SKETCH, DRAFT AND REFINED HYPOTHESIS TESTING AS A CREATIVE PROCESS IN AUDIO PORTRAITURE

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ABSTRACT

Audio-portraiture describes a discrete, immersively experienced, audio rendering of an individual's identity. Paradigmatically the development and creation of these audio portraits is informed by te ao Māori philosophies, knowledge and understandings. Within a process of reflective practice, I can trace the iterative development of my portraiture through three forms of experiments, audio-sketching, audio-drafting and refined hypothesis testing. These three forms of experimentation offer a progressive artistic practice-led approach of a non-linear fashion.

Immersive sound technologies are utilized to record, synthesize and spatially position interpretations of the person's perspectives, experiences and nature. This paper provides an overview of how audio-portrait provide an artistic synthesis of sonic practices resulting in activating sensory responses for a listener that reach beyond the parameters of visual portraiture. This is because 360 immersive and binaural sound-capture technologies can be orchestrated into artistic works that convey unique experiences of space and time. Such work may be designed as a distinctive form of portraiture. Significantly, audio portraiture demonstrates the multidimensionality of wāhine Māori *(Māori women)* through artistic interpretation and representation in ways that are culturally authentic and unique.

1. INTRODUCTION

The interpretation and representation of the multidimensionality of wāhine Māori *(Māori women)* through audio-portraiture posits through artistic practice, an approach where one might integrate the physically accountable (identity, knowledge, recollection, opinion, and music) and the esoteric. As such, it positions wairua[1] *(spirit)* and mauri[2] *(life-force)* as living, communicable phenomena, capable of interpretation. It suggests that the immersive nature of sound has the potential to activate sensory responses for a listener that reach beyond the parameters of visual. This is because 360 immersive and binaural sound-

capture technologies can be orchestrated into artistic works that convey unique experiences of space and time [4]. Such work may be designed as a distinctive form of portraiture. This constitutes a distinctive renegotiation of how wāhine Māori might be interpreted and, in so doing, they disrupt a largely visual concept of portraiture that was imported into Aotearoa/New Zealand during the process of colonization [5].

My creative practice takes the form of three audio-portraits that have been the result of iterative experimentation and reflection. As an artistic practice it, "is concerned with the nature of practice and leads to new knowledge that has operational significance for that practice" [6, p. 1]. The portrait is composed entirely of sonic elements. Thus, sound becomes the artist's palette with the sound design becoming the compositional experience and canvas. A listener's experience is such that they hear, feel and sense the essence of the wāhine in an audio-portrait that is composed within a 360-sound environment of simultaneous sound cues [5].

Paradigmatically the development and creation of these audio portraits are informed by a Kaupapa Māori methodology including te ao Māori philosophies and our ways of expressing thought and being, including waiata *(song)*, karakia *(incantation, prayer)*, mihimihi *(to greet, pay tribute)* and whakataukī *(proverbs)*. Kaupapa Māori as a philosophy that guides Māori research [7, 8, 9, 10]. Such a paradigm locates Māori understandings and philosophical beliefs as central to processes, analyses and intended outcomes. A Māori worldview encompasses connections to, and understandings of all things Māori, from histories, traditions, spiritual understandings, tikanga *(Māori customs and practices)* and the use of te reo Māori *(Māori language)* to transmit cultural knowledge. Employing a Kaupapa Māori paradigm has provided a useful research orientation that utilizes familiar cultural values. These values have proven effective because I am a Māori woman working with other Māori women, but at the same time, my research draws upon the knowledge of non-Māori contributors.

Co-jointly, this project may also be conceived of as an artistic inquiry. I refer to a process of iterative development of thinking through immersion within conceptual and material development. It is artistic practice that 'leads' the research through its ability to raise questions and discoveries that shape refined versions of the audio portraits. The

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[1] Mead translates wairua as 'soul' or 'spirit' [1, p. 59]. Reverend Māori Marsden's definition, where he suggests, "wairua (spirit) or hau (the breath of the divine spirit) is the source of existent being and life." [2, p. 47].

