



Walking Backwards into a Multispecies World: Ethical Considerations from Ethnographic Fieldwork in Biosecurity

Maria Blanca Ayala

University of Canterbury | Te Whare Wānanga o Waitaha
may34@uclive.ac.nz

Abstract

In the Māori world, people move backwards into the future. The past is on the horizon, we can see it, we know it. The future remains uncertain, we must sharpen our senses and proceed with caution. This article contends that a change of perspective is the most powerful tool to identify multiple ethical implications when conducting research in settings characterized by unfolding processes that weave together human interventions and non-human agency. Walking backwards and based on ethnographic fieldwork in Māori lands, scientific laboratories, research nurseries, and healthy and declining forest in the upper North Island of New Zealand, this paper reflects on the ethical issues that arise from meeting in the field with scientists, Indigenous experts, lethal microorganisms, and giant ancient trees, while also considering the evidence of past multispecies encounters and the uncertainty of future ones. Aware that most of the terrestrial biomass remains outside the field of vision of institutional review boards, this article argues for the adoption of a broader conception of ethics, not as a human construct associated with the production of knowledge, but rather as an essential component of all interdependencies that make life possible on Earth.

Keywords

Ethics, Māori, biosecurity, institutional review boards, multispecies research

Tuhinga Whakarāpopoto:

I te ao Māori, ka hīkoi whakamuri, ka anga whakamuri ai tātou ki ngā wā ā mua. Kei te pae tawhiti ngā rā o muri, ka taea e tātou te kite, kua mārama tātou ki tēnā. He whakarangirua ngā rā e heke mai ana. Ko te ara tēna ka whano, kia āta haere tātou. Ko te tikanga o tēnei kōrero kia whakarerekē ai te tirohanga hei taputapu whai mana e tautohu ana i ngā tini hīraunga o ngā tikanga matatika i roto i ngā tūāhua mahi rangahau e whāwhāki ai ana i ngā hātepe e rangaranga ai ana i te mana tangata me te mana o te ao tūroa. Mā te hīkoi whakamuri me te rangahau moroki kei ngā whenua Māori, ngā taiwhanga pūtaiao, ngā whare rangahau whakatipu otaota, ngā ngahere e tū ora pai ana me ngā mea e mate haere ana huri noa i Tāmaki-makau-rau me Te Tai Tokerau, he whakaahuatanga tēnei kōrero mō ngā take tikanga matatika ka puta mai ai i te wā ka tūtaki te tangata ki ngā kaimātai pūtaiao, ngā tohunga o ngā iwi taketake, ngā kaihangā kaupapa here, ngā tāngata hīkoi, ngā moroiti whakawhara me ngā rākau whakahara tawhito. Waihoki, ka whaiwhakaaro i ngā hua e whakahua mai ana i ngā tūtakitakitanga o ngā tini momo ao ora me te āhuetanga kumukumu o ngā momo hei te wā e heke tonu mai ana. E aro noa ana tēnei tuhingaroa ki ngā wāhi e kore e kitea aitia e whakapeke ana i te papatipu o ngā mea koirora i te tirohanga kanohi o ngā rōpu arotake o ngā whare wānanga, ka tono ai nei kia whakawhānui ake te maramatanga i te tikanga matatika, kāore nei i te mea hanga i te tangata e hāngai ana ki te mahi whakaputa mātauranga. Engaringari anō, hei tino wāhanga kē tō tēnā, tō tēnā o ngā taupuhipuhitanga e whakaora ai i te mataora o ngā mea katoa e ora nei ana i te ao whānui.

Introduction

My first encounter with a serial killer wasn't exactly as described by thriller movies. I was about to enter the Waipoua Forest and follow the track that leads to *Te Matua Ngahere*, the Māori name for the oldest living kauri tree, "the grandfather of the forest", estimated to exceed 2,000 years. This short walk wasn't conceived as recreational hiking but as part of an ethnographic project.



Figure 1. Footwear cleaning station at the Waipoua Forest (Te Tai Tokerau/Northland)

Accordingly, I took a deep breath and the smartphone that sometimes substitutes my old-fashioned equipment: notepad, camera, and audio-recorder. I locked the car and opened my senses.

A massive footwear cleaning station covered all possible access to the forest. A large black sign with a yellow-orange and white inscription alerted walkers to the imminent danger using both the colour-code of some venomous creatures and the occidental alphabet: “Kauri Dieback Disease is Killing Kauri”. The verb tense left no doubt about timing: I was about to witness an ongoing crime [Figure one].

Two other walks, “Four Sisters” and “Yakas’ Kauri”, whose names also refer to other exceptional kauri trees, used to have the same starting point. Those tracks, as many others, were indefinitely closed to human access in 2018, in an attempt to prevent the propagation of a disease that spreads by soil movement. Inside the cleaning station, there were additional signs with precise instructions: “Brush. Inspect. Disinfect”. There were also the equipment and substances required to complete the task. The final hinged door displayed one last command: “Stay on the track”. The cleansing ritual must be completed again on the way out.

