders carry the responsibility of identifying, preparing, and empowering the next generation of wayfinders—those who embody both technical competence and cultural grounding (Fink, 2010; Santora et al., 2015). This succession is neither automatic nor hierarchical; it is relational, requiring long-term mentorship and community recognition. In Micronesian traditions, ceremonies such as *pwo* formalize this responsibility, affirming the moral and genealogical commitments expected of new wayfinders. In Hawaiian contexts, succession unfolds through mentorship networks, crew hierarchies, and community affirmation of a wayfinder's readiness.

Succession also functions as a mechanism of cultural protection. By cultivating successors who are accountable to lineage, mentors prevent knowledge from becoming stalled, diluted, or redirected toward external agendas. This is especially important in revival-era contexts where institutional structures, media visibility, and global tourism can unintentionally elevate spectacle over substance. Ethical succession ensures that knowledge remains rooted in living relationships rather than being frozen in academic archives or commodified as cultural capital.

Finally, ethical leadership in contemporary wayfinding requires navigating the realities of global collaboration, institutional partnerships, and digital pedagogy. As voyaging enters classrooms, documentaries, simulation labs, and international networks, leaders must ensure that teaching materials and public narratives honor lineage, represent diversity accurately, and protect community-held knowledge. Responsible leadership involves consultation, consent, and

transparency—ensuring that educational practices align with Indigenous frameworks of relational accountability.

Taken together, the Leadership and Pedagogy perspective situates wayfinding as both a technology and a moral tradition: a system that cultivates leaders capable of navigating environmental uncertainty, social complexity, and ethical responsibility. It is through this relational and distributed pedagogy that wayfinding continues to generate not only competent wayfinders but community-centered leaders grounded in humility, reciprocity, and collective care.

Adaptation and Contemporary Responsibility

Reconstructing and practicing Hawaiian wayfinding carries profound ethical responsibilities shaped by historical disruption, cultural sovereignty, and inter-island knowledge exchange. These ethical dimensions are not peripheral but central to revival work, influencing how knowledge is interpreted, shared, and embodied. Within this study, ethical reflection emerges across three interconnected areas: fidelity to historical sources, relational accountability, and responsibility in application and pedagogy—each grounded in Indigenous frameworks of reciprocity and respect.

From a Decolonization and Knowledge Revival (DKR) perspective, ethical engagement begins with fidelity to source materials and their cultural contexts. Hawaiian wayfinding knowledge—documented in 19th- and early-20th-century Hawaiian-language newspapers, chants, and oral testimonies—was fractured by colonial suppression of language and education. These sources often encode meaning through metaphor, poetics, and ceremony, requiring careful and culturally grounded interpretation to avoid mistranslation or distortion (Osorio, 2002; Walker, 2012). Reconstructing wayfinding from such fragments demands methodological transparency:

practitioners must disclose interpretive choices, consult with cultural authorities, and acknowledge Indigenous authorship (Chilisa, 2012; Smith, 2021).

Misrepresentation of Hawaiian or Micronesian traditions risks eroding cultural integrity and perpetuating epistemic harm. Ethical stewardship therefore requires humility—recognizing that historical sources are not neutral data but living remnants of worldview and lineage. The task is not merely to recover information about wayfinding but to revive the values, relationships, and ethics that animate its practice. This orientation affirms Indigenous epistemic authority and guards against the commodification or romanticization of knowledge as cultural capital (Battiste, 2013; Meyer, 2008).

From an Indigenous Knowledge Systems (IKS) lens, ethics is inseparable from *pilina*—the relationships among people, place, ancestors, and non-human kin. Wayfinding knowledge is lived through reciprocal engagement with winds, stars, waves, and marine life. To navigate ethically is to maintain balance across human and environmental domains. Learning, therefore, carries responsibilities not only to teachers and ancestors but to the ecosystems and akua (deities) that make voyaging possible. Apprenticeship models embody these principles: instruction occurs through direct observation, service, and disciplined practice, grounded in respect, care, and humility (Finney, 1979; 1994; 2003; Meyer, 2003).

