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TE KAHU HURUHURU O KOHIKOHI

Weaving a Kaupapa Māori methodology for climate change research

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Abstract

This article introduces Te Kahu Huruhuru o Kohikohi, a Kaupapa Māori methodology developed to address the need for Indigenous perspectives in climate change research. Climate change policy has traditionally relied on quantitative methods, often neglecting Māori worldviews and holistic environmental understandings. In Aotearoa New Zealand, Māori values, knowledge and practices are often overlooked in climate planning, despite their role as kaitiaki of the land. This methodology bridges Māori ways of knowing with Western research, drawing on whakapapa and incorporating Kaupapa Māori and bricolage to create an adaptable, multiperspective approach. The kahu huruhuru metaphor represents the diverse experiences of Kāi Tahu ki Murihiku and other Māori communities in responding to climate change. By honouring Māori epistemologies and engaging in community dialogue, the methodology offers a decolonising approach for climate change adaptation, combining Western and Indigenous perspectives for meaningful solutions.

Keywords

bricoleur, climate change, Indigenous, Kaupapa Māori, methodology

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Introduction

There is a call within global climate change research, policy and planning literature for stronger inclusion of Indigenous communities' experiences and responses to climate change (Kenney & Phibbs, 2021). In Aotearoa New Zealand, this includes approaches that recognise the intergenerational, cultural and locale-specific nature of mātauraka Māori and tikaka (Kaiser & Kenney, 2022). Key international plans, policies and agreements, such as the Paris Agreement and the 2020–2030 United Nations Secretariat Climate Action Plan, address Indigenous peoples as generic, providing one-size-fits-all frameworks and principles. In Aotearoa, national plans, polices and legislation (e.g., the Zero Carbon Act, First National Adaptation Plan) are built from a top-down approach. Often policy consultation with Māori happens late in the drafting process, if it occurs at all (Carter, 2018; Kenney & Phibbs, 2020; Matunga, 2013) and te ao Māori are flattened into simplified and generic narratives. In response, Indigenous peoples are increasingly developing climate change plans and strategies for governments to consider (Kaiser & Kenney, 2022). Yet, research that applies Indigenous methodologies to exploring Indigenous peoples' views, experiences and responses regarding climate change is limited (Awatere et al., 2021; H. A. Smith & Sharp, 2012). Research on climate change impacts has largely been quantitative in nature, a format that takata whenua have highlighted as generic and ill-fitting for the diverse and holistic worldviews within te ao Māori (King et al., 2010). Bespoke work by and for Indigenous peoples that is culturally and locale specific is required to understand the diverse experiences and approaches for responding to climate change.

Background: Indigenous responses to climate change

Government and institutional recognition of Indigenous autonomy and rights to sovereignty over traditional lands and tribal environments remains highly problematic within global, national and local policy spheres (Ramos-Castillo et al., 2017). While this relationship is enshrined in Aotearoa under te Tiriti o Waitangi, the foundational treaty between the British Crown and Māori), claims have been lodged regarding breaches of te Tiriti in relation to climate change issues (Iorns, 2020). The history of Treaty breaches suggests that further legislated recognition of the kaitiakitaka of takata whenua in responding to climate change within their takiwā is urgently required.

Research, policy and planning literature indicates that climate change is a high priority issue for iwi and hapū across Aotearoa and that a range of actions and mechanisms are being utilised by Māori when responding to climate change impacts (Kaiser & Kenney, 2022). Additionally, climate change issues and related mitigation measures are increasingly being considered in planning documents, and iwi and hapū are beginning to release their own culture-led climate change strategies, which articulate Māori concerns and priorities, as well as adaptation and mitigation measures for their whānau (e.g., Te Rūnanga o Ngāi Tahu, 2018; Te Urunga o Kea: Te Arawa Climate Change Working Group, 2021). However, there continue to be issues with the Aotearoa government and local bodies not taking Māori values, priorities, strategies and aspirations into account when developing policies and plans related to climate change. The Resource Management Act 1991 is an exemplar of legislation that showcases this disregard. The Act states that developers, when preparing plans and policy statements, and considering resource consents, must take into account any relevant planning document recognised by a hapū or iwi authority (e.g., s 61(2A)(a), s 66(2A)(a), s 74(2A) and s 104(1)(c)). Yet, a 2019 study into the use of iwi and hapū management plans (IHMPs) found that some councils had little to no awareness of the existence of these documents, despite the stipulations in the Act (Saunders & Kaiser, 2019).