There is something particularly disturbing about this crime scene. You will never see the microscopic serial killer, *Phytophthora agathidicida*, “the kauri destroyer”, with the naked eye. Along the walk, always from the track, you will probably see some of its victims, standing majestic and impassive after death [Figure two]. You will never know for sure if at each step, after cleaning and disinfecting your shoes, even if walking barefoot, you too are taking part in the killing. Within the aerial-surveyed areas of the Waitākere Ranges (248 kilometres south of the Waipoua Forest), for instance, research agencies have found that 70% of the infections occur along the hiking trails (Hill et al. 2017).



Figure 2. Dead kauri visible from the track that leads to Te Matua Ngahere, at the Waipoua Forest.

The dieback of kauri trees (*Agathis australis*, a species native to Aotearoa/New Zealand) was first described in 1973 after its detection in Aotea/Great Barrier Island (Gadgil 1974), a mass of land situated 50 nautical miles from the wharves of downtown Auckland. On the mainland, the dieback was reported in 2006 in the Waitākere Ranges, about 35 kilometres southwest of central Auckland. After its discovery, and despite the extensive installation of footwear sanitation stations, the disease spread to almost all naturally occurring kauri forests (Barton et al. 2017). Kauri dieback has no known cure and in controlled laboratory tests all seedlings died after infection (Horner and Hough 2014). Following years of exclusive (and unsuccessful) implementation of science-based biosecurity strategies (Lambert et al. 2018), the New Zealand Government decided to institutionalise a combination of science and *mātauranga* Māori (local Indigenous knowledge) as a means to reach a better understanding of the pathogen's life-cycle and the forest ecosystem, and to conceive more efficient biosecurity strategies. In this context, I became interested in the construction of knowledge as a collaborative enterprise involving both *mātauranga* Māori experts and scientists, including Māori researchers.

Early on, I realised that there was more than one biosecurity in place, as a part of the national effort to protect kauri forests. The differences between what “we” know about the forests' decline (depending on whether “we” are a scientific team, a fellowship of Māori elders, or a bunch of scholars reflecting on social processes around biological threats) wasn't as significant as the questions of how we know it or what we do with this knowledge. The ethical issues associated with knowledge production on biosecurity and the appropriateness of the institutional ethical review in multispecies research are the central concerns of this paper.

In the field, it became evident that the more-than-human, even when invisible, represented a significant challenge not only for the scientists and the Indigenous experts working to save an ecologically significant and culturally treasured tree species, or for the ethics committee charged with the evaluation of my multi-site research proposal, but especially for me, an outsider accessing simultaneously Māoridom, the aseptically controlled space of a microbiology lab, and the untamed multisensorial reality of the forest.

What follows is an account of my experience as an ethnographer moving between the static ethics dictated by the academic board and the fluid negotiation around ethical practices required by immersive fieldwork. Informed by the research practices on biosecurity displayed by forest pathologists and *tohunga* Māori (traditional experts), I analyse the ethical implications of multispecies encounters across time and present a more capacious approach towards humans and non-humans. In the final section, I argue for the adoption of a wider conception of ethics, not as a human construct mediated by institutional logics, but rather as a relational practice that governs interactions across all research participants — regardless of their place in the Western taxonomic classification— under one single principle: Cause no harm.

Ethics as an Institutional Process

As in most academic institutions, all research proposals at the University of Canterbury must obtain ethical clearance from one or more specialised boards. Research involving humans, as subjects of experimentation, observation or as sources of verbal data, requires approval from the Human Ethics Committee (HEC). Research involving “non-human higher animals with vertebrae”, requires approval from the Animal Ethics Committee. All other living creatures might be an object of biosecurity policies, but they are not subject to ethical consideration. Finally, research involving Māori people, culturally sensitive material or knowledge, access to Māori sites, sampling of native fauna or flora, or studies that might have an impact on local Indigenous people, must be submitted for consideration to the Ngāi Tahu Consultation and Engagement Group (NTCEG), a specialised team that allows researchers to receive feedback from Māori delegates regarding their projects.

Although consultation with Māori is an institutional requirement and the HEC must be informed about the result of this procedure before granting final approval, both groups work independently, and the review processes conducted by them have little in common.

Everything within the conventional ethics review conducted by the HEC is designed to ensure that the project complies with national and international data protection regulations regarding the use of the information collected during the research. In this sense, it is not surprising to find locally the same extended assumption about the research participant as an “autonomous individual” who must give “informed consent” before becoming an object of study (Dyer and Demeritt 2009; Greenhough and Roe 2011; Bell 2014; Collard 2015). This standard procedure can result in the constrain of both the methodological design and the relationships the ethnographer may develop with their research participants (a concern that has been raised before. See, Simpson 2011 or Sleeboom-Faulkner et al. 2017).

The Māori consultation conducted by the NTCEG proceeds according to very different logics. While the conventional ethics review tends to make invisible the record of previous contacts with possible research participants until ethical clearance has been granted and the consent form has been signed, the Māori consultation openly requests the history of previous engagements between the researcher and the Māori community, and asks for the identity of the *iwi* (tribal) advisors, *kaitiaki* (environmental protectors), *kaumātua* (respected elders) or Māori scientists and scholars who will be involved in the project and will provide cultural oversight and research advice.