This relational ethic extends into broader Pacific networks. As highlighted by recent reflections from Micronesian wayfinders, cross-cultural revitalization raises ethical questions regarding attribution, lineage, and authority. Haleyalur (2022, 2023b), for instance, cautions against assuming that the sharing of knowledge implies its full transfer, emphasizing that sacred components—such as *etak* reference systems and *pwo* initiations—cannot be replicated outside appropriate lineage and ritual contexts. His testimony foregrounds a core Indigenous principle:

knowledge is not owned but entrusted, and teaching or performing it without consent breaches sacred relational obligations.

Acknowledging these distinctions is essential for ethical decolonization. It prevents the homogenizing pull of pan-Pacific narratives and counters the hierarchical imbalance created when Micronesian knowledge is interpreted or represented through Polynesian institutions rather than through Micronesian authority structures themselves. Relational accountability requires dialogue, reciprocity, and humility—sharing credit, returning acknowledgment, and restoring balance between source communities. Collaborative voyages, joint ceremonial planning, and shared authorship in scholarship offer ways Hawaiian revivalists can honor these relationships while avoiding inadvertent appropriation.

From a Leadership and Pedagogy (LP) perspective, ethical responsibility also encompasses how knowledge is taught, transmitted, and embodied. Distributed leadership within Hawaiian wayfinding—where decision-making is collaborative, situational, and grounded in reciprocity—offers a model for ethical pedagogy (Santora et al., 2015; Spillane, 2006). Apprentices learn not only to read the environment but to cultivate emotional discipline, humility, and collective responsibility. Ethical instruction, therefore, involves character formation alongside cognitive training.

Revival efforts must also reckon with the increasing public visibility of voyaging. The growing demand for "traditional wayfinding experiences" risks detaching voyaging from its cultural, spiritual, and genealogical foundations. Ethical pedagogy ensures that students understand wayfinding as a worldview rooted in *aloha ʻāina* (love of land), *kuleana* (responsibility), and *mālama* (care). In both Hawaiian and Micronesian traditions, to navigate well is to live rightly; technical competence is inseparable from moral and relational integrity.

Ethical wayfinding must also adapt to contemporary realities—global collaboration, digital technologies, and institutional education—while preserving Indigenous control over knowledge. As Meyer (2008) and Wilson (2008) emphasize, Indigenous knowledge adapts dynamically, but adaptation must remain anchored in cultural values. When wayfinding practices are digitized, simulated, or taught in Western institutions, consent and consultation with knowledge holders become essential. Decisions about data sharing, curricular content, and representational language must be co-created with Indigenous practitioners.

Consent-based knowledge governance ensures that revival benefits the communities from which knowledge originates. This includes respecting intellectual property rights, protecting cultural privacy, and upholding *kapu* (sacred restrictions). The Weriyeng school's ritual boundaries around chants and ceremony, and Hawaiian protocols surrounding canoe preparation, star invocation, and wayfinding prayer, exemplify this ethic. Consent thus forms the connective tissue linking cultural integrity, community trust, and intergenerational continuity.

Synthesis: Ethical Stewardship as Wayfinding

Across the three analytical perspectives examined in this study—Indigenous Knowledge Systems, Decolonization and Knowledge Revival, and Leadership & Pedagogy—three interwoven ethical principles emerge as foundational to contemporary Hawaiian wayfinding. First, relational accountability affirms that knowledge exists within networks of connection among people, ancestors, land, ocean, winds, and stars. Wayfinding knowledge is generated and validated through these relationships; ethical practice requires care for the social and ecological systems that make wayfinding possible. Second, cultural sovereignty and fidelity ensure that revival and innovation honor Indigenous epistemologies, community authority, and lineage structures. Ethical revitalization demands fidelity not only to conceptual content but also to the ceremonial,

genealogical, and relational frameworks through which knowledge has been transmitted. Third, responsibility in pedagogy and leadership embeds ethical and cultural integrity into every stage of teaching, mentorship, and succession. Wayfinders are shaped not just by techniques but by values—humility, kuleana, discernment, and collective well-being.

