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Medicinal Use of Native Plant Life in New Zealand: Analyzing Rongoa Maori and Western Science Interactions

Use of native plant life is a topic of major concern for Aotearoa New Zealand, a nation of significant biodiversity and environmental culture. While certain native plants have been used or commercialized in western medicine, much of the medicinal use of native New Zealand plants has historically and continues to be practiced by Maori in the form of rongoa Maori, traditional Maori healing. Rongoa Maori is a complex, holistic approach to healing. There is a focus on physical, mental, and spiritual components to health. Western medicine often ignores spiritual and, to a certain extent, mental intricacies of health that can be vital to certain groups of people. Finding a working ground between western and indigenous knowledge bases regarding human health is vital to create culturally and financially accessible healthcare for all citizens in Aotearoa. In addition, cooperation of the two sectors has potential to deepen the general understanding of human health. Indigenous knowledge and western science regarding medicinal plant use can be used collaboratively to create a more holistic knowledge base and capacity for healing when allowed to occupy the same spaces. This report will analyze the methodology of my research and outline ethical research practices, offer information on the use of native plant life in rongoa Maori, provide data on the chemical composition of these plants, and discuss western and indigenous knowledge collaboration in the form of policy and proposals for reform. The plants discussed in this report will be limited to harakeke (*Phormium tenax*), kawakawa (*Macropiper excelsum*), koromiko (*Hebe salicifolia*), and manuka (*Leptospermum scoparium/ericoides*) to submit a more thorough analysis.

Section I: Methodology and Research Ethic

To engage with Maori knowledge as a non-indigenous outsider, firstly the role of knowledge in the Maori worldview must be explored. In this mindset knowledge resides in the body, meaning a person can actually become a vessel of knowledge. As a result, there is a strong tradition of orally passed down knowledge from one generation to the next and wisdom of ancestors is considered crucial to the community.[2] Knowledge is revered as an understanding about the world, instead of a means to build new knowledge. In the Maori worldview, knowledge holds a more intrinsic value. It is important to know the place one is living in, not as a means to transfer that expertise to a different field or use, but to become more aware. Consciousness is its own reward. Knowing the world becomes synonymous to identifying with the world.[2] Therefore, knowledge and understanding are achieved through relationships.

Wananga is the closest word Maori have for the creation of knowledge. According to Te Ahukaramu Charles Royal of the Ministry of Business, Innovation, and Employment Science Board, former Director of Graduate Studies and Research at Te Wananga –Raukawa Otaki and Professor of Indigenous Development at the University of Auckland, the purpose of wananga is to activate an individual's powers, their mana atua. These powers are qualities or energies that proceed through a person to make them one with the natural world.[2] Thus, location, time, and topic all become immensely important in the process of wananga because the experience goes beyond the mind. The topic being discussed needs to be consistent with the location because, in this worldview, locations are not considered neutral. The time of the wananga process also needs to be appropriate for the topic. Further than being in cohesion with time and place, the topic must be relevant to modern needs, the community, and the ability of the wananga participants. Experiences of participants are significant in this setting, allowing them to speak because of

connection and relationship to the topic, not because they simply think or know they are correct. Memory forms the basis of knowledge of the past and conscious awareness, creating a bond with that which is being discussed. Encounters with the world occur through the body, not just the mind. In *Indigenous Ways of Knowing* Te Ahukaramu Charles Royal states, "Overall the purpose of this way of creating knowledge is to bring humankind into greater alignment, awareness, sensitivity and relationship with the natural world environments in which we dwell" (n.p.).[2] Abilities to relate and be sensitive to one's surroundings are valued as traits and intelligence. One can use the same framework to know the natural world as they use to know another human. It is a complete comprehensive worldview.