There are also challenges for the Aotearoa government as well as local and regional councils in giving effect to te ao Māori knowledge, worldviews and practices within climate change mitigation and adaptation (Ministry for the Environment, 2007). The marginalisation of Māori mātauraka, rakatirataka and tikaka has contributed to significant Māori resources being underutilised (Awatere et al., 2021). Hudson and Hughes's (2007) research on the 2004 Rangitikei flooding event in the Manawatū region found that iwi and marae are well positioned to respond to major disasters because of their inherent cultural attributes. Values such as manaakitaka and cultural infrastructure that encompasses sleeping spaces as well as commercial kitchens usefully support large groups of people during disasters. A 2024 Government Inquiry into the Response to the North Island Severe Weather Events of February 2023 acknowledged the important role of iwi and hapū in the disaster readiness, response and recovery system (Department of Internal Affairs, 2024). Yet, the key role that iwi and hapū have in climate change adaptation activities is not clearly

articulated in government response policies and practices, and Māori climate change interventions remain discrete and operational exemplars are limited to a few natural hazard events.

In accordance with the principles of te Tiriti o Waitangi, iwi and hapū are to be treated as partners with the Crown government of Aotearoa. But this statutory relationship has been ignored in the development of key climate change legislation and plans. A study by Parsons and Crease (2024) analysed the submissions of iwi and hapū representative bodies for the Zero Carbon Act 2019 (ZCA). Their research concluded that iwi and hapū were relegated to advisory or stakeholder roles in the submission process, contrary to their status as te Tiriti o Waitangi partners. They argue that the Aotearoa government "remains willing to acknowledge Māori identities and cultural values but unwilling to explicitly acknowledge Māori [rakatirataka] in the ZCA and other legislation" (Parsons & Crease, 2024, p. 10). They further state that government recognition that "Māori retain their [rakatirataka] would raise important legal and political questions about the fundamental nature of settler colonial sovereignty in Aotearoa" (Parsons & Crease, 2024, p. 10).

In 2022, the Aotearoa government published its first National Adaptation Plan for climate change, and Rauora, a parallel Māori-centred framework for climate change adaptation, was also released. Rauora articulates that "the Government will develop adaptation responses in partnership with Māori—including elevating te ao Māori and mātauranga Māori in the adaptation process—and empower Māori in planning for Māori, by Māori" (Ministry for the Environment, 2022, pp. 28–30). Examples of takata whenua experiences of climate change within the plan are drawn primarily from iwi and hapū residing in the North Island of Aotearoa, and only one mention is made of South Island-based iwi or hapū (Ngāi Tahu). How this framework, as well as the plan's relevancy to different iwi and hapū groups across Aotearoa, will be put into practice may be contested. Tribal differences throughout New Zealand suggest it is not possible to develop a singular theoretical framework for understanding takata whenua views and responses to climate change. The significant gap within the literature on climate change responses led by takata whenua is the result of limited government interest in and targeted funding available for research on this topic. However, there is a desire within te ao Māori for research conducted with whānau, hapū and iwi across various takiwā that will contribute to developing scholarship on the impacts and implications of climate change for Māori. The original research discussed in this article contributes to addressing that knowledge gap. A Māori-centred theoretical and methodological framework for investigating climate change issues developed during doctoral research is presented and discussed in this article. The methodology is underscored by Kaupapa Māori theory and a bricolage of qualitative Kaupapa Māori methodologies and methods. It showcases a new framework for the interpretation, analysis and dissemination of culturally and locationally based Māori knowledge.

Whakapapa theoretical framing

To understand how Māori communities conceptualise and respond to the challenges of climate change, the concept of whakapapa must be elucidated. Skerrett White (2003) describes whakapapa, breaking it down into its core elements, whaka (to make) and papa (layers of land):

> Both those phenomena occur when our tohunga, (experts) versed in whakapapa, recite whakapapa. They whakapapa back to the land and then beyond, to the outer (or inner) layers, histories, knowledges, to the core of creation, te ira, te kore (the void). (p. 74)