Taken together, these principles reveal that ethical stewardship in Hawaiian wayfinding is not an adjunct to practice—it is inseparable from the practice itself. Wayfinding is an ethical orientation: a disciplined attentiveness to relationships, responsibilities, and the consequences of one's decisions. The reconstruction, teaching, and application of wayfinding knowledge must therefore contribute to community resilience, ecological balance, and intergenerational continuity. In this sense, Hawaiian wayfinding models an ethics of wayfinding—to steer with awareness, humility, attentiveness, and care. It reminds practitioners that decolonization is not fulfilled simply when knowledge is revived, recorded, or institutionalized, but when it is lived responsibly and relationally, guided by respect, reciprocity, and aloha across the oceanic world.

If the ethical concerns surrounding reconstruction and application remain unaddressed, the consequences extend well beyond scholarly misrepresentation. Neglect risks reproducing extractive patterns, alienating communities from their own ancestral knowledge, and weakening the trust essential for intergenerational transmission. Such gaps would not constitute merely academic oversights; they would echo and extend colonial disruptions—damaging relationships, undermining cultural authority, and diminishing the living legacy of Hawaiian epistemology. Ethical stewardship, therefore, is not optional but essential: it is the compass by which Hawaiian wayfinding can move forward with integrity, accountability, and relational balance.

Policy Recommendations

The study of Hawaiian wayfinding, viewed through the lenses of Indigenous Knowledge Systems (IKS), Decolonization and Knowledge Revival (DKR), and Leadership & Pedagogy (LP), demonstrates how wayfinding operates as a multidimensional framework that integrates cultural, cognitive, and ethical dimensions. These frameworks reveal how Hawaiian wayfinding—rooted in relational epistemology, environmental attunement, and intergenerational mentorship—offers not only a model for cultural resilience but also practical guidance for educational, leadership, and policy design in Hawai‘i and across the Pacific. Knowledge is relational, contextually grounded, and transmitted intergenerationally through mentorship, apprenticeship, and experiential learning. Wayfinding mental frameworks function as both practical and cognitive tools, transforming fragmented historical references into functional, living systems. The following policy recommendations aim to sustain, formalize, and ethically scale Hawaiian wayfinding as both a cultural and educational practice—while supporting the broader regional networks that contribute to its vitality. These recommendations help ensure its continued relevance for contemporary and future generations.

Support for Indigenous Knowledge Systems in Education and Community Programs

Policies must recognize Hawaiian wayfinding as a sophisticated Indigenous Knowledge System integrating astronomy, oceanography, meteorology, ecology, relational epistemology, and intergenerational knowledge transmission. Institutional and community initiatives should expand opportunities for experiential learning, curriculum integration, and mentorship while addressing structural constraints that have historically limited their adoption.

Educational pathways for wayfinding now span Hawai‘i’s K–12 institutions, community colleges, universities, and cultural organizations. Within the University of Hawai‘i system, the

University of Hawai‘i at Mānoa and several community colleges—including Honolulu CC, Leeward CC, Windward CC, and Kapi‘olani CC—have offered courses in Hawaiian wayfinding and Polynesian voyaging since the 1990s (co-designed by Thompson and Dr. Lilikalā Kame‘eleihiwa), with Kaua‘i CC now providing the most formal program through its Polynesian Voyaging Academic Subject Certificate (KCC, 2025). Brigham Young University–Hawai‘i also continues to offer voyaging coursework through its training canoe, *Iosepa* (Aikau, 2012). Wayfinding is likewise integrated into K–12 education. Punahou School, Kamehameha Schools, and Hālau Kū Mana Public Charter School (all on O‘ahu) include voyaging and seamanship in their curricula as part of culturally grounded, place-based learning (Kamehameha Schools, n.d.; Punahou School, n.d.). Public school students lacking such programs can access canoe learning through community-based organizations such as Kānehūnāmoku Voyaging Academy.

Despite these advances, curricular integration remains constrained by standardized testing pressures, curriculum overcrowding, and limited teacher preparation in Indigenous epistemologies (Chinn, 2011; Demmert & Towner, 2003). Addressing these barriers requires Department of Education–endorsed teacher training, collaborative curriculum development with cultural practitioners, and flexible pathways that allow Indigenous knowledge systems to complement academic standards. Funding and formalizing apprenticeship programs with master wayfinders is essential for intergenerational knowledge transfer. Apprenticeship is resource-intensive and dependent on safety infrastructure, experienced mentors, and sustained financial support (Finney, 1979; 1994; 2003; Kyselka, 1987). Stable appropriations, philanthropic partnerships, and interagency cooperation are needed to avoid the volatility of grant-based cycles. Developing secure, community-governed digital repositories for Hawaiian-language sources, oral histories, and wayfinding materials is also critical. Digitization, however, raises concerns about protecting

culturally restricted knowledge, intellectual property, and Indigenous data sovereignty (Kukutai & Taylor, 2016; Smith, 2021). Governance models therefore must be led by cultural practitioners to ensure that access protocols uphold community authority and cultural integrity.