By asking directly how the investigation will answer questions important to Māori or how it will help to address inequalities experienced by Māori or to build Māori capabilities in specific research fields—in sum, how Māori will make use and benefit from the research results—the Māori consultation process openly attempts to balance power relations within the research process. More significantly, it is conceived to help researchers “rethink responsibility” (Forssén et al. 2011), by making them accountable for the wider consequences of their research approach and the application of their findings.

Of great relevance for a multispecies study is the fact that the Māori consultation form asks researchers about the intended use of native flora and fauna, no matter their rank in imaginary ladders of classification, their number of vertebrae, or their “total lack of spine” (Hejnlol 2017). *Te Ao Māori*, the cosmovision of Aotearoa/New Zealand Indigenous people, is grounded in *whakapapa*, a genealogical connection between all living beings and the territorial spaces they inhabit (for a deeper insight into the Māori worldview see Roberts and Wills 1998; Royals 2009; Roberts 2013). This bodily, spiritual and material connection—or, if you prefer, this genetic, historic, sociocultural and economic interdependency—generates “different rights and obligations for people” towards places and biota (Watene 2016, 292).

Within this frame, the presence of the “more-than-human-world” does not “unsettle” the process of ethics consultation with Māori (Demeritt and Dyer 2009, 49). On the contrary, it is naturally expected in a world where not only “animals” but also plants, forests and rivers do appear “making ethical demands” (Collard 2015, 133). In ethical debate around native biota, issues of consent related to “language” and “rational communication” (Greenhough and Roe 2011, 48) must be solved with the humans within the extended Indigenous family, that is, with Māori—therefore the question about fauna and flora is included in the Māori consultation form. The “socially acceptable degree of suffering” (Ibid.) is low, even in the absence of central nervous systems. The welfare of other-than-human-species is not at stake, and the treatment of biota as replaceable, “killable”, “confinable” (Collard 2015, 134) always requires justification.

Despite the pertinence and the power of the Indigenous approach to tackle the ethical issues that researchers face daily—especially, when working in what Collard (2015, 127), drawing on Pratt (1991) and Haraway (2008, 244), describes as “multispecies contact zones”—the Māori consultation is largely

a bureaucratic procedure within the broader industry of knowledge production (Stewart-Harawira 2013). Without requiring the researcher to have an adequate understanding of the Indigenous worldview, the Māori consultation becomes mere proof that the institution complies with the bicultural vocation of the country, as stipulated by its foundational document, the Treaty of Waitangi.

This fact has important consequences for the research process because, once Māori consent is granted, the HEC has the authority to encourage or advise against methods and tools and, more importantly, the power to shape the interactions between researchers and “their subjects” (Smyth and Williamson, 2004). Tauri (2018), a Māori scholar who has extensively studied research ethics protocols in New Zealand, Australia and Canada and its impact on (human) Indigenous researchers and participants, described how policies of “informed consent” promote “universal” and “individualized” approaches that are used to define “ethical research conduct”, however, this mainstream institutional ethic invariably ends up marginalizing indigenous understandings. Tauri identified as a key issue among the research ethics boards members, their lack of experience in research with Indigenous people and their lack of knowledge about the Indigenous “social context, complex histories and preferred research processes” (2014, 135). These inconsistencies place researchers and research participants that move between social orders in a very precarious situation which, according to Tauri, can involve the risk “of violating the ‘ethics’ of both the institution to which they have applied for ethical consent and the Indigenous communities where their research takes place” (Ibid.). In most cases, the risk pointed out by Tauri can hardly be anticipated until ethical approval is granted, and the research began (Tolich and Smith 2015, 138). Multispecies research may be more prone to these issues, as discussed below.

Braiding Ethics in the Field

The HEC encourages the use of the university phonelines for research purposes and advises against meeting research participants in private residences. In remote rural settings, however, these requirements have little to no sense. For instance, when *kaumātua* call you several times between the night before and the hours previous to the encounter for changing the long-agreed meeting-place as their day unfolds, or when you are meeting both, individuals testing a treatment in their sick trees and the patients enrooted in their backyards.

The HEC was particularly cautious when considering my access to spaces and practices culturally significant for Māori, the way I would be introduced to Māori people, all the possible forms in which I could break traditional protocols, and the use I might make of culturally sensitive information. I argued that I was primarily interested in the production of knowledge about forest resilience and plant disease (as a process), rather than in any specific knowledge (as a commodity, transferable to my own research), and that all those warnings could be equally issued regarding my access to scientific teams and laboratories and the use I could make of preliminary (unpublished) results.

Eventually, the HEC advised against the use of videocameras in my fieldwork in both scientific and Māori spaces, on the grounds that I could involuntarily capture images of people (including children) who did not grant me their informed consent to use of their images, and that I could unwittingly record culturally sensitive materials and practices, or scientific data not authorised for publication. Instead, the HEC strongly encouraged the realisation of one-on-one interviews in office settings.

