

# Collaborative Ecologies through Material Entanglements

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## Abstract

This paper addresses aspects of collaboration and conceptual frameworks in practice that are central to our project, *Phenomenal Dress*. The research has been informed by material thinking, posthuman theory and New Zealand Māori perspectives, through processes of “making-with” (Haraway, 2016). Working with an ecosystem, engaging with localized non-human phenomena as well as cultural and scientific experts, mediated materials, textile surfaces as new forms of “dress-action” (Tiainen, Kontturi and Hongisto, 2015) have been developed through relational entanglement. The artefacts produced in the project are not functional or fashionable products, they are matter flows, formed through diverse perspectives and collaborative processes. They suggest a reconsideration of dress as material-aesthetic activations and pathway towards co-emergent understanding.

Through this approach, the ecosystem is recognised as the primary collaborator, repositioning human and more-than-human relationships. This approach is informed by Māori knowledge and ways of knowing (mātauranga Māori), perspectives of kaitiakitanga (stewardship) and deeper relationship with the lifeworld through acts of sensing, noticing, making and following. The methodology is grounded in an ontological shift away from human-centredness, where matter and place have been positioned as object, to focus instead on matter as vital collaborator and place as habitat where the interconnections between things can be expressed.

## Keywords

Collaboration; Whakapapa; Materiality; Making-with; De-centred design

The complex environmental impacts of human actions on the world cannot be addressed within a single disciplinary framework. Collaboration is fundamental to the exploration of these pressing issues, with a growing body of research into forms and methods of interdisciplinary collaboration (Darbellay et al, 2014; Szostak, 2017). Collaborations between the arts and sciences have gained momentum, however, there are fundamental assumptions behind most cross-disciplinary research approaches that stems from our immersion in western knowledge frameworks. If research is to move beyond disciplinary boundaries and transcend the limitations of their established worldviews (Klein, 1990) attention must be paid to ontological positions outside of established western paradigms and to emergent methodological approaches that enable new conceptual frameworks in practice, supported by more interconnected forms of collaboration. Anna Tsing (2015) argues that staying alive—for every species—requires liveable collaborations, and that collaboration means working across difference.

This paper addresses the emergent frameworks, collaborative forms of engagement and

processual materialities that have been central to our design project, *Phenomenal Dress*. The project was based at Karekare, an ironsand beach, forty kilometres from Auckland on the west coast of the North Island of New Zealand. The frameworks that locate and have informed this research, in particular new materialism and indigenous Māori perspectives are discussed. We do not claim consensus between these frameworks, and acknowledge the significance and specificity of Māori knowledge and agency within the bicultural context of Aotearoa/New Zealand. Situated within this environment, the imperative of working with decolonizing methodologies can be seen as acts of tino rangatiratahi - self-determination (Smith, 2012). The framings discussed in this paper have helped guide us to new areas where the interconnections between things are considered and explored through decolonized and new materialist lenses.

Working with the medium of dress, we have shifted away from traditional western notions of clothing as representation and object, to a consideration of dress as site of material aesthetic activation. The human body has long been regarded as the locus of dress. In seeking to de-centre the human, we engage diverse terrestrial bodies within an ecosystem through a process of making-with (Haraway, 2016). Working within a specific environment with localised non-human phenomena as well as cultural and scientific experts, we have co-produced mediated materials, textile surfaces and new forms of dress through collaborative processes of making. Dress becomes action and connective capacitor rather than representational object, fashioning relationships between things.

The processes and methods informed by these framings are addressed. Collaboration is reoriented within a context where the ecosystem is the primary collaborator, repositioning human and more-than-human relationships. This approach is grounded in an ontological shift away from human-centredness where matter and place were positioned as objects, to recognise a vitality of matter, as both subject and collaborator. Through this approach diverse boundaries intersect, reframing and enabling new understandings and forms of expression. This situated, participatory, practice-led approach, involves a process of being-with through sensing, noticing and following material and phenomenal intra-actions (Barad, 2007).

Finally, we discuss two completed works that involved processes of thinking through acts of making informed by new materialist and mātauranga Māori frameworks. We conclude with a short discussion of insights gained through this research. The paper highlights the urgency of developing new modes of research through practice that engage with materiality from perspectives other than human-centric and commoditized. Without collaboration and deeper understandings of our interconnection through and in the material lifeworld, there can be no future.

## **Focus and Framing**

### ***De-centring the Human***

Human-centredness has been a key design strategy for several decades, seeking to “promote the well-being of people by helping to gratify their basic needs” (McKim, in von Thienen, Clancy and Mienel, 2018). The success of ‘usable’ systems and products has elevated the widespread adoption of human-centred design approaches within the context of a globalized economy of mass production and hyper-consumption and its repercussions as waste and environmental degradation. A repositioning where the non-human is recognized as central to being, and where human well-being is no longer the dominant concern for designers within our interdependent life world, is overdue.

