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‘Not Just Plants, but Also Plants’: A Political Ontology of *Pohã Ñana*, the Medicinal Plants of the Guarani-Kaiowá

ALICE ESSAM

ABSTRACT

This article explores the political ontology of the Guarani-Kaiowá, Indigenous people of today’s Mato Grosso do Sul in Brazil, and their medicinal plants, *pohã ñana*. The contention, articulated by a Brazilian public health research team, that these plants are ‘not just plants, but also plants’ is investigated and traced back to cosmology. The inseparability of cosmology, ontology, epistemology and practices in relation to medicinal plants and the Guarani-Kaiowá is demonstrated and presented as 'storied performativity' (Blaser 2014). The article shows how the political ontology of the Guarani-Kaiowá is shaped by their resistance against agribusiness development in Indigenous lands and forests, along with their struggle to realise a cosmo-political life, which includes medicinal plants found (and lost) in the forests that have become monoculture. Medicinal plants and associated knowledge and practices have thus become important features of their resistance and political ontology. The article also reviews recent collaborations between Indigenous and non-Indigenous researchers regarding these knowledges and practices that attempt to bring Indigenous knowledge and politics into dialogue with Western epistemology, an important challenge for the harmonious co-existence of multiple ontologies, otherwise conceptualised as the ‘pluriverse’. Blaser’s political ontology framework helps to reveal the multiple dimensions to this Indigenous ontology.

CONTRIBUTOR

Alice is a PhD researcher at the School of Geography and Planning at Cardiff University.

Address: School of Geography and Planning, King Edward VII Avenue, Cardiff CF10 3WT.

Email: EssamA@cardiff.ac.uk

CRYNODEB

Mae'r erthygl hon yn trin a thrafod ontoleg wleidyddol y Guarani-Kaiowá, pobl frodorol rhanbarth cyfredol Mato Grosso do Sul ym Mrasil, a'u planhigion meddyginiaethol, pohã ñana. *Mae’r ddadl a fynegir gan dîm ymchwil iechyd cyhoeddus o Frasil ‘nad planhigion ydy’r rhain unig, ond planhigion hefyd' yn cael ei hymchwilio a’i holrhain at gosmoleg. Mae natur anwahanadwy cosmoleg, ontoleg, epistemoleg ac arferion mewn perthynas â phlanhigion meddyginiaethol a'r Guarani-Kaiowá yn cael ei ddangos a'i gyflwyno i fod yn ‘berfformedd darluniadol’. Mae'r erthygl yn dangos sut mae ontoleg wleidyddol y Guarani-Kaiowá yn cael ei llunio gan eu gwrthwynebiad i ddatblygiad busnes amaethyddol ar diroedd ac mewn coedwigoedd brodorol, ynghyd â'u brwydr i fyw bywydau cosmo-wleidyddol, sy'n cynnwys planhigion meddyginiaethol y’u canfyddir (a’u collir) yn y coedwigoedd sydd bellach yn diroedd amaethyddol ungnwd. O ganlyniad i hyn, mae planhigion meddyginiaethol a’r wybodaeth a’r arferion sy’n gysylltiedig â nhw wedi dod yn nodweddion pwysig o'u gwrthsafiad a'u hontoleg wleidyddol. Mae'r erthygl hefyd yn adolygu enghraifft o gydweithredu diweddar rhwng ymchwilwyr o dras frodorol ac anfrodorol am y wybodaeth a'r arferion hyn, sy'n ceisio dod â gwybodaeth a gwleidyddiaeth frodorol i gynnal deialog ag epistemoleg y Gorllewin. Mae’n her bwysig gyda’r diben o gael sawl ontoleg i gydfodoli’n gytûn, sydd hefyd yn cael ei chysyniadu fel yr ‘aml-barth’ (pluriverse).*

KEYWORDS

Indigenous ontology; political ontology; medicinal plants; Guarani-Kaiowá

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INTRODUCTION

People worldwide are thought to have been using plants medicinally since the beginning of human history (Schultes and von Reis 2008). Today the 'efficacy' of medicinal plants is verified through the science of Western pharmacology. However, since the use of plants for healing pre-dates the Enlightenment framework upon which modern medicine is founded, the question remains, how have and do people in non-(Western)-scientific contexts known plants to be *medicinal*?