Māori scholars have used the concept of whakapapa with Western philosophies and epistemologies to create blended theoretical frameworks. For example, the layering of whakapapa is reflected in Kenney's (2009) use of whakapapa with Foucault's (1977/1975) genealogy of knowledge. Knowledge is inscribed through layer upon layer of genealogical interpretation. Roberts (2013) articulates a blended ontological and epistemological framework using whakapapa, mātauraka and wānaka as a body of knowledge used in conjunction with Western zoological and botanical science. Roberts (2013) envisions whakapapa as "the repository of information about the world. Names provide additional information, and when organised (classified) into lineages vertically and horizontally, the narrative(s) then add 'flesh' (knowledge) to the 'bones' of this skeletal framework" (p. 107). Ngawhare (2019) articulates a different metaphorical framing of whakapapa as "windows" where information and practices flows in multiple directions. She determines it is "potentially the tikanga that restores tapu and noa, an extension of balance in how one perceives knowledge, time,

and location through their connection to pūrākau tūpuna, and whenua" (Ngahere, 2019, p. 19).

An additional consideration for the use of whakapapa in theoretical framing is the concept of time. Challenging the linear notion of time used in Western discourse creates the opportunity for Indigenous researchers to account "for multiple ways of conceptualising time across culture" in order to "create more culturally specific ontologies" (Reid et al., 2020, p. 2336). The challenges of, and responses to, climate change occur across multiple temporalities. These are formed by knowledge inherited from ancestors, enabled through temporally responsive strategies of kaitiakitaka for future descendants.

At the heart of whakapapa is intergenerational storytelling. Climate change research is largely dominated by quantitative research and modelling. Yet, storytelling is central to understanding the impacts on people and communities. Analysing Indigenous climate change stories and gaining understanding about effective Indigenous approaches to managing the climate change are best achieved using qualitative research methodologies, which are most appropriate for in-depth examination of culture-based narratives. Indigenous researchers commonly apply qualitative analytical methods to participants' interview talk because they generate contextually nuanced and accurate perceptions of Indigenous knowledges and the value of traditional knowledges in everyday life.

Qualitative Kaupapa Māori methodology

Denzin and Lincoln (2011) describe qualitative research as a creative, interpretive and political process in which researchers "create narratives, braided compositions woven into and through field experiences" (p. 22). Nash et al. (2005) describe qualitative methodologies as multimethod approaches for studying social settings in order to make sense of them and the meanings that people ascribe to things. Qualitative research seeks to "empower individuals to share their stories, hear their voices and minimise the power relationships that often exist between a researcher and the participants in a study" (Creswell & Poth, 2016, p. 45). Moreover, qualitative methodological approaches generally focus on details, narratives, discourses and dialogue to be interpreted (Nash et al., 2005).

Historically, climate change research has drawn heavily on quantitative models and data to determine impacts and projections. Scientists are, however, increasingly recognising the importance of storytelling and narratives for climate change evidence and communication (Moezzi et al., 2017). For Māori communities, intergenerational storytelling is a key component of ontological and epistemological understandings of the world and particularly te ao Māori. This is underscored by tikaka and pūrākau. To understand the impacts of climate change and Māori-led responses, effective research needs to privilege both storytelling and Kaupapa Māori ways of knowing.

Kaupapa Māori theories and methodologies provide space for Māori voices and perspectives, methodologies and analyses, whereby Māori realities are seen as authentic (Cram et al., 2006; G. H. Smith, 1997). This means working outside the binary opposition of Māori and Pākehā and centring te ao Māori conceptualisations of the world (Pihama, 1993; Royal, 2012). Utilising a Kaupapa Māori perspective requires the consideration of "fundamental ethics of traditional Māori society", which are derived from core beliefs (that which is tika), that emphasise "connection with the spiritual realm, the sacredness and vitality of all things, and the significance of reciprocity in human relations" (Henry & Pene, 2001, p. 23). Kaupapa Māori methods of research advocate that the self is placed centrally within the research (Pihama, 2001). L. T. Smith (2013) expands on this notion, stating that Māori have been positioned as the "Other" or have been represented or excluded from various accounts: "Indigenous peoples want to tell our own stories, write our own versions in our own ways, for our own purposes" (p. 28). One such consideration is that until the mid-18th century, Māori society was an oral culture and that

> the telling of tales, the singing of songs, the reciting of genealogy and proverb are still today the main forms of transmitting the people's history. New events become part of the tradition. New waiata are composed to tell history, and old ones adapted. Tradition is not static. There is a constant dialogue between past and the present, and the patterns of thought are still primarily those of an oral culture. (Binney & Chaplin, 1990, p. 28)