In considering these complex issues, the *Phenomenal Dress* project has drawn from two distinctive frameworks: the predominantly western theories of new materialism and traditional Māori perspectives of connection between human and non-human. This approach recognises that holistic thinking based on long-held Māori knowledge (mātauranga Māori), has increasing relevance to the growing environmental and societal problems that face our world. This has some synergies with emerging western perspectives that seek to reposition the human as part of, rather than separate from the world. The Māori world view (te ao Māori) acknowledges the interconnectedness and interrelationship of all living and non-living things. Thus, the significance of Māori knowledge and agency is pivotal. We have sought areas of productive interaction and new understandings generated between these different frameworks. This is not about claiming similarity, but recognises that mātauranga Māori already embeds an expanded view of relationship between people, place and things. Language has been important within the project in developing understandings, and te reo Māori (the Māori language) has opened up new insights and pathways. This aspect is discussed through the example of whakapapa.

New materialism can be understood as an ontological turn to reprioritise matter, recognising the agency of things and assemblages of human and nonhuman, such as natureculture (Haraway, 2003). This rethinking of materiality has also focused attention on processes of making, prompting a re-evaluation of design and its potential beyond cycles of fashionability and replacement. This material turn that includes both physical processes of making and methods based in mediation, has contributed to an ontological re-orientation that decentres the human, recognising the notion of active matter and the vital materialism we are part of. Anthropologist Daniel Miller talks of 'sapient materiality', where both consciousness and cognition are "bound to the specifics of materiality rather than defined by their opposition to a material world" (2005, p.34). This material knowing challenges dualities of body and mind, material and immaterial, object and subject (Joseph et al, 2017). In this context, facture is an embodied process, even when technologies are utilized or things made by non-human agents.

Embodied practices of making create greater awareness of the interrelationships between things. Anthropologist Tim Ingold (2010a ) identifies designerly approaches to making as "an imposition of form upon the material world by an agent with a design in mind" (p.91). Rather than this enforcement, he proposes that the forms of things arise within fields of force and flows of materials. Practitioners make things by intervening in these force-fields and following these lines of flow. Recognising the interwoven nature of textiles and making as a practice of weaving things together, he introduced the term 'textility'. The complexity of textiles as material systems made from interwoven or tangled fibres, becomes a metaphor for the interrelatedness of things in the material world. The concept of textility is relevant to complex material systems as well as textiles, and this notion also becomes a thread within our research.



Figure 1. Karekare Beach, Wāitakare Ranges, Auckland, New Zealand. M Smitheram, 2018.

## **The Project Whakapapa**

Karekare Beach provides both the location and the mauri that physically and spiritually grounds the project. 'Mauri' is a Māori concept that refers to life force, the elemental energy which binds and animates all things in the material world. The presence of mauri infers a whakapapa to this place. It is alive; therefore it has histories, existing relationships, ancestry and kin. Whakapapa extends from and surrounds a thing, as layers of connection and can be understood as a genealogy and a geological layering of people, places and things. Scientist Mere Roberts describes whakapapa as:

*“most commonly understood in reference to human descent lines and relationships, where it functions as a family tree or genealogy. But it also refers to an epistemological framework in which perceived patterns and relationships in nature are located. These nonhuman whakapapa contain information concerning an organism’s theorized origins from supernatural beings, inferred descent lines, and morphological and ecological relationships.” (Roberts et al, 2004)*

It is impossible to work with or consider matter from Karekare in isolation without engaging with inherent socio- cultural narratives. The discovery of the whakapapa of matter from a grain of sand to volcano, informs and forms layers of response through making- with. Each new unfolding of history and narrative in turn influences the making practice.

Another perspective on whakapapa can be found by examining the word itself. An important aspect of te reo Māori is the layers of meanings contained within words, often involving combinations of other words and contexts. Cultural commentator Bidois (2006) offers a definition while cautioning that there are many understandings of words and this is just one:

*“Whaka can mean ‘to create, to cause, to bring about, to action.*

*Papa can refer to firmament. Ground. Solid base. (Papatuanuku – Mother Earth).*

*From one perspective and understanding, Whaka-papa can be seen to mean ‘To bring about grounding’ ‘to provide a solid base’.”*

Whakapapa can be visualised as sedimentary layers, charting the intersections of lineage between places, people and things (see Moore and McFadgen, 2006). There is a synergy between this cosmological concept in relation to the context of the Anthropocene, with human industrial production adding a new, destructive geological layer to the planet. Within the *Phenomenal Dress* project, tracing whakapapa and relationships of things has assisted design decisions and actions.