Somehow, I welcomed the extension of the same restrictions from Māori spaces to scientific laboratories. I was struggling to assimilate the protectionist treatment reserved for Māori, mainly considering that I was planning to deal with Indigenous individuals who might have years of working experience with scientific institutions and government agencies, long-term involvement in environmental protection and/or social activism, one or more academic degrees, and an English language proficiency higher than mine.

The most controversial matter, however, was the content and extent of the information sheet and the consent form that must be distributed among all research participants before participant-observation and interviewing. In my attempt to decode the construction of knowledge in biosecurity, I attended public conferences, visited research institutions, and walked across patches of kauri forests. I met the same people in different scenarios, playing different roles. This record of previous encounters opened some doors for me. Yet, within an ethnographic inquiry, relationship building is not only a way of gaining access to people and places but a crucial component of the methodological kit. But can the way in which the researcher relates to others dictate its own ethical code?

When a Māori elder —one who has served for almost twenty years as an environment commissioner, ambassador and advisor for different Māori organizations and government agencies, and who is a leader respected and beloved by his people— tells you that he has read the consent form that you previously emailed to him, and is ready to sign the printed version but that he doesn't need to tick the boxes in that mortgage-like document, you know you are in trouble. Basically, you have been gifted a blank check that you are not going to use under any circumstance. On the one hand, this incomplete consent form is not a valid document for the HEC. On the other hand, what you have been given is trust, a precious gift that you must return by making appropriate use of the information shared with you. At that moment, you realise that your only option is to humbly ask if he wants to be quoted by using his real name and professional and tribal affiliations and go ahead with the interview. The informed consent does happen, but it has to be carefully braided over months, as research participants get to understand what use are you planning to do of the information that they progressively disclose to you.

Kaumātua agreed with me that I could not study the national effort to protect kauri forest without mentioning the labour of love that a few of them have been doing by crafting a treatment to be applied to “one tree at a time”. They made clear, however, that they did not want to see their ancestral practices exposed to unnecessary deconstruction and criticism. The safe way to go ahead was, as proposed by them, “sharing *kōrero*” (talking, sharing understanding), “sharing *kai*” (sharing food, spending time together) and “keeping in touch”. Not only were we already in a domestic space, but also the ethical way to proceed was to develop familiarity, build a bond and, most importantly, become accountable.

While the HEC advises against the establishment of personal relations with research participants, Pūtaiora, a group that unites Māori members of ethics committees, encourages researchers “to move beyond consultation and look to substantial and positive engagement with Māori communities” (Hudson et al. 2010, 5). The next sections analyse whether it is possible or advisable to develop familiarity and to become accountable to more-than-human research participants.

Ethical Practices in Multispecies Research

Nothing within the institutional review prepares the researcher for the deep bond between Māori, native biota, and the landscapes and seascapes they inhabit. Kauri trees, for instance, hold immense significance to Māori. According to the earthly chapter of their creation story, first was all darkness. Mother earth (*Papatūānuku*) and Father sky (*Ranginui*) lived in a close embrace and had several children. *Tāne*, the strongest of them, used his powerful legs to separate their parents, let the light in, and allow life to flourish. This *kōrero* (narrative) is so central to Māori culture that it is re-enacted at each welcome ceremony (*pōwhiri*) when the outsiders visiting a Māori community are ritually led from a state of darkness regarding the community itself to another state of light (Royal 2005), in which they are recognised as equals and the exchanges can begin. These welcome ceremonies are very common in New Zealand society today. The teams of scientists and policymakers working with Māori in biosecurity are often welcomed in this traditional way. Inside *te wharehau*, the Māori meeting house that hosts them, the floor represents *Papatūānuku*, the profusely carved ceiling represents *Ranginui*, and the central pole is *Tāne*, forcing their parents apart (Ibid.)

Tāne Mahuta is the god (*atua*) of forests and birds, the one who travelled to the heavens and came back with the three baskets of knowledge. *Tāne Mahuta* is also the Māori name for the “Lord of the Forest”, the largest living kauri tree. Yet, tree species are essentially invisible for ethics boards.

In the field, while following the activities of forest pathologists, microbiologists, and *tohunga* (Māori experts), I encounter a different dimension of ethics. One derived from tangible practices associated with methodological design, technology use, experimentation, and enrolment of volunteers in biosecurity management and treatments trials. Trained to understand in-depth small parcels of reality (the pathogen's life cycle, its reproductive strategies, the olfactory mechanisms used to navigate the soil, the pressure exerted to drill its way into the host, etc.), scientific teams succeed to incorporate complex variables in their studies and identified hikers as vectors of transmission —in a clear example of what Tsing (2014, 28) describes as “more-than-human socialities,” that is, the kind of multispecies interactions that occur “with or despite of clearly formulated human intentions” (Ibid.), and that the agency of the microorganisms makes so evident in this research scenario. However, the more knowledge scientists accumulate about the pathogen, the more evident it becomes how little they know about the trees they are trying to save. “There are no peer-reviewed publications” (Fieldnotes, 23 July 2020) on the physiology of native trees, expressed one of the pathologists’ leaders.