Underlining a te ao Māori philosophical approach to understanding and interpreting reality is the notion of whakapapa providing a framework for social relations, relationships to the environment and protocols governing knowledge creation and transferal (Bishop, 1999; Graham, 2007). Iwi, hapū and whānau have developed many unique methodologies that are responsive to the priorities being investigated. Haami (2017) puts forward a Ngāti Ruaka methodology for preserving taonga and waiata. In addition, Cleaver (2020) articulates

a methodology specific to wāhine Kāi Tahu for informing social work research. These diverse Māori methodologies reflect the broader Kaupapa Māori philosophy, which is grounded in a distinctly Māori epistemological framework.

Because Kaupapa Māori methodologies are deeply rooted in whakapapa and tikanga, they stand in contrast to Western philosophical approaches to knowledge. As Nepe (1991) describes:

> Māori knowledge is not to be confused with Pākehā knowledge or general knowledge that has been translated into Māori. Māori knowledge has its origin in a metaphysical base that is distinctly Māori. Kaupapa Māori is esoteric and tūturu Māori. It is knowledge that validates a Māori world view and is not only Māori owned but also Māori controlled. (p. 17)

While the philosophies should not be confused, there are avenues of alignment to help understand the multicultural reality some researchers operate within (Bishop, 2005; Cram et al., 2006; MacFarlane & MacFarlane, 2018), particularly when exploring social science theory in bricolage with Kaupapa Māori theory.

Indigenous bricoleurs

For the purposes of this research, a modified bricolage methodology has been developed through weaving together elements of qualitative and Kaupapa Māori methodologies, and the new methodological framework has been piloted and trialled during this research. Denzin and Lincoln (1999) conceptualised bricolage qualitative inquiry as a critical, multiperspectival, multitheoretical and multimethodological approach to inquiry. The authors point to the French etymological foundation of bricolage referring to a craftsperson (a bricoleur) as a "maker of quilts" who "uses the aesthetic and material tools of his or her craft, developing whatever strategies, methods, and empirical materials are at hand" (Denzin & Lincoln, 1994, p. 4). The anthropological root of bricolage points to ad hoc, improvised or made-up structures to explain the world (Hawkes, 1977). Clarke (1976) explored bricolage as a form of fashion discourse, reassembling meanings and signs, and in doing so, constructing different messages. Hebdige (1979) built on Clarke's concept of bricolage as a discursive form of meaning making, framing his research on subcultures as bricoleurs who juxtapose two apparently incompatible realities, creating an "explosive junction" (p. 361). An interpretive bricolage researcher is one who "understands that research is an interactive process, shaped by his or her own personal history, biography, gender, social class, race and ethnicity, and by those of the people in the setting" (Denzin & Lincoln, 1999, p. 6). Kincheloe and McLaren (2005) advocates that the multidisciplinary nature of bricolage requires "a new level of research consciousness" (p. 316) requiring the researcher to have familiarity with multiple methods but also be cognisant of how the bricolage is influenced by his or her perspective, social location and personal history.

Bricolage research is a political act deliberatively constructed in response to "the history of research that has often demeaned Indigenous knowledge, history and experiences" (Lee, 2009, p. 7). A recognition that "for indigenous researchers to participate in the research academy not only requires a return to our own epistemological frameworks, but the reworking of existing conventional research practices" (Lee, 2009, p. 7). A bricolage approach that embraces "webs of relationships" and a focus on processes, interconnections and associations acts as an appropriate framework for weaving together Kaupapa Māori research and social science research. Adapting the Lévi-Strauss (1966/1962) concept of the "bricoleur" to describe the qualitative researcher, Lee (2009) proposes an "Indigenous bricoleur" with a focus on Māori weaving instead of Denzin and Lincoln's aforementioned French quilts. European theorists ascribe elements of amateur hobbyist notions to their conceptualisation of bricoleur. In many Indigenous cultures globally, weaving is considered a sacred art conducted by skilled practitioners. This Indigenous bricoleur draws on decolonising methodologies (L. T. Smith, 2021), Kaupapa Māori theory and methods, and other qualitative narrative inquiry techniques. Lee uses pūrākau as a bricolage methodology to examine ako in the Aotearoa education systems. Lee (2009) argues that an Indigenous bricolage methodology is not only useful but necessary for an Indigenous researcher:

> in response to the history of research that has often demeaned Indigenous knowledge, history and experiences, to participate in the research academy not only requires a return to our own epistemological frameworks, but the reworking of existing conventional research practices. (p. 7).