New materialism theorist Jane Bennett describes a similar kind of ontological philosophy of relationship, one in which matter has never been dead or separated from people, urging us to imagine “an ontological field without any unequivocal demarcations between human, animal, vegetable, or mineral. All forces and flows (materialities) are or can become lively, affective, signalling.” (2010, pp 116–17). Anthropologist Dame Anne Salmond (2017) draws a parallel between Bennett’s theory of vital materialism and mātauranga Māori, bringing our attention to the thoughts of nineteenth century Māori philosopher Nepia Pohuhu, who said:

“All things unfold their nature [tupu], live [ora], have form [āhua], whether trees, stones, birds, reptiles, fish, quadrupeds or human beings”.

The black ironsand that makes up the west coast beaches between Whanganui and Auckland originated in the rocks of the central North Island volcanic field some 2.5 million years ago. Over centuries, these rocks eroded from mountains including Taranaki, Ruapehu and Pirongia, the particles washed down waterways including the Whanganui and Waikato rivers, transported by ocean currents along the coast and deposited as sand on west coast beaches.

Thus, the geology and whakapapa of Karekare Beach can be traced through these sediments to these rivers and mountains. To situate a whakapapa of this iron sand that forms the beach and trace a line from matter back through cosmogony to origin, we propose this sketch (Figure 2). This whakapapa is by no means definitive, but is an approach to thinking through the whakapapa of a particular material within this project and ecosystem.

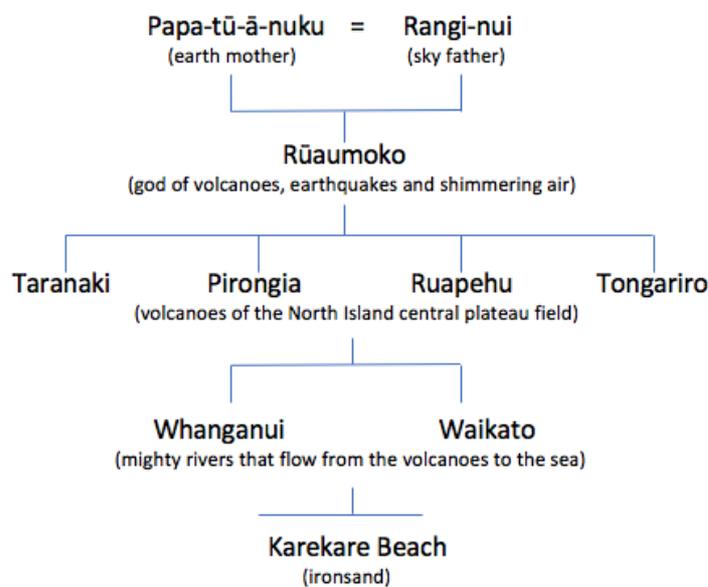


Figure 2. Ironsand Whakapapa, M Smitheram, 2019.

Figure 2 illustrates a lineage from creators to individual grain of sand. For the researchers it is significant in understanding the potential and connectedness within a particular form of matter. This whakapapa charts the descent from earth mother Papatuanuku and sky father Ranginui, the primordial couple in Māori creation traditions. Their union created many children from whom all human and non-human things in the world descend. This foundational narrative connects human, place, water, mountain and gods in te ao Māori. One child was never born, but instead stayed within his mother’s womb. When he moves the earth shakes. To keep Papatuanuku warm, he holds volcanic fire. This god, Rūaumoko, is known as the god of earthquakes, volcanoes and of heated shimmering air, such as we see across the sands at Karekare on a sunny day.