For *kaumātua*, in turn, overcoming the disease requires far more than decoding a tree. Kauri’s disappearance would unleash a chain reaction across the whole ecosystem, but at the same time, the dieback is understood as a consequence of a previous and bigger issue: Environmental ruin. To solve the problem, more than the pathogenic presence must be addressed. Māori elders don't need to pierce the bark and introduce sensors and track the evolution of the disease [Figure three]. They can read the signs (*tohu*) using other accurate sensors, the birds and plants that evolved under the shade of a kauri tree.



Figure 3. On the left, a Māori elder inspects a patch of a forest after completion of rongoā (traditional medicine) treatment. On the right, a scientific attempt to track the progression of the dieback in real-time.

The differences between the building of scientific and traditional Indigenous knowledge have been widely discussed elsewhere (Stewart-Harawira 2013; Smith 2002; Roberts and Wills 1998). This article is not concerned with methods or logics, but rather with the practice of what van Dooren et al. (2016, 1) have called “arts of attentiveness”, that is, “paying attention to others and crafting (a) meaningful response”. The encounter with the other was at the origin of Lévinas’ work (1987) on the irreducible relation between ethics and knowledge. In the encounter, the “face of another”, the physical reality of the other, makes ethical demands, even before the other can express him/herself, and long

before we can know him/her. Because of that, in Lévinas' philosophy, the pursuit of knowledge is secondary to our ethical obligation towards an alterity that is not (only) an object of study, but (mainly) a subject who deserves respect. The need to resort to this or similar reasonings when physically encountering the other-than-human has been stressed by multispecies researchers.

Scientists and policymakers largely consider trees and forests as part of objective material reality (Hall 2009). The assumption of plant beings as passive and inert actors that need to be 'managed' permeates most of the research and policy in biosecurity. Many experiments, programs and treatments are viewed as unnecessarily violent by some Māori tribes who neither feel comfortable nor find sense in using intentional killing as a research approach for species conservation. Consequently, those *iwi* have chosen not to participate in such initiatives, regarded as a part of a continued abuse against kauri that cannot restore the *mauri* (life force) of the forest or guarantee the survival of the species.

The Evidence of the Past, the Uncertainty of the Future

During the last five years, under a program called "Healthy Trees, Healthy Future" (HTHF), some government-funded research institutes worked in collaboration with numerous Māori communities looking for natural immunity against various kinds of *Phytophthora* in kauri seedlings. As a part of this program, a team comprising volunteers, scientists, and professional climbers identified (and climbed) healthy kauri trees enrooted in infested soils to collect mature seeds inside their cones. The reason for using this physically demanding method was the need to accurately identify the origin of each seed, and to be able to return to the mother tree in case natural resistance against the pathogen was identified. The seedlings were grown in a research nursery where human access is strictly limited, and the hygienic measures are extreme. Fifteen months later, the seedlings were transferred to a different research facility where they were flooded with water containing the pathogen to encourage contagion. After several months of successive exposures to the pathogen, the survivors (if any) were planned to be returned to Māori communities for planting in the infested area where the seed was originally collected. The concept of "natural resilience" seems to point to the recognition of kauri as an actor taking a role in its own healing, however, within the HTHF program, kauri's ability to play that role is entirely subject to experimental trials and scientific validation.

From its privileged view over the forest canopy, kauri experience time and space in a way that escapes human imagination. Counted among the oldest tree species in the world, kauri are believed to have been growing on Earth for 190-135 million years. Their lifespan is unknown. By 600 years old, kauri reach an average diameter of one meter (Orwin 2007). By 1,000 years old, its average diameter is about two meters. Trees with three meters of diameter are calculated to be 1,700 years old, though they are extremely rare today. *Tāne Mahuta* and *Te Matua Ngahere*'s diameters are estimated to be over four and five meters respectively. Kauri's reproductive cycle presents another challenge for human timescales. Each kauri tree produces both male and female cones. The pollination is wind-driven and occurs within the same tree. A female cone takes three years to reach the mature state before disintegrating in a spiral movement that releases its winged seeds (Owens et al. 1995).

More than 500 kauri trees from Northland to Tauranga provided seeds for the HTHF program. Considering the amount of time and resources that the production of seeds requires, I couldn't help but ask forests pathologists about this counter-intuitive approach to threatened species' conservation by treating their offspring as killable and replaceable. With an uneasy smile, they often allude to a "greater good" as an answer (Fieldnotes, 4 November 2020), regarding the invaluable possibility to find a way to save the species by using this procedure. However, despite their efforts and intentions, there is something problematic about the human concept of "greater good", and it is not the fact that it is human-made but rather that it is just an idea, and human ideas change over time.