Before developing a methodology that is aware of the Maori worldview, Maori ethical research frameworks must also be examined. The Health Research Council of New Zealand released a set of guidelines for Maori research, *Te Ara Tika: Guidelines for Maori Research Ethics: A Framework for Researchers and Ethics Committee Members*.[1] The guidelines outline ways to address four major areas of concern: tika, manaakitanga, whakapapa, and mana. Tika, or research design, can be made more inclusive of Maori by mainstreaming research and Maori having a greater level of participation in research projects, including leading them. Mainstreaming research allows Maori to be research participants in projects that may or may not have a direct effect on Maori specifically. Researchers engaging this method are expected to protect the rights of Maori. Maori-centered research involves Maori at a greater level, being on the research team. Kaupapa Maori creates partnerships and responsibilities in the project with Maori; Maori are originators and leaders of the research. Manaakitanga, or cultural and social responsibility, can be acknowledged through cultural sensitivity, cultural safety, and mahaki. Cultural sensitivity recognizes people's inherent dignity, calling people to act in caring ways to

one another. Cultural safety entails Maori participating in the establishment of goals for the project, ensuring their benefit. Mahaki are partnerships enhanced by a high level of faith and trust between parties. Whakapapa, or relationships and genealogy, can be observed through consultation, engagement, and kaitiaki. Consultation involved a constructive critique of a proposed project and its potential impact on Maori. Engagement allows Maori to participate in the research and derive tangible benefits. Kaitiakitanga, the responsibility of guardianship, empowers Maori to take on a stewardship position in the project. Mana, or justice and equity, can be divided into three categories: mana tangata, mana whenua, and mana whakahaere. Mana tangata refers to an individual choice to participate where the participants are informed of risks. Mana whenua entails iwi being recognized as the regional authority in discerning the benefits and decision making involving resource management. Mana whakahaere indicates the sharing of control in research relationships with iwi or another relevant Maori community who take the responsibility for the project's outcomes. These four areas of concern provide a foundation for researchers and the Health Research Council of New Zealand's guidelines offer a wide range of options for researchers to affect each concern to varying degrees.

Guidelines similar to those published by the Health Research Council of New Zealand have been released by other sources offering ethical guidance to researchers. Fiona Cram's *Tona Tink, Tona Pono: The Validity and Integrity of Maori Research* outlines seven practices that aligned with Maori research ethics.[3] Her first two practices are respect for others and meeting with people face-to-face. When seeking knowledge from someone, one should show the initiative and desire to meet with that person. They should not be subject to whatever form of communication seems most convenient to modern times because often the form that predominates is impersonal and lacks the need to form relationships in the pursuit of knowledge,

a core concept of the Maori worldview. Her next principle is to create a basis for speaking by first looking and listening. It is vital to learn without speaking first so that one does not impose their own bias upon themselves. It is much easier to have an open heart and an open mind when one's mouth is closed. Her next three principles discuss involving the community in the research and being culturally safe: protection of the community takes precedent over any research. The last practice is the sharing of new knowledge for the benefit of the community involved. When coming into a space, researchers need to offer something in return for the benefit they will inevitably receive upon finishing their work. It is unfair and unjust to impose oneself on a community for purely personal gain. Instead, the community should be regarded as having just as much right to any benefits reaped as the researcher.

Due to the delicate nature of research involving indigenous peoples, often non-indigenous people avoid the topic completely. Many Pakeha, or non-Maori, find no place to participate in Maori research due to the popular Maori-centered research philosophy. Maori-centered research, or research by Maori and for Maori, hugely benefits Maori and is based on an in-depth understanding of Maori values. If Pakeha are involved, they are subject to strict guidelines. When dealing with topics in which Maori are the only stakeholders, or the primary stakeholders, this philosophy is more than adequate. However, few guidelines exist for how to research Maori in the context of the larger population. This can result in Maori being excluded from research involving the general population. Perhaps education in cultural safety for researchers, rather than the exclusion of Maori from studies of the general population, is a more inclusive and accurate practice. Excluding Maori from the population of New Zealand distorts the data, making it non-reflective of the true population. Furthermore, it excludes Maori from the benefits of research on the general population. In "Pakeha Paralysis: Cultural Safety For Those Researching the General