[2] Marsden defines mauri as a "life-force" [2, p. 95]. Mauri in reference to the force or energy that holds or bonds all things together and is the connection to everything [2, 3]. Mauri may be understood as the life principle of an object, individual or ecosystem and its essence or force [2].

concept of reflective, practice-led research relates to Donald Schön's concept of reflective practice [11]. According to Niedderer & Roworth-Stokes "emphasises the role of reflection within a process to derive new insights and understanding to further research and professional practice" [12, p. 10]. An approach of reflective practice provided a framework that was integral for both iterative development and diverse forms of thinking and rethinking. It supports the time to dwell prior to beginning the creative process (and at times during it), which reinforced connections to my creative self and validated time to imagine, reflect and be in a state of openness to both the physical and non-physical and that connection to the three wāhine Māori whose audio portraits I was developing and creating [5]. Drawing upon these processes of reflective practice, I can trace the iterative development of my audio portraiture through three forms of experiment: Audio sketching, audio drafting and refined hypothesis testing.

2. AUDIO PORTRAITURE

Davidson, Seaton and Simpson describe a portrait as a rendering of "the likeness of a real person: a vivid description" [12, p. 768]. Their term 'vivid' suggests something beyond a technically figurative reflection. It proposes that a portrait might reach beyond the surface into something richer and more profound. Significantly, their definition does not assume that a portrait is a visual document. Portraiture been discussed in diverse mediums including painting [14, 15], photography [16, 17, 18, 19], narrative [20, 21, 22], and multi-media [23, 24, 25].

Building on these ideas of diverse portraiture interpretations, I define an audio portrait as an original rendering of an individual's identity. Such portraiture seeks to respond to the physical and the spiritual nature of the wairua and mauri of particular wāhine, through the creation of a sonic immersive experience that utilises binaural and immersive sound technologies. Audio portraiture contributes to the conceptualization and exploration of a unique, emerging media form that expands on the concept of portraiture as an aural medium [5].

The rationale of developing and creating audio portraits of wāhine Māori comes from the need to address a dominant, colonially constructed and under questioned, mode of representing Māori women. Drawing on Māori worldviews, this study rethinks how we might perceive the complexity of women as both physical and non-physical beings. readdressing the effects of colonisation and the imposition of non-Māori concepts of race, gender and class. These dramatically changed traditional Māori belief systems in relation to wāhine. Colonial belief perspectives positioned Māori women as inferior to Māori men [26, 27]. The negative effects of colonisation resulted in misguided assumptions that resulted in both Māori women and atua wāhine *(goddesses)* being misinterpreted, censored or made completely invisible.

Importantly, portraiture of wāhine has remained largely confined to the concerns with pictorial imagery and as such, it has failed to draw into consideration the potentials of a rich spectrum of purely aural modes (including kōrero[3], karanga[4] and oro[5]) that are integral to Māori ways of knowing and being. This is a significant issue when we consider that identity depiction of wāhine has a long and rich history in oratory, waiata *(song, chant)* and pūrākau *(narrative)* and taonga puoro *(traditional Māori instrumentation)*.

Audio portraiture grounded in Māori ways of knowing, explores specifically how audio-portraiture might capture and embody the *essence* of Māori women through sound, by responding to multiple dimensions of their identity. The honouring and affirmation of of wāhine Māori voices and the assertion of Mana wahine[6] explores how audio-portraiture might provide a way of reconceptualizing biographical material within a Māori epistemological framework by integrating the physically accountable and the esoteric.

2.1 Audio Depictions of Identity

From this corpus of research, specific ideas have proven useful to my inquiry. Miller's [30], Friðriksdóttir's [31] and Ndikung's [32] discussions of sonic portraits as compositional artefacts that draw on diverse repositories of sound, including the vernacular and intimate, resonate with my audio-portraits. This is because like them, I integrate diverse material from a broad spectrum of sonic data, including published music, laughter, intimate conversation and the ambience of a marae *(grounds, land that belong to a particular tribe or sub-tribe),* street or coastline. Although I am not concerned like Gridley [33], with interfaces between visual portraiture and sound, like her, I understand that sound has a significant relationship with the nature of the participants with whom I am working.

At times music is an integrated component in my portraiture, unlike Bach, Sadja [34] and Bongiovanni [35], I do not conceive my work as musical portraiture. But, like Bongiovanni and Gridley, I seek to explore, express and represent the 'essence' of the women I am interpreting, as such, like Walden's description of Bach [36], my audio-portraiture is an attempt to represent an individual's character, rather than her physical likeness.