Using a culturally bound methodology to examine the impacts and responses to climate change is

necessary to give appropriate visibility to the complex challenges of responding to climate change from a specific tūrakawaewae. For the purposes of this research, the lead author has woven a metaphorical kahu huruhuru.

Whatu: Weaving the foundation of the cloak

Whatu is a name given to the art of finger weft-twining weaving in Māori culture. Traditionally, artists use muka, a silky fibre made from processing harakeke materials (Tamarapa, 2019) for the foundation of woven items. Muka is seen by some weavers as "a concrete way to represent wairua, or life force, but also as powerfully symbolic of the unseen—the spiritual element, that, to Māori, permeates all aspects of life" (Tamarapa, 2019, p. 34). Woven items included practical everyday objects such as kete, fishing nets, mats and clothing (Tamarapa, 2019). Kahu huruhuru, made from harakeke and, most commonly, the feathers of birds, involves the intricate handweaving of aho and whenu of flax and feathers. It is only when all interconnecting parts come together and the here of the kākahu is tied that a korowai is complete and can be worn by the individual (Te Kanawa, 2006).

Tamarapa (2019) describes kākahu as repositories of knowledge. Examiners of a kākahu can glean information about the purpose of the cloak (shelter and warmth, status, spiritual and physical protection), the resources available at the time of the weaving through materials used and stories and designs specific to iwi and hapū that are woven into the cloaks. They are imbued with the mana of the whānau, hapū and iwi of the wearer. In contemporary Māori life, kākahu continue to play key roles adorning wearers at important events such as weddings, graduations and other ceremonies. They are also used at funerals, draped over the coffins of the recently deceased to smooth the passage between life stages (Henare, 2005).

Weaving as an artform is primarily associated with wāhine as the traditional experts. H. Smith (2019) constructed a kāhuku whatuora and embodied practice of weaving to explore stories of Māori wāhine: "Each cloak has been carefully crafted and is imbued with story. It speaks of those things—good and bad, that surround us, and form and inform who we are and how we 'see' the world we live in" (p. 7). A kahu huruhuru exists as a taonga in multiple temporalities. From the gathering of materials and weaving of the garment, through the adorning of ancestors to the careful preservation for future descendants, each adding to the narrative of the item.

To engage in the practice of weaving, artists often used karakia and other cultural practices to enter an optimum state of being (te whare pora) to receive knowledge: "It was believed that the karakia endowed the student with a receptive mind and retentive memory. They would become possessed with quick understanding and a thirst for deeper knowledge. Initiated weavers became dedicated to the pursuit of a complete knowledge of weaving, including spiritual concepts" (Te Papa, n.d.). The authors draw upon a metaphorical te whare pora to create an appropriate and ethical framework for conducting the kahu huruhuru research.

For the purposes of this research, te whare pora is drawn upon as a purely metaphorical concept to describe the preparation and readiness for data collection in the research. Qualitative research involving methods such as interviewing, wānanga and other kōrero methods often require ethical approval. To conduct this research in a culturally safe manner, the lead author drew upon Kennedy and Cram's (2010) work to construct a Kaupapa Māori ethical framework, illustrated by principles of aroha ki te takata, whakawhanaukataka, whakaoraka kōrero, kia tūpato, manaaki ki takata and kia mahaki.

Te kohikohi i ngā hou: Data collection

Kohikohi means "bringing together" in te reo Māori, and ngā hou refers to the feathers of birds. For H. Smith's (2019) research, she interpreted feathers as

> the feathers of our parents, our grandparents, our tūpuna. These feathers tell us who we are, where we are from, where we belong, all of which help us to be well and live well in this world. These storied feathers connect us to our past and project aspirations of our future. (p. 6)

For the purposes of our kahu huruhuru model, ngā hou are also the data or artefacts woven into the kahu huruhuru. These include mātauraka Māori, kōrero, pūrākau, waiata, wānakahikoi, Western planning and policy, scientific models, data and emergency management practices. Kōrero and narratives from interviewees are woven into the kahu huruhuru, creating an overarching pattern, but each participant's story also exists as a separate and unique narrative of personal truth. Therefore, the various commentaries reflect the different realities of participants as well as the collective nature of Māori whānau, rūnaka and iwi narratives. The use of interviews in this research aligns with a broader Māori storytelling tradition, in which knowledge is transmitted through narratives that

hold both individual and collective significance. One such form of narrative is pūrākau, which encapsulates Māori philosophies, worldviews and cultural teachings.