Population of Aotearoa", Martin Tolich suggests implementing guidelines for cultural safety in research similar to those used by the Nursing Council of New Zealand.[4] If the nursing guidelines were adhered to completely, they would state, "[Cultural safety is] the effective nursing [research] of a person/family from another culture by a nurse [researcher] who has undertaken a process of reflection on own cultural identity and recognizes the impact of the nurse's [researcher's] culture on own nursing practice [research methods]"(2).[4] These guidelines would force Pakeha researchers to examine their own realities that they bring to every research encounter and be flexible when dealing with people who are different from themselves. It would also make them evaluate the historical, political, and social implications of their research.

Because my research discusses the interactions between western and Maori knowledge, I will use the Nursing Council of New Zealand Guidelines for Cultural Safety modified for research practices to frame my methodology. As a white, American engineering undergraduate, I have a background in western science. This background makes my default engagement with knowledge and research processes unreflective of the Maori worldview. I acknowledge this deficiency in my work. I do not claim to fully understand the intricacies of the Maori worldview or rongoa Maori. Instead, I aim to create connections from my own background with the knowledge I seek and present. Information regarding rongoa Maori has been in the public domain for decades; although, it may have originally been made public without Maori consent. This was a major failure of past researchers. I will not publish any sensitive knowledge that is not already public that I may encounter. By recognizing my own reality and place in the research, I also recognize the importance of thoughtfulness when interacting with Maori knowledge in this report.

Section II: Use of Native Plant Life in Rongoa Maori

Rongoa Maori can be divided into five categories: karakia and ritenga, mirimiri, water, minor surgical procedures, and rakau rongoa. Karakia and ritenga refer to incantations and rituals. Mirimiri is a form of massage. Often it is used to relieve sore joints and limbs; however, it is occasionally used to force spirits (kehua) from a patient's body. Water is used during cleansing rituals and for treating sickness. This water comes from springs or clear, natural streams. Minor surgical procedures practiced in rongoa Maori include blood-letting and small incisions to relieve swelling or drain infections. Rakau rongoa, often simply referred to as rongoa, indicates plant medicines. Rakau rongoa is believed to not be effective on its own. A spiritual component, often in the form of karakia, needs to be present.[17] This spiritual component can be described in terms of tapu. Tapu is commonly defined as spirituality, but has secular and social intricacies as well. It means off-limits. According to High Court Justice Joe Williams, former Chief Judge of the Maori Land Court, historically the concept of tapu has been used to prevent sickness and enforce rules. For example, toilets were deemed tapu for the protection of the community.[22] They were off-limits apart from their designated purpose and placed further away from other living areas to prevent the spread of germs. Noa is the opposite of tapu, describing a state of relaxed access.[17] There is a drive to achieve a balance between noa and tapu, denoted as utu. Rongoa Maori operates in this context.

Before the colonization of Aotearoa, Maori viewed science and religion as the same entity. Due to the lack of distinction between the two, illnesses were believed to be caused by "supernatural sources".[9] Modernly, illnesses are still seen as multi-layered. Often a sickness is conceived as a breach of tapu or other spiritual ailment in conjunction with physical symptoms. Fiona Cram, Linda Smith, and Wayne Johnstone conducted a study in which 28 self-identified Maori from urban, marae-based healthcare services were asked to discuss their views and

experiences with healing and medicine.[11] 12 major themes arose from the participants. One of which was wairua (spirit). Wairua was the most widely mentioned component of Maori health. It was presented as key to understanding illness and health because it allows "access" to the whole person. Other major themes focused on holistic views of health and community health. It was expressed that the interconnectedness of physical, spiritual, and mental health was foundational to healing. This interconnectedness is at the core of rongoa Maori.