I see my work as composed sound that might be positioned within a broader conception of Sound Art [37]. Thus, I see myself as a sound designer, audio culturist and sound practitioner whose audio-portraits constitute creative audio expressions of material found in the natural world, integrated into sound designs and physical and non-physical ecologies [38]. Here my audio-portraits function as a social creation existing inside a complex social network [39] and these works function as a form of "sonic resistance" against colonial practices [32]. In composite, the audio-portraits contribute to Cox and Warner's 'new sonic landscape' where they may be seen as revealing a rich ontology of sound [40].

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[3] Kōrero – "to speak" [28, p. 136].
[4] Karanga – "to call or summon" [29, p. 98].
[5] Oro – "sound" [29, p. 242].

[6] "Mana Wahine theory is a Kaupapa Māori theory that is dedicated to the affirmation of Māori women within Māori society, within whānau, hapū and iwi" [9, p. ix].

2.2 Sound Technologies

Within the development of audio sketches, audio drafts and refining hypothesis testing, immersive and binaural sound technologies have provided a system to create an embodied sensory sonic experience of an audio portrait. By employing binaural and immersive sound technologies in the design of the audio-portraits, I was able to create an immersive spatially sonic experience. The interpretation of each wahine within this space emerged through techniques that simulated intimate hearing cues. These binaural sound technologies included mono, stereo, binaural and ambeo audio data capture and the utilization of Logic Pro X and Pro Tools HD with Facebook 360 (for the arrangement and mixing of specific features).

The audio portraits are constructed in a sonic 360 space. This space may be understood as immersive. By this I mean when experiencing these portraits, one moves beyond the experience of stereo listening to a state where sound moves around and through the body. The term immersive sound relates to spatial sound quality that produces a lifelike sense of being immersed in the presence of people or environments. Sound is localized at various distances from the listener [41]. This orchestration requires audio material to be positioned within a 360-surround sound sphere environment,[7] which can enable us to listen 'within' rather than 'to' sound, such that we experience a sense of sound immersion. When we are immersed in sound, spatial distances may be experienced above, below, adjacent to, or moving through the listener's body [5].

Roginska and Geluso [42] describe binaural sound as two-channel sound that enters a listener's left and right ears at the same time.[8] Such sound has been filtered by a combination of time, intensity and spectral cues and is intended to mimic human localization perceptions. As Møller [43] notes, "The input to the hearing consists of two signals: sound pressures at each of the eardrums. If these are recorded in the ears of a listener and reproduced exactly as they were, then the complete auditive experience is assumed to be reproduced correctly" (p. 171). This type of audio recording attempts to "accurately copy the way in which humans perceive sound, ensuring that sound waves reaching the head undergo the same transmission on their way to the ear canals" (p. 172). Binaural sound is generally reproduced and experienced through headphones but can also be simulated through speaker systems.

2.2.1. Field recording and data gathering

A variety of recording devices for capturing ambient, ecological and atmospheric data, alongside human vocalizations, such as interviews, singing, humming and breathing were utilized. Sound data also included capturing the sounds of home life, the sounds of cultural significant environments such as the sounds around marae *(ancestral tribal meeting grounds)* which included awa *(river or lake),* wind, trees, insects, birds and other ambient life forms. The sound recording equipment included the Sennheiser ambeo VR microphone, the Neumann KU100 dummyhead, the Sennheiser MKE600 directional microphone and the Aquarian H1a hydrophone. The Zoom F8 field recorder provided 8 inputs which provided a way to record all these microphones at once when necessary.

3. REFLECTIVE PRACTICE

Reflective practice as a research methodology was developed by Donald Schön between 1983 and 1987, and in the development and creation of the audio portraits, it functions as a means to refine thinking inside a process of iterative experimentation. The first Schön calls an "exploratory experiment*"* [11, pp. 141–149]. This is when an action or series of actions is taken with the purpose of seeing what emerges. This form of experiment tends to occur after data gathering (in my cases kanohi ki te kanohi *(face to face)* and ambient environmental recordings) when initial 'audio sketches' are generated as a way of exploring potentials within a broad understanding and interpretation of the subject of the inquiry.