“*Ka mua, ka muri*” is a traditional Māori saying. *Mua* means in front, ahead. It also can mean the past, a time before. *Muri* means the rear, behind, at the back of. It also signifies the future, the time after, and the sequel. When Māori move from one stage to another, the past is in front of them, they can see it, they know it. The future is uncertain, but it is related to a previous time, it is a consequence. The whole sentence has been almost magically translated into English as “walking backward into the future”. “*Ka mua, ka muri*” corresponds to the Māori belief that they know where they came from, who they are as a people, and this knowledge of their past must inform their future. Because of that, the sentence is also translated as “looking back in order to move forward” and is often a guiding principle in scientific research and policy instigated by Māori (Roberts 2005, Wehi et al. 2019;).

We can look back at kauri forests. The recent past of the species was narrated by Sir Alfred Reed (1875-1975). In a series of books published over several decades, Reed related how “the rape of kauri” began in 1820 with the departure of HMS Dromedary loaded with 98 spars (Reed and Collins 1967, 6). Of an estimated area of 12,140 square kilometres of kauri forest in the mid-nineteenth century, the ravages of the colonial era left kauri “facing the prospectus of near extermination” (Ibid, 12). By 1950, less than 10 per cent of the original kauri forest survived and its area had been reduced to about 1,400 square kilometres fragmented in 47 patches depleted of their biggest trees. Virtually, all kauri standing before 1,000 AD were destroyed in one hundred years.

In another book, Reed (1953, 23) wrote: “It has been said that since the white man’s advent more kauri has been lost as a result of fire and wasteful methods than has been used in the service of man”. This claim is based in the fact that, in absence of cranes, tractors and trucks, the extraction methods were precarious and did not take into consideration either the efficient exploitation of the resources available or the conservation of the species. Reed recovered for posterity an early warning from Ernst Dieffenbach, who in 1840 penned of “several miles of forest” in Mangonui “having been fired in order to make room for the conveyance of logs down to the creek” (1956, 204). The situation is even direr when considering the size of the economy generated by the logging industry at the time. Reed provided details of a few old invoices, one of them documenting the sale in 1908 of some 5,000 standing kauri for £2 per tree (1953, 267). Two pounds in 1908 equates to about NZ\$140 or US\$89 in 2020 (Calculation is mine based on Easton 2004).

But Reed was, after all, a man of his time. His accounts of the reckless destruction of kauri forests are accompanied by the idealisation of the men that accomplished the task: “The kauri bush men of those days, a remarkable class of men, built great dams, felled and transported giant trees, constructed tramways, bridges, and huge rafts, all without the aid of either modern equipment and machinery” (Reed and Collins 1967, 11). After all, the destruction of the kauri forests for obtaining timber and gum was made in the name of a “greater good”, the building of a nation, a “civilised” one. The feats of “the kauri bush men of those days” are still celebrated in museum displays. The logging of kauri trees in New Zealand State forests was not forbidden until 1985.

“Walking backwards into the future” may seem an impossible practice within our contemporary globalised culture with its strong conception of time as a linear and progressive movement towards the (illusion of) human rule of the planet. Yet, the change of perspective it supposes, can become a powerful tool when considering ethical issues in multispecies research. As we confront an unprecedented ecological crisis, attempting to balance human ideas with plants and animals’ rights and intentions is not an exercise in intellectual humility but rather of material survival. Asking about the aims of other-than-human and how our policies of environmental research and management match them —a similar question was posed by Lewis-Jones regarding time, space and liminality in plant species conservation (2019)— is not a senseless personification of the natural world. It is fundamentally a quest for the minimal conditions required for the establishment of healthy “more-than-human socialities” and the

possibility of “intergenerational” (Winter 2019) and “multispecies justice” (Celermajer et al. 2020). Doing otherwise is speeding up in a one-way road to planetary annihilation.

Cause No Harm

Informed consent exists within Māori culture, even if the interlocutor is a tree, a river, or a forest. Signing papers, of course, is not required, but before accessing a more-than-human space Māori intone a chant (*karakia*). The objective is to acknowledge the land that nourishes all forms of life, the trees that create a habitable world for all creatures, the birds, the medicine and the food that they might find. The *karakia* is also used to make clear your intentions before entering and acting in a “multispecies contact zone”. No verbal answer is required. If you are welcome, the forest will provide for you. If you take something, you must give something back.

Informed consent can sometimes take the form of distinctive bodily sensations. Discussing with *matua* Tohe Ashby (Moerewa, 6 January 2021) the differences between the treatment he crafted to heal kauri using *mātauranga Māori* and the citizen-science program (Kauri Rescue) that some government agencies offered to individuals and communities with diseased kauri trees on their properties, he said that he attended a demonstration organised by the scientific team behind that initiative. He explained that when someone began to drill the bark of the tree, before injecting the phosphite’s solution inside it, he felt a sharp pain piercing the bone of his right arm and knew immediately that this was not the way to proceed: “The tree didn't like it”. When describing that bodily bond, he recited an ancient aphorism: “*ko ahau ko te kauri, ko te kauri ko ahau*” (I’m the kauri, the kauri is me). Later, *matua* Tohe showed me on his laptop’s screen recent images of other holes, drilled long ago into the kauri bark when the gum industry appeared as a lucrative promise.