Practitioners of rongoa Maori are referred to as tohunga. Tohunga do not have specific training programs or institutions. Instead, most learn from elders passing down information and apprenticeships with practicing tohunga.[7] They are revered as experts in their field by their communities and either work alone or in clinics, if under contract. Treatments vary among tohunga, as they are independent to tribes, local plants, and specific needs of the people.[*] However, there are commonalities amongst all practitioners of rongoa Maori, such as the lack of distinction between herbal medicines and spiritual healing.[9] Both are seen as parts of a complete treatment and significantly less effective individually. For such reasons, tohunga must observe appropriate tikanga (customs and rites) when collecting, preparing, and storing rongoa. Tohunga use many different native plants in their practices. To offer a more in-depth analysis, the scope of this report has been limited to four major plants with multiple healing capabilities: harakeke, kawakawa, koromiko, and manuka.

Harakeke, or New Zealand flax, is widely used by tohunga in various forms. It is abundant throughout Aotearoa, showing a particular affinity for lowland swaps. The leaves and roots in a poultice are used to treat wounds, abscesses, swelling, and chilblains. The juice of the

[*] Information regarding the regulation of tohunga practices and treatments can be found in Section IV.

root is used for ringworm, skin irritations, flatulence, and toothache. Crushed flax root is a common remedy for constipation, while boiled flax root treats diarrhea and dysentery. The gum of harakeke can also be used for the treatment of ringworm, toothache, and wounds, in addition to rheumatic pain, burns, and sunburn. The juice of the leaves has been used to treat gonorrhea. Whole leaves can be utilized as bandages, stiches, and splints.[7] When boiled for three hours together and drunk after delivery, flax root combined with thistle root, plantain weed, tutumako, and dock root, helps to expel the placenta. Alternatively, tataramoa and flax can be used to cause an abortion.[9] Flax leaves are also used by some tohunga to determine the health of the patient and attempt to persuade any evil presences in the body to leave. To do this, strips of flax are bound to the patient's limbs and body as the "hirihiri atua" karakia is used to expel the bad presence.[9]

Kawakawa, also known as the pepper tree, is common in treatments on the North Island due to its availability. It has heart shaped leaves and an edible orange fruit.[12] The leaves can be chewed to relieve toothache, swelling in the face, and stimulate the kidneys and bowels. When boiled, the leaves are used to treat boils, paipai (similar to ringworm), gonorrhea, syphilis, arthritis, and bruises. They can also be used to purify blood. The smoke from the leaves and branches is an additional remedy for gonorrhea, syphilis, and paipai. This smoke can ease chest congestion as well. Similar to harakeke, the roots can be chewed for dysentery and whole leaves can act as bandages.[14]

Koromiko, or hebe, is a low spreading shrub with many differently colored flowers. It grows best in lower levels of rich soil and can be found throughout the North Island.[12] A poultice of its leaves is used to treat ulcers, venereal disease, and bleeding after childbirth. Its leaves can also be boiled and used as a throat gargle. When chewed, the leaves treat diarrhea, dysentery, and

promote hunger. Additionally, the shoots can be chewed to relieve stomach pains.[7,13] An infusion of the leaf acts as a power astringent. The leaves may also be pressed between the legs and into the vagina if a patient experiences hemorrhaging during pregnancy.[9]

Manuka, also referred to as tea tree, can be found throughout New Zealand in red and white varieties. White manuka grows higher with smaller leaves and flowers. White manuka is preferred by most Maori healers.[9] Its seed pods can be crushed and dried to place over an open wound to encourage healing and dry it out. Liquid extracted from boiled manuka seeds can be applied for bruising and inflammation. When this liquid is taken orally, it is used to treat diarrhea, dysentery, and stomachaches. Alternatively, boiled manuka bark taken orally is used to treat constipation. Boiled leaves and seed pods that have been crushed and the liquid taken by mouth ease kidney, urinary, and rheumatism complaints.[14] To relieve cold symptoms and congestion, some tohunga have patients inhale the steam from boiling leaves and seed pods. Inner bark of manuka has been used as an oral sedative. When crushed and put in hot water, the inner bark may also treat breast congestion in pregnant women.[9]