The second form of experiment Schön defines as "move-testing" [11, pp. 146–147], which involve an action that is undertaken in a deliberate way to make a specific change. Such moves are considered in terms of the whole and after critical reflection; they are either negated or developed into a more sophisticated text. This form of testing or 'audio-drafting' was used while I was editing the audio-portraits, and in the development of spatial immersive nuances of sound within the design.

Schön also posits a third type of experiment that he describes as "hypothesis-testing" [11, pp. 143–144]. Scrivener [44, p. 6] suggests that such an experiment, "succeeds when it reflects an intended discrimination among competing hypotheses." This type of experiment is evidenced in instances where several possible versions of the same audio-portrait are refined. These potential approaches are then analyzed, compared and refined in pursuit of the most effective interpretation of the subject's identity.

Within a process of reflective practice, I can trace the iterative development of my portraiture through three forms of experiment:

- Audio-sketching (where the researcher tests in a series of audio 'thumbnail sketches' to see what might be discovered) [Schön's exploratory testing]

- Audio-drafting (where thinking within a work is iteratively developed and trialed) [Schön's move testing]

- Refined hypothesis testing (where advanced experiments are compared and evaluated before one is rendered as a completed portrait) [Schön's hypothesis testing].

Although these three forms of experimentation may appear to offer a seemingly objective, delineated process, this

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[7] This sound sphere environment is created using Pro Tools HD and Facebook360 Spatial.

[8] The binaural microphones used to capture such recordings are referred to as a dummy head.

is often not the case. I do not always progress thinking in a purely linear fashion. For example, it is quite common for me to respond to reflection on a hypothesis or audio-draft by returning to a process of audio-sketching to explore and broaden the range of considerations or audio within a portrait.

The concept of reflective practice is not new. In addition to Schön; Boud, Keogh and Walker [45] observed that reflection inside and through practice, can be part of the way an individual uses experiences to lead into to new conceptual perspectives or understandings. McClure [46, p. 3) argues that "reflection is a complex concept that has defied consensus of definition although some commonalities exist". These shared features she suggests are the centrality of the self whose problem-solving abilities are triggered by questioning "actions, values and beliefs".

Inside my research processes I engage with two distinct forms of reflection: 'Reflection *in* action' and 'Reflection *on* action'. Reflection *in* action occurs whilst working *inside* a problem that is being addressed, (in what Schön calls the 'action-present'). Høyrup and Elkjaer see such reflection as "a discursive way of creating a space for focusing on problematic situations and of holding them for consideration without premature rush to judgment" [46, p. 23]. In such a state, I reflect on thinking as it emerges through the process of embodied practice. Here, I often draw on tacit knowing and thinking that may not be verbalized.

Conversely, reflection *on* action occurs *after* an experiment, when decisions have become manifest. Such reflection is consciously and critically undertaken, it is evaluative and I often use it as a process for gaining a more dispassionate and articulable overview of my decisions.

In both forms of reflection, I engage in a process similar to that described by Ings [48, p. 80] that involves a

> complex level of analysis and synthesis within emerging bodies of data. Within this, [I] continuously investigate potential patterns, parallels and associations within the information, and from this, [I] project new questions back into the project.

This kind of processing and analysis Ings argues is, "subjectively reflective and transactional" and this subjectivity is intimately connected to my cultural values, feelings and experiences. I hear sound, then I think and 'feel' how a portrait might be developed. Conscious and unconscious processes operate co-exist inside this transactional environment, where I communicate with the emerging data and it talks back to me. Inside this process, I draw together what is imagined with what can become evidenced. Scrivener [44, p. 7] in describing this process says:

> there is a recognition that the creator's interest is in trans-forming the situation (i.e. psychological, emotional and created) to something better (e.g., equilibrium between intention and realisation).

4. CREATIVE PROCESS, SYNTHESIS, IDEATION AND FLOW

The development and creation of audio portraits involves the creative synthesis and processing of audio recorded data. Data synthesis utilizes three broad methods; immersion, iterative development and critical review. Because immersion and flow permeate the entire creative process, it is useful before discussing the actual 'methods' employed in the iterative development of the portraits, to consider these two states of being and thinking.