The mechanisms behind healing with plants have been given surprisingly little attention, often accounted for as myth, magic or trial and error (Davis 2014; Prance 2008; Sheldrake 2020). Understanding non-scientific knowledges and practices is complex, not least because the contexts within which they are performed differ considerably. Health and disease, and the conditions that produce them, are understood and experienced differently by different people (Connolly et al. 2017). Health is not simply the absence of disease, but requires balance of physiological, emotional and social wellbeing. For many people, spiritual and socio-ecological wellbeing are necessary too.

Healing, remedy and medicine accordingly vary. Consider the adjective 'medicinal'. What is required for something to be *medicinal*? While addressing the full complexity of this question is beyond the present scope, simple considerations demonstrate that the term has multiple interpretations. Within research philosophy, the positivist interpretation differs somewhat to a social constructionist's: the former seeks evidence of material change whilst the latter is interested in cultural or social meaning. Dictionary definitions also differ: some specify the presence of a substance to treat or cure illnesses (Cambridge Dictionary 2024; Collins English Dictionary 2024) while others do not anchor the term to the material world (Merriam-Webster 2024; Oxford English Dictionary 2024).

Ambiguity regarding the presence or form of matter for something, in this case plants, to be medicinal, is a central theme of this article, which explores the statement that the Guarani-Kaiowá *pohã ñana,* medicinal plants, are 'not just plants, but also plants' (João 2023a; Souza 2020).[1] This contention, leading to the question 'how to research plants, which are not just plants, but are also plants' was posed in the preface of *Pohã Ñana: Ñamombarete, Tekoha, Guaraní ha Kaiowá Arandu Rehegua* ('Medicinal Plants: Empowerment, Land and Memory of the Guaraní-Kaiowá') research led by Basta et al. (2020) of the Brazilian public health research institute, Fiocruz.[2] 'Not just plants, but also plants' is the observation resulting from a six-year multi-disciplinary, collaborative research endeavour, initiating from an epidemiological study, later adopting a participatory action-research approach. The evolution of the research demonstrates how engagement with Indigenous knowledge inspired reconsideration of the very nature, ontology, of the category 'medicinal plants'.

If plants are not 'just plants', what else are they, how, and with what implications? Drawing on an approach outlined by Blaser (2014) as political ontology, this article examines the ways in which Guarani-Kaiowá medicinal plant 'lifeworlds' are managed discursively and materially.[3] That is to say, it explores how the material and social worlds containing medicinal plants are storied through cosmology and politics and how they are lived in and through practice(s). The article seeks to understand how the Guarani-Kaiowá Indigenous ontology of medicinal plants is constituted. It finds that

it is constituted in cosmology and Indigenous concepts, which illuminate metaphysical dimensions to plants invisible to the non-Indigenous eye. It is upon these concepts that specific knowledge and practices are elaborated. Their value, different to that ascribed in Western scientific ontology, is also attributed to this metaphysical dimension.

The aim is to situate this proposed ambiguity regarding the category of medicinal plants within the various discussions over Indigenous ontologies in the ontological- and cosmo-politics that result from the meeting of different, and at times competing, lifeworlds (Blaser 2016). In the context of the Guarani-Kaiowá, this meeting of lifeworlds takes place on ancestral land and plays out politically as the Indigenous struggle to engage with the medicinal plants and spirit world that inhabit this land. The threat to this realisation is found in neoliberal agribusiness that has turned ancestral lands and forests, where the medicinal plants are found, into sites of lucrative, extractive monoculture. The specificity of this Indigenous relationship with plants is highlighted by non-Indigenous engagement with it, in, for example, the Fiocruz study.