Section III: Chemical Composition of Plants Used in Rongoa Maori

To better understand the medicinal uses of harakeke, kawakawa, koromiko, and manuka from multiple perspectives their chemical compositions will be evaluated. Due to the nature of this section, it will be void of the spiritual components of rongoa Maori. Tapu is of special importance in rongoa Maori and an integral piece of any treatment. However, this section aims to create connections between the western and Maori views of these plants. Unfortunately, western science lacks the ability to cohesively describe spirituality in terms of health. Thus, this section will over a comprehensive overview of the biological makeup of the plants in discussion and their uses in mainstream medicine.

Phormium tenax, or harakeke, contains D-xylose and D-glucuronic acid in its gum, linoleic acid in its seed oil, and cytotoxic cucurbitacins in its leaves. Its rhizomes contain chrysophanol, emodin, dianellidin, and stypandrone.[14] D-xylose ($C_5H_{10}O_5$) is a saccharide excreted by the kidneys.[15,16] It has been used to test for malabsorption in animals.[18] D-glucuronic acid ($C_6H_{10}O_7$) is a sugar acid.[15,16] It is a common building block of proteoglycans and glycoglycerolipids and involved in phase II of the metabolism. Certain strands of it have been used to test for the presence of E-coli.[23] Linoleic acid ($C_{18}H_{32}O_2$) is a poly unsaturated fatty acid.[16] Linoleic acid reduces body fat and improves metabolic variables. Therapy with linoleic acid and gamma linoleic acid reduces ocular surface inflammation and improves dry eye symptoms. When paired with calcium, linoleic acid decreases incidences of pregnancy-induced hypertension (PIH) in pregnant women at high risk. Additionally, it has anti-inflammatory, anti-carcinogenic, anti-atherogenic, anti-diabetic, and body modifying effects in humans. Chrysophanol ($C_{15}H_{10}O_4$) is an anthraquinone and known antimicrobial. It also expresses anti-cancer activity.[18] Emodin ($C_{15}H_{10}O_5$) is another quinone that expresses anti-cancer activity. It is also has anti-inflammatory, antitumor, and neuroprotective effects. Cucurbitacins, dianellidin, and stypandrone offer little insight into the medicinal qualities of this plant.

Macropiper excelsum, or kawakawa, is composed of myristicin and a series of lignans in its leaves and wood.[14] Myristicin ($C_{11}H_{12}O_3$) is closely related to eugenol ($C_{10}H_{12}O_2$), a common dental antiseptic.[15] Myristicin helps ease indigestion. Eugenol is a standard chemical allergen. It has antifungal properties and is used in toothache medicine, dental filling materials, cavity liners for pulp protection, capping materials, temporary cementation of fixed prostheses, impression materials, and endodontic seals. Eugenol is also an anti-inflammatory.

Hebe salicifolia, or koromiko, contains mannitol in its wood.[14] Mannitol ($C_6H_{14}O_6$) is a diuretic and renal diagnostic acid. It can be used to treat kidney failure caused by oliguria, as well as other causes of inadequate renal function. Mannitol is used to promote diuresis before renal failure becomes irreversible, treat cerebral edema, and promote the urinary excretion of toxic substances. Mannitol is classified as a cardiovascular agent, diagnostic agent, bronchial, and kidney function drug.[18]

Leptospermum scoparium, or manuka, contains leptospermone, ursolic acid, ellagic acid, and mannitol. Leptospermone ($C_{15}H_{22}O_4$) has anthelmintic properties and is an insecticide.[14] Ursolic acid ($C_{30}H_{48}O_3$) is a pentacyclic triterpene acid that has anti-tumor effects.[18] Ellagic acid ($C_{14}H_6O_8$) is a phenol antioxidant and investigational drug. It is being studied for treatment of Follicular Lymphoma, brain injury protection for intrauterine growth restricted babies, cardiovascular function improvements for obese adults, and topical treatment of solar lentigines. Most of ellagic acid's therapeutic actions involve antioxidant and anti-proliferative effects.[18]