Support for Decolonization and Knowledge Revival

Decolonization requires structural and epistemological realignment that restores Indigenous authority over cultural knowledge systems. Reviving Hawaiian wayfinding necessitates investment in archival translation, historical reconstruction, and the ethical reintegration of fragmented knowledge (Battiste, 2013; Walker, 2012). Policies must support systematic translation, digitization, and analysis of Hawaiian-language sources, and catalyze community-driven reconstruction of ancestral knowledge.

Today, Hawai‘i holds unprecedented access to its own intellectual history. Through digital repositories such as Ulukau, Papakilo, and other emerging databases, Hawaiian-language newspapers, mele, mo‘olelo, and ethnographic records—once scattered, restricted, or difficult to access—are now widely available. This growing digital corpus provides the raw material needed to contextualize celestial terminology, reconstruct ecological observations, and reassemble the epistemic frameworks that sustained Hawaiian wayfinding.

At the same time, contemporary computational tools—astronomical simulators, GIS platforms, climate models, corpus linguistics software, and digital visualization technologies—offer new opportunities to model historical skies, track environmental change, and identify patterns across extensive Hawaiian-language archives. To fully benefit from these resources, policy must ensure that Native Hawaiian communities receive training in digital literacy, data analytics, archival research, and Indigenous data governance, so that digital abundance strengthens rather than replicates older patterns of extraction. Effective decolonization policy must therefore invest

in translation and archival recovery, expand Indigenous-governed digital infrastructure, build community capacity to use digital tools ethically and competently, and support culturally grounded research methodologies that integrate digital innovation with land-based and relational knowledge systems. By combining archival revitalization with digital and computational capacity, Hawai‘i can responsibly harness unprecedented access to historical materials while ensuring that Indigenous communities—not external institutions—guide how cultural knowledge is interpreted, stewarded, and applied.

Strengthening Pacific Knowledge Networks

Wayfinding revitalization increasingly unfolds within a landscape shaped by both large institutional partnerships and smaller lineage-based voyaging schools, each contributing differently to cultural resilience. At the institutional scale, the ‘Aha Moananuiākea Pacific Consortium—a partnership led by Kamehameha Schools, the Polynesian Voyaging Society, Bishop Museum, and the University of Hawai‘i System—mobilizes substantial educational and cultural resources to foster Pacific-wide exchanges, leadership development, and Indigenous research collaborations (Kamehameha Schools, 2025). Anchored at the Ka‘iwakīloumoku Pacific Indigenous Institute on the Kamehameha Schools Kāpalama campus, the consortium convenes cultural practitioners, scholars, and students from across the Pacific to engage in ceremonial, environmental, and educational initiatives grounded in Hawaiian and broader Oceanic worldviews. Alongside these well-resourced networks, lineage-based voyaging schools continue to operate with far fewer financial and administrative supports despite their central role in sustaining ancestral practices. The Ancestral Voyaging Schools Alliance (AVSA)—established in 2023 with support from the Pacific Traditions Society—links four such schools: Hōlau Vaka Taumako Association (Taumako, Solomon Islands), Pasana Group (Massim, Papua New Guinea), Drua Sailing

Experience (Lau Islands, Fiji), and Inowon Voyaging School (Polowat, FSM). These longstanding lineage centers collaborate on canoe-building, intergenerational teaching, and cultural governance (M. George, personal communication, November 25, 2025).

Parallel to AVSA, the rapidly expanding Pasifiki Voyagers Alliance (PVA) unites voyaging organizations and cultural institutions from across Oceania—including groups from Aotearoa, Tahiti, the Cook Islands, the Torres Strait, Yap, Tonga, Samoa, and Fiji. Coordinated by the Uto ni Yalo Trust, the alliance supports canoe construction, training exchanges, environmental stewardship, and the restoration of ancestral maritime routes (H. Raigetal, personal communication, September 6, 2025).