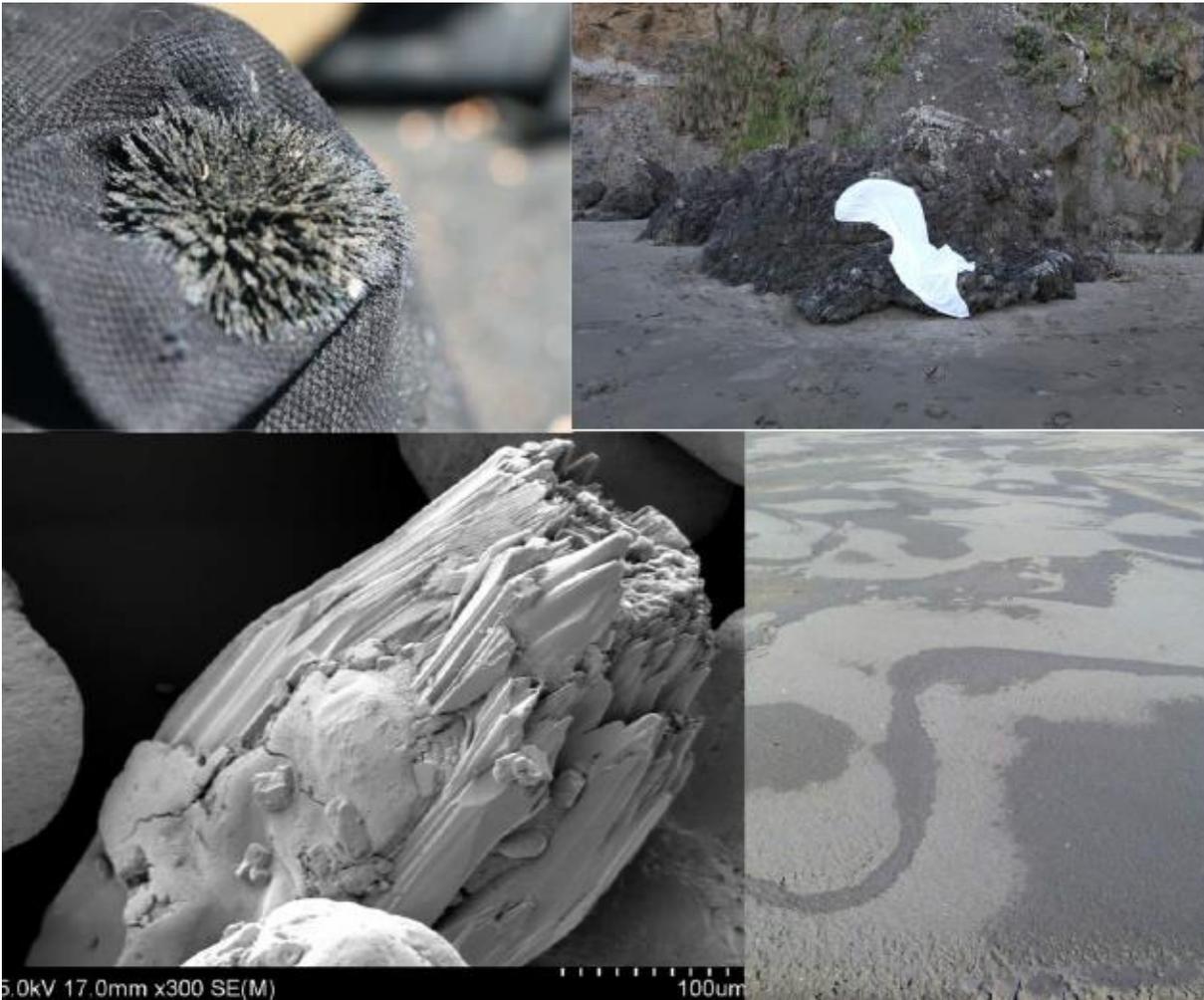


Figure 3. Making-with ironsand, M Smitheram & F Joseph, 2017-19.

In charting this whakapapa the ontological and cosmogenic sense of matter in familial relationship to people is highlighted. Matter is not only ‘vital’, it is situated *within* our Māori genealogies and histories, an extended and complex addition to the capacities Bennett attributes to matter, “edibles, commodities, storms, and metals act as quasi agents, [...] with their own trajectories, potentialities and tendencies” (p. 9, 2010).

### ***Dress, Embodiment and Making-with***

Dress may seem a peculiar form to choose in attempting to engage with an ecosystem and decentre the human. Traditionally, the locus of clothing is the human body. Interpretation of dress in cultural and fashion studies has been through frameworks of constructivism and representation (Barthes, 1967; Davis, 1994). While the field of Dress Studies researches physical artefacts, focussing on materials, design and construction rather than representation (Taylor, 1998) its concerns remain human-centric. These normative perspectives on fashion and dress, based in a hierarchical separation of mind and human perspectives over matter and the non-human, are being challenged by new materialist thinking (Tiainen, Kontturi and Hongisto, 2015; Edelkoort, 2016; Ruggerone, 2017; Smelik, 2018).

Recognising this ‘material turn,’ Smelik suggests fashion is “materially embedded in a network of human and non-human actors” (2018 p. 34). Decentring the human subject, fashion expands “beyond the frame of the body and human identity to the non-human world

of technology and ecology". Tiainen, Kontturi and Hongisto (2015, p.14) ask how we might consider aesthetics "beyond the assessment of cultural expressive patterns as the initial impingement of the worlds materialities from physical locales to mediated textures upon us?" The project *Phenomenal Dress* explores such inter-connections through collaborative practices of dress-making and performance as material-aesthetic activations.

Through this ontological shift we change focus from human subject to engagement through "active materials that compose the lifeworld." (Ingold 2012. p.249). This position recognises that consciousness is inextricably linked to material processes; that our minds and bodies are not separate dimensions; that physicality is more than ordinary matter. In this entangled context, the artefacts produced in the *Phenomenal Dress* project are not functional or representational garments, they are expressions of sensory receptivity that trace the relational emergence of phenomena at Karekare into perceptibility. The human body and its associations with individuality and subjectivity is replaced by a notion of inter-related bodies that form the ecosystem. Dress becomes a medium for exploring this trans-corporeality (Alaimo, 2010) as ways in which bodies interface with other human and non-human bodies in reciprocity.