While the majority of the western usages of the chemicals composing harakeke, kawakawa, koromiko, and manuka do not coincide with their uses in rongoa Maori, rongoa Maori and western medicine are not in complete opposition to one another. Many of the chemicals discussed above are still being investigated for further uses, perhaps some will be aligned with the effects seen when used in rongoa. However, it is vital to note that the discrepancies could easily be attributed to the holistic nature of traditional Maori healing. In rongoa Maori, rakau is not effective by itself. Herbal remedies are merely one part of the treatment and gain strength from their counterparts. Thus, it is not a question of whether the chemicals in native New Zealand plants can be extracted for wide scale medicinal use, but a

question of how Maori and western knowledge can mingle to create a more complete awareness of health.

Section IV: Indigenous and Western Knowledge Collaborations

To fully evaluate collaborations between Maori and western medicinal knowledge bases, it is crucial to first discuss the history of rongoa Maori interactions with the New Zealand government. The Tohunga Suppression Act of 1907 was the first major piece of legislation to directly address tohunga and remained in force until 1962.[7] The act criminalized the use of rongoa Maori if practitioners "profess[ed] or pretended[ed] to their patients that they have supernatural powers"(623, 111) when administrating remedies.[17,21] The use of karakia in rongoa Maori was construed as supernatural. Very few prosecutions and convictions were made under this law: 9 convictions between 1910 and 1919 and one unsuccessful prosecution in 1955.[17] Despite this, the Tohunga Suppression Act still had a substantial effect on rongoa Maori and Maori health by forcing tohunga underground and stigmatizing traditional Maori healing. Often, the act was used as a scapegoat in attempts to delegitimize a person by accusing them of tohungaism when the accuser had a vested interest in their demise. The law did little to actually stop Maori from practicing and using rongoa, but it did undermine iwis' ability to control their own well-being. According to the Wai 262 Tribunal Report, "evidence from claimant witnesses demonstrated a reluctance to pass on cultural knowledge among their own whanau" (620).[17] Thus, while Maori did not cease to seek out tohunga, information on rongoa Maori became more difficult to find in the community as a whole.

Since the repeal of the Tohunga Suppression Act, the government has increased its support of traditional Maori healing. In 1992, Nga Ringa Whakahaere o te Iwi Maori (The National Organization of Maori Traditional Practitioners) was established.[7] While it was not

recognized as the official national body representative of all Maori healers, Nga Ringa Whakahaere did receive government funding as such a national body would. The formation of this body was a conscious decision by Maori healers to be seen as a part of New Zealand health services. The adoption of a public profile was a difficult decision for many after the era of the Tohunga Suppression Act. However, it was decided that the benefits of a national body outweighed concerns of privacy. Nga Ringa Whakahaere was designed to develop standards for the safe and correct practice of rongoa, create standards of excellence for practitioners in training, and develop policies that will enhance the practice of rongoa Maori. In 2007, Te Paepae Matua mo te Rongoa was made the official national body of Maori healers.[17] The collective consists of seven members, one of which is a representative of Nga Ringa Whakahaere. The rest of the body is made up of tohunga, iwi representatives, and administrators. The body is accountable to the Ministry; however, the Ministry's role is only one of support sitting outside the body.