While these regional networks represent some of the most diverse collaborations in contemporary Pacific voyaging, their growth highlights the need for equitable governance structures, sustainable funding, coordinated communication systems, and culturally grounded protocols—particularly to ensure that smaller or lineage-based schools are not overshadowed by larger institutions. Policies that strengthen shared governance, support reciprocal training exchanges, and protect Indigenous cultural authority can help ensure that revitalization across the Pacific remains ethical, inclusive, and Indigenous-led.

Enhancing Leadership and Pedagogical Structures

Wayfinding offers a paradigm of distributed leadership, collective responsibility, and character-based pedagogy. Embedding these principles in educational and organizational systems cultivates ethical decision-making grounded in humility, relationality, and environmental awareness (Buente et al., 2020; Spillane, 2006). Succession planning—modeled on traditional wayfinding mentorship—should be institutionalized through apprenticeship pathways that prepare

new leaders while preserving community validation and cultural lineage (Fink, 2010; Santora et al., 2015).

Strengthening leadership in Hawaiian wayfinding also requires recognizing that Hawai‘i already possesses Indigenous systems of initiation, knowledge protection, and leadership succession. Hālau hula, for example, rely on the ‘ūniki process to mark a student’s transition into teaching or higher responsibility. The process requires years of embodied practice, deep pilina with one’s kumu, mastery of protocol, and genealogically rooted knowledge (Kaeppler, 2004; Kanahele, 2011; Stillman, 1998). Similarly, pā lua (Hawaiian martial arts) employ ranked, lineage-based systems in which students advance through rigorous physical, ethical, and ceremonial training under an initiated ‘ōlohe (M. Neal, 2012; Takamine, 2005). In kākau uhi, apprenticeship entails years of observation, service, and supervised practice, with formal recognition granted only when a practitioner demonstrates technical precision, cultural grounding, and relational maturity (Allen, 2006; Trask, 2000).

These Hawaiian traditions offer culturally grounded precedents for transmitting restricted knowledge, preparing successors, and maintaining integrity within lineage-based systems. Drawing upon these internal models can guide the development of Hawaiian-specific protocols for wayfinding apprenticeship and leadership recognition, ensuring that ceremonial and pedagogical structures emerge authentically from Hawaiian epistemologies rather than borrowing externally defined forms.

Environmental and Cultural Stewardship Integration

Wayfinding is inseparable from ecological knowledge, environmental ethics, and long-term stewardship of ocean systems. Hawaiian wayfinding depends on detailed observations of winds, currents, marine life, cloud formations, seasonal shifts, and celestial cycles—observations

that form a highly sensitive system for detecting environmental change. As climate instability accelerates, Indigenous knowledge systems such as wayfinding offer powerful tools for climate mitigation, adaptation, and ecological forecasting (Aipa et al., 2020; Kittinger et al., 2014; Pascua et al., 2017).

Community-led environmental monitoring programs—tracking swell transformations, migratory seabirds, ENSO-related anomalies, coral bleaching, and shifting trade winds—should be supported through policy frameworks that recognize Indigenous observation as scientific data in its own right. Integrating Western and Indigenous methodologies strengthens predictive capacity while reinforcing resource management rooted in long-term ecological relationships rather than short-term extraction (Brewer & Moon, 2015; Vaughan & Vitousek, 2013).

Interagency partnerships among cultural practitioners, earth scientists, climate researchers, and policymakers are essential for aligning management decisions with Indigenous epistemologies and ecological realities. Such collaboration requires governance structures that uphold Indigenous data sovereignty, community consent, and context-specific protocols for how sensitive ecological knowledge is used in environmental planning.

Indigenous knowledge also contributes directly to climate-change mitigation. Voyaging communities across Hawai‘i, Fiji, Aotearoa, and the Federated States of Micronesia show that wayfinding is a practical climate strategy: canoe voyages produce environmental data, strengthen youth stewardship, reinforce food sovereignty networks, and revitalize inter-island cooperation. Traditional voyaging routes historically facilitated exchanges that supported regional resilience (Genz, 2011; 2016; Howe, 2006). Policies that support canoe-based research, Indigenous climate monitoring, and reciprocal voyaging exchanges reinforce these systems while building regional adaptive capacity.