## **Methods and Research Process**

These philosophical and cultural frameworks have informed research protocols and methods including: the observation of mātauranga Māori protocols; the investigation of cosmogonic, scientific and historical accounts; acts of sensing, noticing, following and being in the environment; material agency through experiment, play and collaborative processes of making-with; embodied activations through performance; mediation, documentation and ethnography. The project is practice-led, involving refractive methods in a process that is both generative and iterative. Here we consider certain aspects of the research process.

### ***Collaboration***

We have engaged through an expanded notion of collaboration as 'working with others' including human and more-than-human participants. This was fundamental to the project. We have collaborated with various phenomena and things that are part of the Karekare Beach ecosystem. Together we make-with sand, wind and sea, streams, dunes, rocks, hills, flora and fauna, through emergent methods of co-production. In keeping with this sense of interconnection between things, this process of making-with rather than extractive notions of making-from or functional approaches to making-for informs the design process. Agency, as the capacity to act and to make choices, is co-constituted and emerges within the complex, changing relationships of human and non-human things.

The research has been realised through our collaborators, the communities they align with and have been informed through. A fundamental collaboration is between the artists/authors who bring diverse cultural backgrounds as well as prior experience and knowledge of different forms and histories of making to the project. These include fashion and costume design, pattern and dressmaking, sculpture, installation, textile and puppetry design and digital media production. We have drawn and extended from the technical and aesthetic considerations of these fields, their particular methods, materials and orientations to the body.

Our main collaborator is Karekare Beach, its life and the forces and systems that influence

or connect with it such as the sun (evaporation, heat), moon (tides), wind, rain (erosion) and volcanoes. In particular, we acknowledge the westerly wind; the conglomerate rocks of the Wāitakere Ranges; the dunes and black ironsand; the powerful waves, tides and foam of the Tasman Sea; the salt crusts forming on the hot sand; the spiders and their cottony webs; seaweeds and algae; the shy, blue penguins who burrow in the dunes; the courageous dotterels, nesting precariously on the sand too close to the powerful sea; the spinifex grass that holds the dunes; the pohutukawa trees clinging along the edge of the land; driftwood, flax, stream and all the others, without their engagement and contribution this project could not exist.

We have also worked with various apparatus, materials and devices that extend our human capabilities, heightening senses of hearing, seeing, remembering and touching, while also bringing their own mediated perspectives and histories to play. We have worked with human collaborators including dancers, mātauranga Māori advisors, scientists, engineers and artists, in the investigation of cosmogonic, scientific and historical accounts and areas of technical, aesthetic and performative experimentation.

### ***Practice-led Research***

Research through arts has been acknowledged as a way that anti-dualist materialist theories can be transformed into a methodological framework to guide practical research (Vannini, 2015; Schadler, 2019). Our research is practice-led, recognising that creative practice enables alternative forms of understanding through artistic experimentation and aesthetic production. Here we consider five strategies followed in the project.



Figure 4. Photo documentation of field trips, M Smitheram and F Joseph, 2017-19.

### ***Field Trips***

Our field trips to Karekare began with a karakia (prayer) to greet our beach collaborator. This moment signalled a formal beginning to research of that day and an active invitation to the elemental forces and ecological collaborators. The karakia acknowledges the mauri of the beach and for the human researchers was a prompt to breathe, notice what was happening around us, observe the conditions, recognise any changes since our last visit. Over

numerous visits to Karekare we spent time walking, watching, smelling, touching, following, sitting, swimming, noticing how things behave and interact with us and with other things. This post-phenomenological tendency acknowledges a rethinking of intentionality as an emergent relation with the world. It emphasises exploration through the senses, considering the different scales and temporal shifts that affect the way things engage and interact. This approach, based on experience through being-with, paying attention and noticing rather than relying on formalized knowledge independent from experience, was central to the research. We followed things, considering ways of extending out from encounters and experiences. Documentation was produced through drawings, notes, photographs and video. Sample materials were collected from things washed up on the beach, windfall leaves and flowers or where there was an abundance of a particular material.

### ***Material Agency***

Through material engagement we gained awareness of the agency, contexts and interrelationships within the Karekare ecosystem. A focus on the flows of materials and their intra-actions is of critical environmental significance and has been a key principal in the realisation of the project. For example, an important socio-political issue is associated with the use of ironsand as a resource in New Zealand, with commercial seabed dredging used to harvest ironsand for steel production causing ongoing ecological and biophysical damage (KASM, 2018). Recognising the webs of interconnection between a substance such as ironsand and the cultural, geo-physical, biological and industrial dimensions that impact on it, is important to the way materials make-with us and in creating greater awareness and understanding of them.



Figure 5. Experiments and prototypes, M Smitheram and F Joseph, 2017-19.