In addition to supporting the national body of Maori healers, the New Zealand government contracts practitioners of rongoa Maori. In 1995, the National Advisory Committee on Core Health and Disability Services recommended that the Regional Health Authorities buy aspects of traditional Maori healing to use in conjunction with primary health services to the Minister of Health. After this recommendation, the Ministry of Health began contracting tohunga for health services.[17] In 2000, this service was further expanded and more rongoa services were contracted. In 1999, the Ministry of Health established ethical guidelines and minimal safety standards for those under contract with support from Nga Ringa Whakahaere and the Health Funding Agency.[19] The *Standards for Traditional Maori Healing* discuss record keeping, patient rights, referral to other health services, training and supervision of staff, and the hygienic and

tikanga-based gathering and preparation of plants for use in herbal remedies. All contracted providers are required to comply with these guidelines.

Rakau rongoa was originally one of the services the government funded in 1995. However, in 2004, rakau rongoa was excluded from Ministry funding.[17] Because the overall funding levels for traditional Maori healing did not decrease, there was little resistance by healers at first. Reasons for the exclusion of herbal remedies from funding were not made publically clear. It has been speculated that the Ministry ceased funding because it lacked the ability to monitor the safety of these remedies and protect consumers. However, this can only be guessed at, as the *Standards for Traditional Maori Healing* require hygienic practices when collecting and preparing plants for rongoa Maori. While the Ministry no longer funds rakau, it does not prohibit its use by contracted tohunga.[17] The lack of funding does most of its damage on a philosophical level. By providing only certain aspects of Maori traditional healing with funds, the Ministry undermines the holistic nature of rongoa. This action potentially shows rakau as less legitimate or important than other aspects of rongoa Maori, negating the benefits of a complete treatment.

Despite lack of funding, rakau rongoa continues to be practiced by contracted and uncontracted tohunga alike. The Medicines Act of 1981 regulates the prescription of medication. Fortunately, herbal remedies that lack scheduled medicines, make no therapeutic claims, and consist of only plant material and water, ethyl alcohol, or other inert substances are excluded from this act.[17] This makes it much easier for tohunga to prescribe rakau to their patients, as the herbal remedies would be subject to rules that could potentially damage the correct practice of rongoa or simply refuse the disbursement of the medications otherwise. In 2003, this exemption was put at risk. Deals began for New Zealand to enter a partnership with Australia to replace the

Medicines Act of 1981 with the Australia New Zealand Therapeutic Products Authority (ANZTPA).[17] It was stated that the herbal remedies of rongoa Maori would also be exempt from this policy; however, Australian officials had already expressed concerns about New Zealand's ability to evaluate the risks and benefits of medicines with biological origins. Since the ANZTPA would result in New Zealanders and Australians making policies regarding medicine for both countries, rongoa Maori would be at risk because half of the policy makers would likely be less informed and less interested in the benefits of traditional Maori healing. Ultimately, the ANZTPA did not come into being. Alternatively, in 2010, the Green and National parties proposed the Natural Health Products Bill that wouldn't require natural products made by tohunga for specific patients to get pre-market product approval.[17] This bill is currently still going through the legislation process.

Rongoa Maori being exempt from certain policies, while convenient for practitioners, is not sufficient. A focus on developing policy specifically for the practice of rongoa Maori in the healthcare system is vital. John Waldon, with the Maori Caucus, developed a checklist for the Public Health Association of New Zealand's development of policy regarding rongoa Maori in 2002. *Advocating Public Health Policy for Maori* stated that effective health policy should "support health gains for Maori, be responsive to Maori needs and expectations, and be analytically sound"(1).[10] These requirements outline the need for health policy to actively support Maori. In 2006, the Ministry of Health released a set of four goals in regards to traditional Maori healing.[17] The goals aimed to improve the quality of rongoa health services, promote safe practices by creating leadership opportunities, increase the size of rongoa services, and plan for research of rongoa activities. Aligned with these goals, New Zealand endorsed the 2007 United Nations Declaration on the Rights of Indigenous Peoples in 2010.[17] The declaration

states that indigenous peoples have a right to their traditional medicines and health practices. While this declaration lacks the ability to actually enforce its implications on its own, it does create a foundation for policy that protects the practice of rongoa and makes it more accessible in the healthcare system.