At the same time, Indigenous stewardship faces profound threats—particularly from the expansion of deep-sea mining in the Pacific. Mining activities in the Clarion–Clipperton Zone and within national EEZs threaten deep-ocean ecosystems that shape swell patterns, pelagic species, and biological indicators central to traditional wayfinding. Sediment plumes, disruptions to ocean currents, and impacts on marine food webs could alter the environmental relationships that guide navigation and ecological forecasting (Levin et al., 2020; Miller et al., 2018). From an Indigenous standpoint, deep-sea mining represents not only ecological risk but a continuation of extractive colonial economies that undermine Indigenous authority over ocean knowledge and kinship networks. Policy interventions should include precautionary moratoria, recognition of Indigenous jurisdiction over ancestral sea routes, mandatory cultural impact assessments, and legal protections for sacred seascapes and ecological corridors tied to voyaging traditions.

A culturally anchored ocean governance framework must therefore recognize the relational responsibilities embedded in wayfinding. Supporting community-based fisheries management, youth kilo (systematic observation) programs, and the integration of cultural practitioners into climate task forces strengthens an ethic of stewardship grounded in reciprocity and ecological intimacy. When policy reflects the epistemological commitments of wayfinding—observation, relational accountability, restraint, and care—environmental governance becomes culturally grounded, scientifically robust, and socially just.

In this sense, wayfinding offers more than a cultural practice: it is a model for climate resilience and environmental responsibility. Aligning environmental policy with Indigenous knowledge systems enables Hawai‘i and the broader Pacific to strengthen ecological stewardship while ensuring that ancestral wisdom continues to guide present actions and future planning. When stewardship is grounded in the ethics of wayfinding, climate adaptation becomes an

intergenerational project guided by humility, balance, and deep relational commitment to the oceanic world.

Long-Term Policy Implementation Considerations

Sustaining Hawaiian wayfinding requires coordinated investments in funding, community engagement, culturally responsive evaluation metrics, and protections for sacred knowledge. Effective implementation depends on inclusive governance structures, stable resource streams, and long-term partnerships with Indigenous communities. Policies must also uphold cultural sensitivity by protecting intellectual property, ceremonial knowledge, and lineage-based authority (Chilisa, 2012; Meyer, 2008). When implementation is rooted in Indigenous epistemologies and community authority, Hawaiian wayfinding becomes not merely a heritage practice but an evolving system of education, leadership, and environmental governance.

Summary

This article examines Hawaiian wayfinding as a living, multidimensional knowledge system situated at the intersection of culture, history, environment, and leadership. It traces how colonial suppression, linguistic loss, and Western educational paradigms fragmented the transmission of wayfinding knowledge that once underpinned Hawaiian governance, spirituality, and social cohesion. Yet beneath these disruptions, the epistemological depth of Hawaiian nature-based wayfinding endures—an integrated framework of observation, reflection, and practice that encodes sophisticated understandings of the ocean, stars, winds, and living world. Wayfinding thus emerges not merely as a means of movement across the Pacific but as a philosophy of perception, decision-making, and relational responsibility. Wayfinding functions simultaneously as a technical art, an ethical practice, and a cultural framework for leadership. It bridges archival analysis with ethnographic insight to show how Hawaiian wayfinding—when interpreted through modern

theoretical frameworks—continues to offer models for leadership, pedagogy, and knowledge governance that remain locally grounded yet globally resonant.

Three interrelated perspectives are employed: Indigenous Knowledge Systems (IKS), Decolonization and Knowledge Revival (DKR), and Leadership & Pedagogy (LP). Each lens provides a distinct but complementary vantage point on how Hawaiian wayfinding operates as an epistemological, ethical, and pedagogical system. From an IKS perspective, wayfinding demonstrates that knowledge is embodied, relational, and intergenerational. Through frameworks such as the star compass, wayfinders integrate celestial, oceanographic, and ecological observations into cognitive, spiritual, and mnemonic systems. Learning occurs through mentorship, apprenticeship, and direct observation rather than through detached textual study—affirming that knowledge acquisition is a living engagement with environment and community.