Pūrākau, a traditional form of Māori narrative, contains philosophical thought, epistemological constructs, cultural codes and worldviews that are fundamental to our identity as Māori. These oral narratives should not only be protected but also understood as a pedagogical-based anthology of literature that are still relevant today (Lee, 2009). Murihiku-based pūrākau explore our strong links with Takaroa and Te Ara a Kiwa. These pūrākau demonstrate our strong relationship with the moana culturally and influence participants' views of climate change. While pūrākau offer rich insights into Māori relationships with the environment and perceptions of climate change, other forms of documentation also serve as valuable sources of knowledge. Written records, policy documents and archival materials provide additional layers of context, complementing oral traditions in understanding and addressing contemporary challenges.

Documents, including both mainstream and Indigenous policy, planning and strategy documents, are an important component of the research. In Indigenous cultures, narrative is a means of codifying knowledge and facilitating the process of knowing (Archibald, 2008). According to Ware et al. (2017), "indigenous narratives explain their origins; locate them physically, socially, environmentally, culturally and spiritually; and often transcend time and space" (p. 46). Māori researchers have drawn on narrative analysis for kōrero, pūrākau and other oral forms of communication (Erueti, 2015; Hollis-English, 2012; Lee, 2005, 2009; Ruwhiu, 2008). Written plans and documents are also narratives, transmitting and reifying culture, history and values (Ware et al., 2017). Policies and plans represent a collective process of meaning making and prioritisation. IHMPs and district plans inform us of the values and priorities of the communities they represent. These tools are therefore rich for understanding collective identity, history and decision-making (Saunders, 2017). Analysing and comparing non-Indigenous policies and plans alongside Indigenous documents and kōrero can assist in highlighting useful Indigenous planning narratives and discourses that may be hidden from wider perusal. Indigenous planning theory frames the narrative analysis of these documents. It not only provides a framework for analysing policy and strategy documents but also highlights the narratives that shape community priorities and decision-making. To gain a fuller picture of climate change responses, these narratives must be examined in conjunction with other knowledge sources, including scientific data and models.

Scientific data and models are also ngā hou to be woven into the kahu huruhuru. Data tools and models, such as the NZ SeaRise programme, provide locationally specific combinations of sea level rise and tectonic displacement data for the public. However, quantitative or numerical scientific information often uses complex language or lacks important context, which may render meaning and understanding inaccessible and even irrelevant to some members of the public. Drawing on climate change models and data, along with other forms of ngā hou, can help build a more coherent and contextualised narrative of climate change risk and response. Scientific data offers precise measurements and projections, but without cultural context, it risks being disconnected from the lived experiences of communities. By weaving together multiple strands of knowledge—scientific, policy-based and Indigenous—a more holistic and meaningful understanding of climate change risks and responses can emerge.

Whatu kākahu: Data analysis

There is a deeply embedded tradition of passing down mātauraka Māori and tikaka through kōrero kanohi ki te kanohi, and these attributes are intertwined with whakapapa and identity. It is therefore important to reject notions of hui and interview narratives as discrete forms of data separate to the participants that can be "cut up" and assembled (Somers, 1997). The aforementioned data collection methods underpin an approach to narrative analysis that draws on decolonising paradigms, respects narratives in their entirety and disrupts the potential power imbalance of the "I" researcher and the "they" researched. Instead, researchers and participants collaboratively construct narratives as a "we", respecting the mana of participants. This is particularly important when discussing potentially traumatic topics of climate change impacts that may emerge during the research.

The data collected for this research includes interview and hui kōrero, documents, images and pūrākau. While the forms of these data are varied, they may all be understood as different forms of narratives. According to Elliott (2005), narratives have an important social dimension and are told in a specific social context for a particular purpose. Somers (1997) describes narratives

as constellations of relationships, embedded in time and space and constituted by causal emplotment (the assemblage of elements in a story). She explores four categories of narratives that frame the social world and our social identities : ontological narratives (personal narratives), public narratives (attached to cultural and institutional formations), conceptual narratives (social science theory) and meta narratives (master narratives such as climate change, colonisation and neoliberalism) (Phibbs, 2008). The context and purpose of narratives is particularly important for understanding how stories are constructed and how they operate at different levels.