Increased access to rongoa Maori in mainstream healthcare is in demand. According to the Best Practice Journal, because western medicine is perceived to treat only physical ailments, some Maori prefer traditional healers.[7] They feel western medicine cannot meet all of their needs because it lacks spiritual, family, cultural, and, to an extent, psychological components. Research conducted by Dr. Glenis Mark, of the Health Research Council of New Zealand's fellowship program, found that most Maori with experiences using both rongoa Maori healers and doctors and Maori using solely doctors, wanted an option to receive care from both.[8] The general agreement was that the two forms of care should be given separately, but doctors and rongoa practitioners should collaborate outside of sessions to discuss the patient's health. Dr. Mark states, "Most participants believed that rongoa healing and mainstream healthcare both have their strengths and weaknesses, and that they would receive better healthcare than they do currently if healers and doctors talked with each other about the treatments they were offering"(1).[8] Creating a space where doctors and rongoa healers are encouraged to work together and share ideas has the potential to improve Maori healthcare and facilitate the flow of knowledge across differing cultural and academic spheres.

Maori healers and doctors working together is not a novel idea. In the 1880's, a doctor and local Maori healer both treated the same patient at the same time. The patient had fallen into a boiling pool, leaving both his legs badly burned. There were disputes about who should provide treatment and, eventually, it was decided that the doctor and Maori healer would each

treat one leg. The leg treated by the Maori healer recovered much quicker and with less pain than the other leg.[17] While short lived, this collaboration demonstrates the ability for tohunga and doctors to care for the same patients. If the two healers had actually worked together and discussed their treatment plans with one another, perhaps both legs would've healed with less pain and time. This is the type of relationship that should be strived for: one where western and indigenous healers respect each other and work together when beneficial for the patient.

The main differences between rongoa Maori and western medicine come from the perception of what has caused the illness. Western approaches always resort to the physical, to things a doctor can feel or see. Rongoa approaches allow for a multitude of different causes, some physical and others not. However, doctors' and tohungas' goals are essentially the same: to heal the patient. Professor Mason Durie of Maori Studies at Massey University states, "Whether the unseen force is called a virus or an infringement of tapu may be less important than the subsequent practical application of measures designed to prevent illness or injury"(605).[17] If doctors and healers discuss causation, little may be gained from the experience, but, if they discuss treatment plans, a whole new knowledge base may emerge. Thus treatment plans should be targeted in collaborations between Maori healers and doctors. As Richard Morris states in *Doing Science: The Reality Club*, "Science is a way of understanding the world"(170).[5] That is all science is: a way of understanding. Rongoa is just another way of understanding. They are quite distinct from one another, but not necessarily clashing practices.

Conclusions

Rongoa Maori is currently contracted for use in the New Zealand healthcare system by the Ministry of Health. Many gains in government support of traditional Maori healing are a result of the formation of a national body that represents tohunga, including Nga Ringa

Whakahaere o te Iwi Maori and Te Paepae Matua mo te Rongoa, after the Tohunga Suppression Act was repealed. While the Ministry no longer funds herbal remedies for rongoa, it has not decreased its overall funding for Maori healing services and continues to seek expansion of these services. Increased government support is still necessary to make rongoa Maori more accessible and culturally accepted in mainstream healthcare. To achieve these goals, collaborations between tohunga and doctors regarding treatment plans for patients are vital. Despite that the majority of western usages of the plants discussed in this report do not coincide with their uses in rongoa Maori, rongoa Maori and western medicine are not in complete opposition to one another. The plants discussed are effective in rongoa Maori because they are one component of a larger treatment. The collaborations between doctors and tohunga do not (and should not) need to result in westernizing rongoa by extracting chemicals from native plants or having Pakeha doctors attempting to practice rongoa. Rather, the collaborations would allow for Maori and western knowledge bases to grow and create a more complete perception of health.

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