From a DKR perspective, the paper reveals how colonial disruption fractured Hawaiian wayfinding education. The banning of Hawaiian-language schooling, missionary reinterpretation of oral traditions, and the decline of canoe voyaging collectively interrupted the transmission of specialized knowledge. Through deliberate acts of recovery—translation, oral history work, and practice-based learning—Hawaiian practitioners have reconstructed these systems with remarkable fidelity and creativity. Decolonization here becomes an ongoing praxis: restoring intellectual authority, rebuilding ethical relations, and affirming Indigenous epistemologies within contemporary academic and institutional structures.

From an LP perspective, wayfinding emerges as a model for distributed and relational leadership. Decision-making aboard a voyaging canoe is fluid, collaborative, and grounded in the collective attentiveness of the crew. Mentorship and succession occur through sustained apprenticeship, with responsibility expanding gradually and relationally. These pedagogical

dynamics reflect modern leadership principles—such as adaptive management, situational awareness, and servant leadership—but are rooted in distinctly Hawaiian values of aloha ʻāina, kuleana, and pilina.

Across these frameworks, three primary themes emerge: holistic integration of knowledge, adaptive and dynamic epistemology, and mentorship as leadership succession. Holistic integration demonstrates how wayfinding unites astronomical, ecological, and social data within a single interpretive framework. Adaptive and dynamic epistemology highlights how wayfinding evolves in response to environmental change and historical circumstance—exemplified by Nainoa Thompson's adaptation of Carolinian models into the Hawaiian star compass. Mentorship and succession show that continuity depends on relational trust, humility, and responsibility, with ceremonies such as pwo affirming accountability to community, ancestors, and the natural world.

Ethical reflection threads through every dimension of this study. The reconstruction of Hawaiian wayfinding raises essential questions: How can practices remain faithful to historical sources while serving contemporary needs? How can knowledge be widely taught without compromising cultural integrity? Three ethical principles guide these reflections: relational accountability to ancestors, ecosystems, and communities; cultural sovereignty and fidelity to Hawaiian epistemologies; and responsibility in pedagogy and leadership. These principles position ethical stewardship as the essence of Hawaiian wayfinding. Without such grounding, revival efforts risk unintentionally reproducing extractive dynamics that undermine Indigenous authority.

The policy recommendations translate these theoretical insights into practical strategies for sustaining Hawaiian wayfinding as both heritage and applied science. They call for curricular integration across K–12 and higher education; mentorship-based training programs modeled on traditional apprenticeship; community-led archives and digital repositories that safeguard

Hawaiian-language sources; and cross-Pacific partnerships rooted in reciprocity and Indigenous governance. These measures reframe Hawaiian wayfinding as an advanced environmental literacy system that cultivates critical thinking, ecological awareness, and relational ethics.

Indigenous knowledge systems are not peripheral to global knowledge but integral to its renewal. Hawaiian wayfinding demonstrates that empirical observation, analysis, and prediction can coexist with spirituality, ethics, and relational awareness. It exemplifies a decolonial form of science—one measured not only by instruments but by relationships. The implications extend beyond wayfinding. The relational learning, distributed leadership, and ethical stewardship at the heart of Hawaiian wayfinding offer models for transforming education, leadership, and environmental governance. Wayfinding provides a template for re-centering modern systems around responsibility, adaptability, and collective well-being.

In conclusion, Hawaiian wayfinding stands as a testament to the resilience, adaptability, and epistemic sophistication of Indigenous knowledge systems. It bridges ancestral insight and contemporary relevance, offering pathways for cultural continuity, ethical leadership, and sustainability. The star compass—both cognitive model and moral metaphor—embodies the central insight of this paper: wayfinding is not merely travel through space but an ongoing act of alignment between person and place, knowledge and responsibility, past and future. Grounded in aloha ʻāina, kuleana, and pilina, Hawaiian wayfinding offers a model for reorienting education, governance, and research toward relational intelligence and ethical stewardship. The future of Hawaiian wayfinding—and Indigenous science more broadly—depends on sustained commitment to community, language, and land, guiding future generations across the physical and intellectual oceans of their time.

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