### ***Play and Experimentation***

Strategies of play and experimentation have enhanced awareness of phenomena and behaviours. We engaged in spontaneous play- walking barefoot through mud; crunching through dried salt crusts on the exposed sand; floating in rock pools; chasing tumbleweed along the beach. Through more structured experimentation offsite, we noticed particular

reactions (for example, the ways various ironsand on cloth mixtures responded to magnetic forces). With scientists and engineers, we analysed materials and processes, to understand their behaviour and transformation.

These experiments gave us a greater sensitivity to materials and how they combined with other things in the environment at Karekare Beach, sparking new ideas and areas for research. Walking on the salt-crusted sand led to experiments with salt crystals. Through trial and error, we learned what conditions aid or impede their formation. Whakapapa as an ontological understanding helped identify these symbiotic relationships. We came to understand the time frames of crystallization, the affect of the seasons, humidity and light. The salt crystal textiles are part of an ongoing series, evolving as we develop ways of working-with evaporation.

### ***Performance***

Performativity has been intrinsic to the exploration of the ecosystem and the making and activation of artefacts. Karen Barad (2003) recognised the challenge that performativity poses to the issue of representationalism. She notes that the discursive practices generated through performativity are not language based but are “specific material (re) configurings of the world through which local determination of boundaries, properties and meaning are differentially enacted.” (p.821)

Through reciprocal intra-actions between human and non-human actors at Karekare, material discursive forces emerge. Transcorporeal forms of interrelationship - for example between bodies of dancers, rock, wind, sea and cloth - reveal differential constitutions and forms of agency. Performativity enables diffractive material reconfigurings through iterative intra-activity. These diffractive flows were inherent to the ways the dresses were created: as we touched, arranged, wore and moved with the dresses and the phenomena they were activated by. This led to further adaptations and extensions of these works into the environment. We also collaborated with professional dancers from Atamira Dance Company who brought a distinctive perspective to the activation of matter and place through movement and embodiment in te ao Māori. A performative dimension has carried through to the activation of work (as physical artefacts or mediated through documentation) in galleries and presentations.



Figure 6. Activation: Volcanic rock, magnetic cloaks, salt crystal sculpture, M Smitheram, 2018.

### ***Remediation***

Two approaches to remediation have informed the project. The notion of a medium as an intervening agency or means by which something is conveyed was engaged across a range of creative and technical fields. The term mediation emphasises the heterogeneity of transformations arising from media across temporal and social spaces, rather than a single media logic. This idea challenges any futuristic sense of technological progression. Mediation acknowledges diverse disciplinary and technological histories through new combinatorial strategies. Remediation is an integral practice to both new and old media forms that continually inform and react to one another “making new media forms out of older ones” (Bolter and Gromola, p. 83, 2003).

Photography and video were used to document the project. In turn, these images have been used to generate new works. For example, a lichen cloth was developed using photographs of lichen growing at Karekare along with background imagery from an eco-print made from lichen. This digital print was then washed in rain water and lichen was cultured and grown on the printed cloth. The resulting cloth, incorporating growing lichen and different representations of lichen, was draped on rocks and dancers at Karekare and photographed. Eventually the lichen ate through the cloth adding jagged holes to the assemblage.

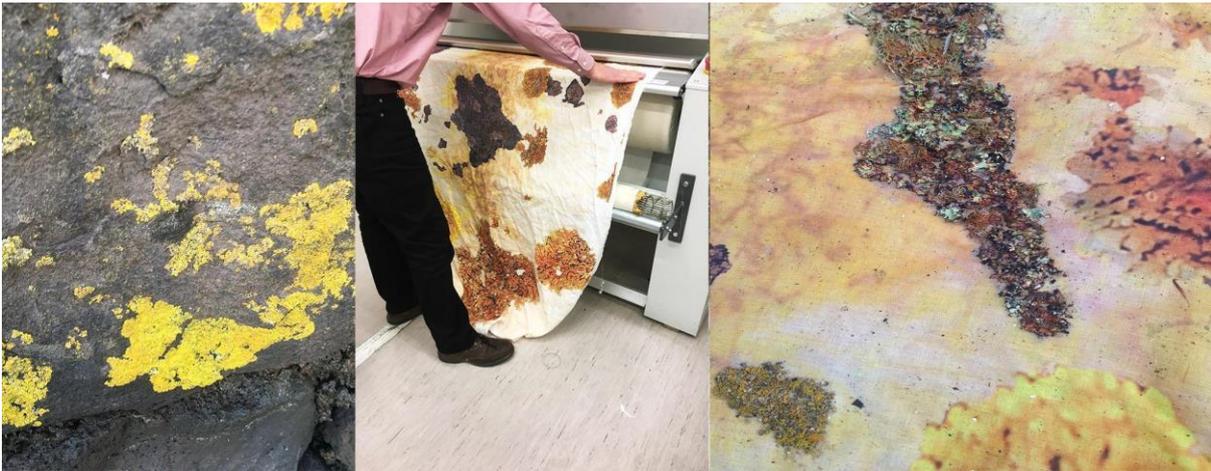


Figure 7. Lichen, digital print, and lichen cloth. M Smitheram and F Joseph, 2018.