4.1 Immersion

Immersion refers to a process of indwelling or entering an inquiry in a manner where the question and environment are internalized [49, 50, 51]. Once data is collected, I draw it into myself and contemplate its potential. In this process I dwell in a spiritual dimension that supports my connection to wairua and mauri, as well as my internalized creative process. Pere describes this as "a dimension internalized within a person from conception – should the seed of human life emanated from Io, the supreme supernatural influence" [52, pp. 13–14].

According to Douglass and Moustakas [49] argue immersion allows for an intensive and comprehensive understanding of a particular moment or experience. In this sense, they describe immersion as a particular state of mind where the researcher becomes integrated with the research problem in an auto-centric mode, where aspects of the researcher's 'being' are centered on the theme investigated. They suggest that in this state "vague and formless wanderings are characteristic in the beginning, but a growing sense of meaning and direction emerges as the perceptions and understandings of the researcher grow and the parameters of the problem are recognised" (p. 47). They also argue that, for immersion to operate productively, the researcher "must stay in touch with the innumerable perceptions and awareness that are purely [her] own".

4.2 Creative Process-Flow

Although a process of immersion enables me to draw correlations between data and the self, the act of creative synthesis is distinguished by a pronounced sense of flow that constitutes a forward momentum in creative thinking. Csikszentmihalyi [53, 54] has discussed such 'flow' as:

> our experience of optimal fulfilment and engagement. Flow, whether in creative arts, athletic competition, engaging work, or spiritual practice, is a deep and uniquely human motivation to excel, exceed, and triumph over limitation. [54, p. 266]

He sees creative flow as a unified and coordinated approach where "attention becomes completely absorbed into the stimulus field defined by the activity" (p. 239). This state of complete involvement permeates my artistic process. It is, "an intense experiential intricacy, weaving moment by moment the focus and attention to the person's fullest capacity so as to create (p. 239). I experience flow

as spontaneous and effortless, yet paradoxically it requires an immense amount of concentration. When in a flow, I am completely engaged with artistic creation, everything else becomes peripheral. In this state, the world of the emerging portrait becomes my world; I possess and am possessed by the process of creating, experimenting with, and evaluating something that is emerging from the undefined into the defined. In maintaining this autotelic state[9] I am careful to isolate myself from distraction, I lose a sense of time and the deeper I am immersed, the more momentum I achieve.

5. SKETCHING, DRAFTING AND REFINING

From a state of immersion, moving outward into a process of flow, the iterative development of my audio-portraiture passes through three forms of experimentation: audio-sketching, audio-drafting and refined hypothesis testing.

5.1 Audio Sketching

Audio-sketching is a form of initial experimentation where I create thumbnail sonic sketches using audio recordings and archived sound. So, an audio-sketch may be likened to a thumbnail sketch or a rapid assembly to see what I might find. In this exploratory approach, I listen to the kōrero of each wahine and I look for what expresses her understandings of identity. I also try to discern what is important to her socially and politically. Here, I am attentive to nuances of her mauri and wairua, as they surface through her kōrero, her breath, her humming, her singing, her laughter and the environmental and ambient sounds that surround her. I also draw on music and archival material that she has composed. These are interwoven in rapid assemblies that are initial responses to the question 'What is the essence of this woman?'.

When developing audio-sketches I will sometimes explore the potential of taonga puoro *(traditional Māori instrumentation)* such as the pūtōrino and the kōauau, as a way of complementing or 'speaking with' the each wahine, her whakaaro and kōrero. Taonga puoro can also reflect a connection to her whenua *(land)*.

Throughout the audio sketching process, I trial synthesized samples sounds from the Logic Pro X sound bank, or other media. I may also embed reflective expressions of what I have experienced in small compositions of my own guitar, piano or synthesizer and sampler playing.

Audio-sketches are arranged and rearranged in a process of 'listening-experimenting-listening' to produce quick compilations that test the potential of diverse sound arrangements and emphasizes. These experiments are normally less than two minutes in duration and are utilized as reflections, although some may expand into audio-drafts, which are more substantial sound arrangements. After listening to an audio sketch, I reflect on what it sounds and feels like. At this point, I either choose to preserve or delete a composition or retain parts of it [5].

Please see example of audio sketch of Moana Maniapoto and the end of this paper.