Like the Kauri Rescue’s volunteers, the *tohunga* and his students have made a detailed photographic record of the state of their kauri patients before, during and after the *mātauranga*-based treatment, to illustrate a report addressed to the Ministry of Primary Industries. Three years after the trials started, their first patients were discharged following the examination of a council of Māori elders [Figure three], who — after the assessment — banned the use of the term “kauri dieback” in that patch of forest, and instead declared: “*Kauri ora!*” in allusion to trees that were not just alive, but well and safe (Fieldnotes, 2 January 2021). The intimate connection between *matua* Tohe and kauri was at the heart of the treatment he designed. So was the multispecies partnership, ingeniously articulated by the *tohunga*, in two steps: The first one, designed to restore the *mauri* of individual trees, honours the mythological bond between the kauri and the whale, a link woven from empirical observations orally transmitted through successive generations (Ngatae 2020). The second one, designed to keep the pathogen under control, describes a fruitful exchange between *mātauranga* Māori and science (Scott et al. 2019), one that took samples of native plants into the lab and returned a validated knowledge to the land, to be watered as a *rongoā* (traditional medicine) over the kauri’s roots.

The plurality of biosecurity practices described here seems to indicate what our knowledge system inevitably conditions how we relate to others (human or not), regardless of whether that relationship is framed as scientific experimentation, technological implementation, or research ethics. While the scientific method tends to artificially isolate the objects of study, the Māori etiquette for investigating multispecies encounters is very closed to what Hustak and Myers (2012) have called “affective ecologies”, a category that describes the interactions among plants, animals and humans, within a complex evolutionary frame in which the “evolving entity” is not an individual but rather a community of organisms engaged in constant exchanges. Indigenous multispecies socialities are similarly based on the acknowledgement of nature’s prodigious imagination and intrinsic value — completely at odds with “the logic of resource” — and in the adoption of “reciprocity” as a fundamental principle that rules human and nature interactions (Shiva 1992).

Globally, there is a growing interest in Indigenous knowledge as a reservoir of tools for tackling environmental issues (Wehi et al. 2019). However, it doesn't seem clear in most academic publications, scientific projects, or government programs resourcing to Indigenous practices, that there is no magic formula for ecosystem restoration and prevention of biodiversity loss. Most initiatives also fail to acknowledge that the success of Indigenous peoples in securing biodiversity and ecosystems' conservation is based on a simple principle: Respect for life, in all its forms.

Conservation programs and biosecurity policies neglect two crucial aspects. On the one side, human relationships with plant species continue to be elaborated in instrumental terms. According to Hall (2009, 177), this fact "remove(s) limits to human use" and is a "major driver of ecologically destructive behaviour". "Humans", he continued, "violate plant autonomy by use and through death in many instances that are unnecessary" (Ibid, 180). Forgetting that from the air we breathe to the food we eat, freshwater or shelter for all living creatures are precious gifts from plant species that we fail to appreciate and return.

On the other side, as McLauchlan (2019,136) put it, managing conservation and extinction as issues to be heroically "fixed" by humans, dangerously underestimates the complexities of the challenges we are facing. Such approaches, McLauchlan wrote, "shift focus away from the multispecies reality of life in which a forest (...) is always a multispecies happening, a (never-entirely harmonious) collaboration of soils, bacteria, fungi, water, sunlight and more" (Ibid.) By making us face the reality of the "multispecies happenings", the agency of the pathogenic agents imposes some "troubling recognitions" (Smyth and Williamson 2004, 189): Firstly, life and death happen without regard to any human plan. Secondly, that whether we want it or not, we can become an instrument for the realization of an intention that is neither yours or mine nor even human, as when we become the main vector for a forest dieback.

Planetary devastation has undermined the idea that we can treat the human world in isolation as a discreet entity, beyond which lies something we call "nature". In fact, the human relationship with the planet didn't always look like disconnection and abusive exploitation. In what could be a blink in Earth's geological time, colonial arrogance, first, and capitalist gluttony, later, drove to the uniformization of the human ways of being on this planet, and to the consequent destabilisation of all environmental systems supporting life on Earth. Kimmerer (2014, 48) argues on the need to "remember" to how to belong to a people, to the land, to a biodiverse community. We need to remember — she says — "how to be native to a place". This ambitious endeavour requires the adoption of a new ethics in everything we do — an ethics not based on human needs and priorities, but on the acknowledgment of our animal status and our belonging to an earthly community of living beings.

Wilson proposed the concept of "biophilia" to refer to the "innate (human) tendency to focus on life and lifelike processes" (1984, 1). This spontaneous inclination conditions not only our knowledge about other species but also our appreciation of them. "To the degree that we come to understand other organisms — wrote Wilson — we will place a greater value on them, and on ourselves" (Ibid, 2). Biophilia is then "the innately emotional affiliation of human beings to other living organisms" (Wilson 1993, 31).

Yet, the "love for life" is not an exclusively human affair. From a biological perspective and starting with the symbiotic union between various types of bacteria, the expression of "love" in the natural world can take very different forms. Margulis demonstrated how life builds on life by describing the symbiotic origins of many of the most important evolutionary innovations (see for instance, 1999).