Remediation also refers to the action of remedying, in particular of reversing environmental damage. A key protocol has been not to leave anything we brought with us behind, minimising and ameliorating impacts we have on the beach. Where possible materials gathered on site are returned back to where they were collected. The salt on the salt crystal textiles dissolves back into the sea. This phase also closes loops of active collaboration with matter, opened by the *karakia*, and closed by the respectful return of matter to decompose, return to nutrient and collectivity within the ecosystem.

### ***Ethnography and Analysis***

Sociologist Cornelia Schadler recognises that new materialisms are becoming “entangled with methodological tools that have been created within other theoretical frameworks.” This entanglement challenges already-existing boundaries produced in these research traditions redefining them “within a new materialist ethnographic apparatus” (2019, p. 215). Research becomes a shared enactment involving the researcher and other participants, their values and drives along with the research methods, tools, apparatus and associated discourse. In recognising the histories, boundaries and tensions between these various positions, entities and processes, research is re-negotiated and re-configured.

In our project this shared enactment has been expressed through creative practices of dress-making and in material-discursive forms including exhibition (figure 8), video and writing. In documenting and articulating the project through ethnographic accounts we have worked diffractively rather than reflectively, approaching material assembled from different perspectives.



Figure 8. Documentation of practice, exhibited at Deakin University, Melbourne, Australia, M Smitheram and F Joseph, June 2019.

## Case Studies

*Phenomenal Dress* is an ongoing project with a number of works still in progress. Here we present two works as case studies, highlighting diffractions of phenomena, collaborators, histories, processes and entanglements.

### ***Collaboration with the Wind: The Hīnaki Dress***

The west coast of New Zealand is subject to powerful, onshore winds blowing off the Tasman Sea. Some vegetation at Karekare grows bent over permanently in an easterly direction due to the force of the wind. The Hīnaki Dress is based on the form of eel nets (hīnaki) that were used to catch tuna (freshwater eels) a major food source for Māori, particularly for tribes living along the west coast rivers like the Whanganui. While some 400 weirs for eel trapping were recorded along the Whanganui River in the mid nineteenth century, within sixty years they had all but disappeared due to the impacts of colonisation. The endemic long finned eel is now endangered, being adversely affected by human activities, such as pollution, the building of dams, loss of near habitat vegetation and commercial overfishing over the twentieth century.

The Hīnaki Dress is made like a skirt from a series of concentric tucked layers of cloth, rather than woven like a traditional hīnaki. But we were not trying to catch eels, rather we sought to explore traditional hīnaki forms in relation to air flow. The dress also resembles a windsock, used to indicate the wind direction at airports. High above the skies over Karekare Beach, jet planes arriving from distant places descend for landing at Auckland Airport on the far shore

of the Manukau Harbour.

The scale of the mouth of this form is related to the extended height of a human-being so it can be held (by hands and feet) and performed with. The dress is inflated and channels the flow of the wind. Positioned at the water's edge, the power of the gusting wind and the wash and pull of the waves over the sand are channelled through the dress and felt in a visceral way by the performer. The Hīnaki Dress is large and feels huge and powerful when experienced by the performer. The wind seems to delight in any chance to capture and billow the hīnaki and the performer clings on in 'shared' exhilaration as gusts direct its flow and motion. The agency here is the wind, and the performer feels its strength and rhythms through the medium of the dress. Observing the performance from along the beach, the drama seems remote and unremarkable. The white of the dress contrasts with the dark sand and rugged expanse of Karekare, blending with the foam of the waves, becoming part of the landscape.



Figure 9. Hīnaki Dress, M Smitheram, 2018.

### ***Collaboration with Kowhangatara: The Spinifex Dress***

The kowhangatara or spinifex dress was slow to make. In April 2018 we tested a puffy cloud-like prototype form that stretched between rock, sand and stream. But it lost its shape when buffeted by the wind and rain. On previous visits we had noticed the wind's interaction with spinifex tumbleweeds, blowing them along the sand. We found a bedraggled tumbleweed on the beach - the very last of the season - and wondered what it would be like to involve more of them in shaping this dress. We noted the way they had grouped and clustered in gaps and hollows, their scaly offshoots gripping to each other, their star-burst shapes filling space while allowing air to circulate. These qualities suggested potential for inflating the prototype with volume without weight or density.