5.2 Audio Drafting

An audio-draft, as distinct from an audio sketch, may be compared to the manner in which a drawing or 'study' may be differentiated from a rapid pencil sketch. An audio-draft is essentially a deeper orchestration of elements that involves a critically expanded and orchestrated palette of audio material.[10] In constructing an audio-draft an extended amount of time is spent designing and critiquing. The experiment therefore engages a more sophisticated level of syntheses and refinement. Before embarking on an audio-draft, I immersed myself in initial sketches, listening to the nuances of voice, narrative and musical soundscapes. I did this to consider how combinations of sound have conveyed certain emotions or captured an expression of mauri or wairua. I then rearranged these sounds; adding, subtracting, elongating or shortening elements. Although I continued to use Logic Pro X, I introduced sound effects or plugins to experiment with reverb, delay (echo) and equalization (EQ). I also utilized Pro Tools HD for experimental mixing in a 3D audio workflow. When audio-drafting, I also experimented with the positioning of various sounds within 360 sound spheres. I listened back on headphones to hear how these locations of sound might create an immersive, evocative audio representation of the wahine. These 360 immersive sound spheres are created and reworked through a process of move testing, until I think, feel and hear that I have created a resonant interpretation [5].

With audio-drafts I am pursuing the explicit and esoteric nature of each wahine. As an audio-portrait begins to evolve, it develops a mauri of its own. Through deep listening, sound arrangement, sound creation, editing and mixing processes, I responded to this mauri … trying to acoustically draw it into an audio form [5]. On a non-esoteric level, this process may be likened to Schön's subjective transactional relationship [11] because the audio-portrait talks to me and in so doing, it is shaped and developed into more refined form. Here, I am in deep and sustained conversation with the portrait.

Please see example of audio draft of Moana Maniapoto and the end of this paper.

5.3 Hypothesis Testing: Finalizing Audio Portraits

The final form of experimentation is similar to Schön's 'Hypothesis testing'. This type of testing is used to "effect an intended discrimination among competing hypotheses" [11, p. 146]. In my creative process, it is used to compare the qualities and potentials of more than one refined version of the portrait of each wahine.

Hypothesis testing experiments are considerably more technically advanced than audio-drafts. Developing hypotheses of audio-portraits requires sound mixing in Pro Tools | HD in a 3D spatial audio work-flow environment

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utilizing Facebook360 spatial workstation plugin. The Facebook360 spatial workstation plugin within Pro Tools HD allows me to place a sound source in a 3D space that includes the X and Y axis (width and height). Some of the other audio sources were recorded both in mono and stereo with directional and binaural microphones. phones.

The final iteration can take up to several days of remixing, experimenting, and placing audio sources into spatial realms. This process of 3D sound mixing illuminates and enhances the whakaaro *(thinking)* and kōrero *(talking, speaking)* of each wāhine. It also refines timbre, dynamics and texture. When encountering a portrait in a 3D audio environment, the listener experiences an immersive sonic representation. We hear breathing next to our ear, traffic driving through our body and the intimacy of laugher. Here I am concerned with a holistic presence, the essence of being and sonic placement such that the portrait plays inside the listener.

6. THE AUDIO PORTRAITS OF WĀHINE MĀORI

The audio-portraits depict three wahine Māori for whom music is a central part of their being. Moana Maniapoto, Ramon Te Wake and Dr Te Rita Bernadette Papesch come from very different worlds that they navigate in distinctive ways. However, they are all connected by a central thread; these are Māori women for whom Mātauranga Māori is a way of knowing and understanding everything visible and invisible that exists in the universe. These portraits are an assertion of mana wahine and they exist as distinctly Māori expressions.

The portrait is composed entirely of sonic elements. Thus, sound becomes the artist's palette with the sound design becoming the compositional experience and canvas. A listener's experience is such that they hear, feel and sense the essence of the wāhine in an audio-portrait that is composed within a 360-sound environment of simultaneous sound cues. Each portrait is between five and seven minutes in duration, each should be played with headphones of best quality and preferably in a darkened space.

Provided here are the audio sketch, audio draft, hypothesis test and final audio portrait of Moana Maniapoto. In addition are the final audio portraits of Dr Te Rita Bernadette Papesch and Ramon te Wake.