No narrative exists independently of others; they are co-constitutive and relational, transcending defined fields (Somers, 1994). Therefore, a nested analysis approach has been taken during this research to address the different levels of narratives and the intersections between ontological and whānau narratives, public and Māori narratives, conceptual narratives and meta narratives. The nested narrative approach is useful for exploring the sociopolitical context of climate change broadly because it remains a contentious issue in ontological and public spaces in contrast to the science sector, where climate change is readily acknowledged as a critical reality. The whatu kākahu approach (outlined above) for analysis uses a narrative analysis framework to explore the interrelations, influence and expressions of the hou of nested narratives (Gergen & Gergen, 1988) and their potential tensions at intersections with identity within the data.

Te Kahu Huruhuru o Kohikohi: The cloak of Kohikohi

As previously referenced, kohikohi means "bringing together"; it is also the name of the lead author's tupuna who inspired the kahu huruhuru methodology. The cloak pictured in Figures 1 and 2 belonged to Kohikohi, and was donated to Te Hikoi Museum by Ulva Belsham (QSO) in 1990. Whatu techniques for this kākahu utilise a candlewick kaupapa and embrace traditional materials such as harakeke as well as feathers from bantams and roosters that were likely brought over by the colonial whalers who settled in the Oraka-Aparima area. The kahu huruhuru is woven using many different patterns, textures and colours, as well as inherited knowledge, which combine to

Figure 1 (left): Lead author with the kahu huruhuru, Te Hīkoi Museum (July 2021)

Figure 2 (above): A close up image of the kahu huruhuru, Te Hīkoi Museum (July 2021)

Figure 3 Te Kahu Huruhuru o Kohikohi methodology

produce a beautiful and protective cloak passed down through whakapapa.

The kākahu bricolage methodology (outlined in Figure 3) combines te ao Māori and Western knowledge and practices to build patterns and meaning. It is woven using a Kaupapa Māori qualitative methodology as the muka thread, with whakapapa binding together the elements. It is adorned with colourful ngā hou, kōrero, mātauraka Māori, tikaka Māori, pūrākau and hikoi representing intergenerational narratives of whānau experiences with climate change. Other forms of narratives and data in the form of Māori and non-Māori planning and policy documents and climate change research and practices provide complementary and contrasting ngā hou feathers.

Ultimately, Te Kahu Huruhuru o Kohikohi is the methodological framework to develop an intergenerational locationally, culturally and temporally relevant kahu huruhuru resource to serve whānau adapting and responding to climate change impacts. While the physical kahu huruhuru is currently in storage at a museum to be carefully preserved as a taonga for future generations, it is the author's intention for the Te Kahu Huruhuru o Kohikohi methodology and accompanying academic research to be actively used, for whatever purposes current and future generations deem to be important.

Tying off the strands: Conclusion and recommendations

This methodology in many ways is a response to calls for greater inclusion of Indigenous voices in the climate change research, policy and practice arenas. It is imperative that Indigenous voices can be heard in order to respond effectively to the challenges of climate change. Yet, there is significant diversity in the autonomy, contexts and experiences of Indigenous peoples and in the ways they respond to current extreme weather-related events and plan for a future, increasingly challenged by climate change. Research methodologies used by Indigenous academics when working with their communities should also be diverse and reflect the local priorities, knowledges and cultural adaptation practices of these groups. Te Kahu Huruhuru o Kohikohi is one such methodology, uniquely developed during and for this particular study and for the individuals, whānau, rūnaka and iwi members who participated in the research.

Te Kahu Huruhuru o Kohikohi weaves together an innovative methodological framework underpinned by localised rūnaka and whānau knowledges that responds to the urgent call for increased inclusion of Indigenous agency and voices in climate change research. Throughout this project, the diversity of Indigenous experiences is emphasised, challenging the one-size-fits-all frameworks often presented in global and national climate change policies. This methodology underscores the importance of a Kaupapa Māori perspective, where Māori realities, values and worldviews are seen as central to both research and the practice of climate change adaptation.