Journeying into deep time, Claus (2018) realised that all long-time interactions between autonomous organisms lie in the tendency towards mutual aid that makes possible the continuity of life on Earth. The mutual sustenance between different life forms is explained by Claus as a necessity: "Without the ability to form mutually beneficial relationships — between lipids, protocells, prokaryotes,

eukaryotes, and beyond, including the human-microbiome hologenome— there would be no life” (Ibid, 30). This imperative cooperation leads to the upsurge of a natural code of behaviour. In Claus’ words, “the ability and necessity of life’s entities to navigate their becomings with Others are where the essence of ethics lies” (Ibid.) In this sense, Claus wrote: “*Ethics is the essential aspect of the possibility of relationships with Others*” (Ibid.) (Emphasis is mine).

Adopting a wider conception of ethics —not as a bureaucratic requirement as the informed consent, but rather as a relational practice— it’s not just fair, it is also our only possibility to approach the other-than-human in an ethical way. This includes, of course, the absolute possibility of ethics in multispecies research, as we are dealing with living and autonomous organisms, and not with mere sources of data devoted to the “greater good” of knowledge production.

Since I feel compelled to allow native plants to inform my research, I often walk into the forest, paying close attention to how species rely on each other. Sometimes, I collect seeds to grow at home. I don't know how to *karakia*. However, before taking any seed I let the plant know that I am going to take care of their offspring until they are big enough to return to the land. I don’t only pick-up seeds from tree species but also from neighbouring shrubs. When I plant them in seedling trays at home, I take care to respect their kinship and social affinities. Not all the seeds I collect germinate. And that is totally fine. I cannot blame them for not trusting me. I have lived inside the artificial constraints of human ideas and buildings for a long time. The sun and the earth haven’t had the chance to darken my face and my hands. Research participation is always voluntary, after all. But when a seed responds to my care and germinates, I take the miracle of life as a consent to inform my research. I feel responsible for its wellbeing. I dream of myself walking across a restored area to visit a young tree that I have known since it was a seed. Meanwhile, I observe them closely, I watch how they react to the sun, to the changes in temperature, to the presence of their neighbours. I care. I learn. But I don't fool myself. While working on this piece, six kauri seeds woke up to life in a germination tray placed on top of my desk. In one year, they will be just a few centimetres tall. A humble feeling invaded me realising that, given the right conditions, these tiny tips can unstopably grow for thousands of years until becoming the authentic pillars of the Earth. I also felt horror realising how much has been lost and how overwhelmingly irreplaceable (in human terms) an old-grow kauri forest is.

Taylor and Pacini-Ketchaban (2015, 518) stated that learning and knowing in multispecies encounters is “filled with difficult decisions, unanswered questions and ethical conundrums.” To avoid the trap of the “greater good,” *cause no harm* is my summarised guide.

Conclusion

The institutional review fails to acknowledge the negotiated ethics of working with human and nonhuman others, because it is designed to deal with the liabilities intended by the legal frame on informed consent and data protection. The aim of the institutional ethical review process should be openly discussed to guarantee that the procedures in place and the instruments resulting are fitted to purpose, as research itself changes under the influence of indigenous epistemologies, multispecies lenses, and a planetary crisis. Further discussion is also needed to reach an agreement on what it truly means to conduct research in an ethical way.

One main issue is the fact that traditionally, as Rose et al. (2012, 2) recalled, the humanities have been the disciplines responsible for providing answers to the great questions of ethics, justice and politics in the production of knowledge. This led to the extended idea that ethics is essentially a human matter. As the biological sciences provide us with more information about intelligence, autonomy and intention in more-than-human individuals and their complex ‘socialities’, a reconsideration of our outdated conceptions of ‘nature’ and ‘culture’ is required. Rose et al. (Ibid.) suggested that the partnership between environmental and social sciences will lead to a “*thicker* notion of humanity, one that rejects reductionist

accounts of self-contained, rational, decision making subjects”. The adoption of a “thicker notion” of ourselves, one that acknowledge our status as Earthly creatures, would offer us a better starting point to undertake the study of “multispecies contact zones”. This would also make evident how insufficient the current division between human ethics and animal ethics committees is and how significant the gaps in the institutional reviewing processes are. Also, how much the ethical boards would benefit from taking seriously Indigenous frameworks and the invaluable advice from Indigenous councils (whenever available). With a growing number of scholars and activists working on multispecies studies, the need for a more-than-human ethic in research is imperative.

Until review boards are ready to accept that the boundaries of their job are set by the institutional liability, and ethics is something that exceeds the range of action of legal regulations, until the researchers count on the tools and the criteria to protect the integrity of all research participants — regardless of their species— we must sharpen our senses and proceed with caution. This paper is based on Claus' (2018) claims that ethics, the necessary condition in the possibility of relating to others, begins with the respect for life in all its forms. It is also based on learnings from ethnographic fieldwork in biosecurity, and the realisation that a change of perspective is a powerful tool to identify ethical issues across the taxonomical spectrum. This paper is an invitation to sharpen our senses and “walk backwards” into our multispecies world.

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