The spinifex plants grow on the sand dunes protecting them from erosion. When their spherical, spikey seed pods ripen, they break free from the plant and blown by the wind, first totter and then tumble along the beach to find new spaces to propagate. We waited until

February 2019, when the tumbleweed was ripe and had broken free from parent plants to roll away, amassing under bushes or rocks. Echoing the downy spiders' nests found in the sand dunes, the dress was made of gathered tulle pockets. These were filled with tumbleweed, inflating the forms with their spindly shapes. We photographed this dress worn by the rocks and also worn by us. Placed in the pockets of the dress form, the tumbleweed weightlessly occupied space and volume, yet were still responsive to the gusts and billows of the wind. The bulbous shapes of the spinifex dress draped from the rock to connect with the sand and covered the human form echoing the shapes of the rocks and the clouds. The tulle catches and clings to the rock, the spinifex casts delicate shadows through tulle onto the sand, the dry spines of the spinifex scratch skin and in the sunshine give off a faint hay-like scent. Then we released the tumbleweeds back onto the beach and they rolled and bounced away.



Figure 10. Kowhangatara/ spinifex dress, worn by researcher (L) and volcanic rock (R). M Smitheram and F Joseph, 2019.

## Conclusion

In developing an expanded notion of collaboration, the *Phenomenal Dress* project engages with phenomena and the agency of the material world at a critical moment of environmental crises. The artefacts produced are not functional or fashionable human-centred products, they are matter flows, formed refractively through engaging diverse perspectives, sensibilities and processes as material-discursive expressions.

The project works at a porous intersection of two specific frameworks: new materialism, in particular, concepts of making-with and intra-action; and mātauranga Māori, through approaches such as whakapapa as an ontological understanding, and te ao Māori protocols

(tikanga). For the researchers, this has been an invaluable way to engage with theory from new materialism through situated making in a specific ecosystem with existing indigenous understandings of interconnection. This has highlighted the vitality of whakapapa, of Māori genealogies and socio-cultural narratives as deeply connected and evolving concepts with significance to reframing approaches to materiality in anthropocentric times. Starting from a place of acknowledgment of the mauri of Karekare Beach, material liveliness and elemental encounters have become palpable. This signals a design research journey that foregrounds sensitivity and responsiveness between human and non-human, situated local and temporal contexts, and care of relations and interdependence between people, places and things.

Whakapapa as an ontological understanding opens up a richness of place and things. We respond to nature as culture, as histories, as agential matter with meaning and cosmogony, by decentering design from a human perspective and instead following the materials (Ingold, 2010b). In addressing environmental concerns through this shift of design approach to include wider narratives “it is possible to see the links between human communities, land and sea as patterned by complex, multi-dimensional, dynamic systems in which people are related to other life forms, and our fates are tied together” (Salmond, 2017).

Through this ontological re-orientation we have reconsidered traditional notions of dress, with its primary relationship to the human body and associations with individuality, subjectivity and representation. We have worked with dress-actions, engaging the interconnected bodies of the diverse things that form the ecosystem. Dress becomes an active medium for exploring this trans-corporeality, interfacing with both human and non-human bodies through material aesthetic activations within the unique habitat of Karekare Beach.

The ecosystem is recognised as the primary collaborator, repositioning human and more-than-human relationships. Rather than our actions impacting on the ecosystem, the environment acts on us. We are changed through this engagement with matter, are affected rather than affecting. This project has been pivotal to the development of new decentred design approaches by the researchers. These processes have been incremental and organic in development. One cannot simply detach from a human-centric design position. Like the matter and ecosystem we collaborated with, the shift from instrumental design methods, to processes of observing, noticing, and responding to elemental and phenomenal actions through their agential materiality, has been a gradual re-orientation. Through the process of making-with we have moved from a reflective mode to a refractive approach to practice. Temporal scales have shifted away from imposed deadlines to a slower, matter-led timeframe. This attention to things, forces, intra-actions and embedded narratives, has opened a rich new vein within our practice of mediating materials.

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## **Miranda Smitheram**

Dr Miranda Smitheram is a designer, artist and researcher, with a practice centred around exploring embodiment, shapeshifting surfaces, and mediated matter. Miranda's research moves between digital and physical, with a particular interest in the materiality that is developed through the flux of these processes. These mediated materials take shape as textile forms, structures and digital artworks that question the interaction and agency of human and nonhuman, place and space in a post-anthropocenic context. Coming from a design background in the fashion industry, Miranda moved into research areas of material futures, completing a Master of Design and Master of Philosophy at Auckland University of Technology. Miranda's PhD research into ontology and aesthetics in digital and virtual materialities engaged with agency and tactility in motion capture and 3D spaces. Currently, Miranda holds a Māori Postdoctoral Research Fellowship, and her research has been centred around collaborations with natural phenomena to develop speculative posthuman surfaces.

## **Frances Joseph**

Frances Joseph is professor of Art and Design and director of the Textile and Design Laboratory at Auckland University of Technology (AUT) New Zealand. She studied visual art at the University of Tasmania, majoring in sculpture, and worked professionally as an artist and designer for puppetry and large-scale public performances. Frances has an MFA from the University of New South Wales and a PhD from Auckland University of Technology. Her research focus on materiality and textility, involves areas of smart textiles, fabric structures, sustainability, interdisciplinary collaboration and creative practice.

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