Moana Maniapoto
Iwi (Tribal) affiliations: Ngāti Tuwharetoa, Tūhourangi, Ngāti Pikiao

Audio sketch:
https://soundcloud.com/maree-sheehan-1/moana-maniapoto-tahi-audio-sketch1/s-9YPqL?si=39209397b1264b538e44e9a3874590d4

Audio draft:
https://soundcloud.com/maree-sheehan-1/moana-maniapoto-audio-portrait-draft-1/s-zPgu7?si=6d11652d572a422d84707ea34bc4cee1

Hypothesis test 1:
https://soundcloud.com/maree-sheehan-1/moana-maniapoto-hypothesis-test-audio-portrait-draft-1/s-TwUvd?si=4578cbc7fe4f4bcc825e3032fa66a397

Hypothesis test 2:
https://soundcloud.com/maree-sheehan-1/moana-maniapoto-audio-hypothesis-test-2-comparative-final/s-0PJXu?si=2bacde5c19184964a20c178b19eb19c5

Final audio portrait:
https://soundcloud.com/maree-sheehan-1/moana-maniapoto-sonic-portrait/s-99LJU?si=19acb04c4b404352b857954be8411f05

Dr Te Rita Bernadette Papesch
Iwi (Tribal) affiliations: Ngāti Apapkura, Ngāti Maniapoto, Waikato, Ngāti Porou

Final audio portrait:
https://soundcloud.com/maree-sheehan-1/te-rita-papesch-audio-portraiture-final/s-eMzpS?si=e68f17317756406ab50ac01a924041ba

Ramon Te Wake
Iwi (Tribal) affiliations: Te Rarawa, Ngāti Whatua

Final audio portrait:
https://soundcloud.com/maree-sheehan-1/ramon-te-wake-final-audio-portrait/s-gY8bK?si=228823e437094bcebe7a121c2dba50ab

This paper provides an understanding of my creative processes of reflective practice, iterative development of audio portraiture portraiture through three forms of experiments, audio-sketching, audio-drafting and refined hypothesis testing.

The creative and analytic procedures (in the interpretation of the 'data' provided by the protagonists of the audio portraits) are further analyzed and understood in my full PhD thesis which can be found in the references. Furthermore, the specifics of the spatialization, immersive and binaural practices and its contribution to the audio portraits are discussed.

7. CONCLUSIONS

Employing a Kaupapa Māori paradigm has provided a useful research orientation that utilizes familiar cultural values. These values have proven effective because I am a Māori woman working with other Māori women, but at the same time, my research draws upon the knowledge of non-Māori contributors. Tikanga has provided protocols and processes that support Māori values in research. Of these

values, manaakitanga[11] has been a guiding light, orienting the manner, in which I have developed relationships with each wāhine and her whānau *(family)*. This value was extended into the respectful and appreciative way.

In the audio portraits, space is not only physical or chronological, it is also esoteric. Because these are portraits of three unique Māori women, there is no attempt to separate the spiritual and secular worlds [55, 56, 57, 58]. Accordingly, I sought to depict in the sonic design of the portraits, the wairua of the wahine. The expression of wairua through binaural sound cues required sensitive negotiations between sound sources, their spatial positioning and the listener's perception.

An audio-portrait can be experienced as having mauri that is distinct from a depiction of wairua. The mauri is the essential living vibration of the work; the essence of what reaches out to the life force of the listener and calls it into an intimate relationship. This life force is expressed through the blending of sound frequencies that move vibrationally. This vibration creates a movement, which can be likened to a tidal ebb and flow.

A reflective practice approach provided a framework that was integral for both iterative development and diverse forms of thinking and rethinking. The three forms of experimentation: sketching, drafting and refining the portraits (through hypothesis testing), extended the way I have worked as a musician in the past. They enabled me to be more interrogative because they elevated the importance of time, risk taking and critical reflection. The adoption of an artistic paradigm meant that sound technological knowledge operated in a highly creative arena. Given that many of the emerging sound technologies had not been utilized in art practice, the research opened up new pathways and pushed boundaries that suggest rich and exciting potentials for future applications.

Given that portraiture of wāhine has remained largely confined to concerns with pictorial imagery, I demonstrate how representations might artistically draw on the potentials of a rich spectrum of purely aural modes that are integral to Māori ways of expressing knowledge and identity.

Acknowledgments

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