One of the most significant contributions of Te Kahu Huruhuru o Kohikohi is its focus on the bricolage approach, combining elements of

qualitative, Kaupapa Māori and Western methodologies. This approach allows for a flexible and adaptive research process that respects the mana of the participants while recognising the complexity of the issue at hand. Climate change, with its global scope and local impacts, requires a framework that can account for multiple-layered temporalities and ontologies. Te Kahu Huruhuru o Kohikohi achieves this through its focus on whakapapa. By framing knowledge in this genealogical context, the research can highlight the intergenerational storytelling and responsibilities that are central to Māori communities' responses to climate change.

The importance of storytelling cannot be overstated. As the article highlights, much of the mainstream climate change research is rooted in quantitative models, and often ignores the rich narratives that voice Indigenous peoples' lived experiences. For Māori, these stories are not just data points; they are the foundation of ontological and epistemological understandings of the world. Through the integration of pūrākau, wānanga and hui, Te Kahu Huruhuru o Kohikohi enables a deep engagement with Māori knowledge systems, ensuring that research on climate change reflects the lived realities and cultural practices of the communities involved.

The methodology also addresses gaps in current climate change policy and planning, particularly the tendency to overlook the specific needs and values of Māori communities. In doing so, it provides a framework for policymakers to engage meaningfully with Māori-led strategies for climate resilience and adaptation. By centring Māori voices and honouring local experiences, this methodology not only enriches climate change research but also serves as a methodological model for other Indigenous communities in Aotearoa and globally.

In conclusion, Te Kahu Huruhuru o Kohikohi offers a transformative and culturally grounded approach to climate change research. The narratives and information collected through this research stand as a record of participants' experiences and mātauraka, and their hopes for the future in adapting and responding to climate change. The methodology also provides a rich resource for planning responses to climate change, through determining what the priorities and risks are for Māori, as well as identifying what takata whenua value and what needs to be preserved for future generations. This methodology will continue as a resource for Southern whānau, rūnaka, hapū, and iwi as they navigate the ongoing impacts of climate change and work towards a sustainable future for their communities and future generations. More broadly, this korowai stands as a testament to the resilience of Māori knowledge systems and the necessity of Indigenous-led research in addressing one of the most pressing global challenges of the current era.

Glossary

aho	vertical strands in weaving
ako	pedagogy
aroha ki te takata	respect the people you are working with
hapū	Māori subtribe
harakeke	flax
here	cord
hikoi	journey
hou	feathers
hui	meeting
iwi	Māori tribe
kahu huruhuru	feathered cloak
Kāi Tahu	an iwi or tribe based in the South Island of Aotearoa New Zealand, otherwise known as Ngāi Tahu
kaitiaki	guardian or steward
kaitiakitaka	guardianship or stewardship
kākahu, kāhuku	garment
kanohi ki te kanohi	face to face
karakia	incantation
kaupapa	foundation
Kaupapa Māori	Māori values or foundation
kete	baskets
kia mahaki	be humble
kia tūpato	be cautious
kohikohi	coming together
kōrero	interviews or discussion
korowai	cloak
mana	prestige, authority
manaaki ki takata	be generous in sharing with people
manaakitaka	generosity or hospitality
marae	communal meeting house
mātauraka, mātauranga	knowledge
moana	sea, ocean
muka	a silky fibre made from processing harakeke materials

Murihiku	southern South Island, Southland
ngā hou	feathers or data
Ngāti Ruaka	tribe based in the southeast of the North Island of Aotearoa New Zealand
noa	profane
Pākehā	New Zealander of European descent
pūrākau	intergenerational stories
rakatirataka	self-determination
rūnaka	regional iwi governance bodies
Takaroa	deity associated with the sea
takata whenua	Indigenous peoples of Aotearoa New Zealand
takiwā	region
taonga	treasured items
tapu	sacred
Te Ara a Kiwa	Foveaux Strait
te ao Māori	the Māori world or Māori worldviews
te reo Māori	the Māori language
te Tiriti o Waitangi	the Treaty of Waitangi
te whare pora	the house of weaving
tika	true
tikaka, tikanga	cultural practices
tupuna	ancestor
tūpuna	ancestors
tūrakawaewae	a place of belonging where Māori with ancestral links to the locale can stand and speak
tūturu	permanent
wāhine	women
waiata	song or songs
wairua	lifeforce
wānaka, wānanga	workshops
wānakahikoi	journey
whakaoraka kōrero	listen first, speak later
whakapapa	genealogy
whakawhanaukataka	build relationships
whānau	families
whatu	handweaving
whatuora	methodology
whenu	horizontal strands in weaving
whenua	land

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