ONTOLOGY AND INDIGENEITY

Both ontology and indigeneity are hotly contested terms with differing understandings and applications. The present discussion draws upon Blaser's (2009; 2014) formulation of political ontology, an analytical approach harnessed by Ioris (2020c; 2022) in discussing the depth and dimensions of politics enacted by the Guarani-Kaiowá people, further developed here through the prism of medicinal plant knowledge and practice.

Blaser traces two lines of thinking within the 'ontological turn'. One is a 're-animating' of ontology through the notion of more-than-human agency, a vision popular within the philosophical movements of posthumanism and new materialism(s), and influential within new academic approaches to understanding plants: vegetal geography and critical plant studies. This approach replaces the anthropocentric, modernist ontology, characterised by dualities, with an ontology of socio-material assemblages which are relational and 'emergent'. The other line engages the notion of radical alterity, an attempt within postcolonial theory to embrace difference and correct colonial, Eurocentric ways of categorising the world, the Linnean taxonomic system to categorise plants developed during eighteenth century expeditions being an example (DeGuzmán 2019). Belonging to anthropology and ethnographic theory, this approach takes seriously material implications and not just cultural representations of difference (see Pickering 2017). It aims to counter the notion of one ultimate reality having multiple interpretations, perspectives or cultural representations (Blaser 2014).

To avoid the default one-world reality, Blaser refers to Holbraad's (in Carrithers et al. 2010) proposal that ontology be used as a heuristic device to mirror back our own ontological assumptions and onto-epistemological limitations. Sheldrake (2020) unravelled such an instance in the work of renowned nineteenth century ethnobotanist Richard Schultes, who presented an 'enigma' in his struggle to recognise different varieties of plants that were consistently distinguishable to Indigenous Amazonians. What Schultes described as 'botanically impossible' was possible to people with a way of knowing the world, plants specifically, using sensibilities beyond the empirical botanical ones familiar to Schultes. Sheldrake relates how, despite his relative methodological expertise, Schultes' inability to partake in this level of plant discernment, which had material implications, was operating

at the level of cosmology, rather than methodology. The fact that the plants identified by the Amazonians, but unidentifiable to Schultes, had different materialities shows that what originates from cosmology (and might thus typically be regarded as cultural narrative) can be shown to be relevant and illuminate difference at the level of the real (ontology).

For Sheldrake, this example demonstrates the limitation of ethnobotany, not just because of its methods, but the scientific cosmology and *mono*natural, *multi*cultural ontology that underpins it. Sheldrake extrapolates this problem not only to critique ethnobotany but to highlight broader difficulties and dilemmas of scientific rationalisation too. He draws upon Viveiros de Castro's concept, Amazonian 'perspectival multinaturalism', derived from Amazonian cosmologies concerning the way humans, animals and spirits see themselves and one another (Viveiros de Castro 1998), for an understanding of how Schultes' discernment varied from the Amazonian. This contrasting *multi*natural, *mono*cultural cosmological perspective represents a radically different understanding of reality and how knowledge is accessed and performed. As Sheldrake puts it, this possibility represents an 'ontological bomb' (borrowing from Latour's reaction to Viveiros de Castro's suggestion) putting the very basis of reality at stake. In essence, people are not simply different in their culture (ideas, language, epistemology, knowledge) but in their nature (form, materiality), too.

The formulation and usefulness of the concept of ontology has been hotly debated. In the works and discussions of, among others, Viveiros de Castro and Sheldrake, cosmology, which gives an order and essence to people, animals, plants and other things, along with a meaning and purpose to timespans and époques, affords greater scope than ontology does of understanding the nature of difference. Ontology can thus be taken as contingent on cosmology. Indeed, for Indigenous scholar Hunt (2014), ontology is a concept more associated with theories of (intellectual) knowledge production than 'Indigenous ontologies' themselves. Instead, Hunt emphasises the importance of stories, central to cosmology. Indigeneity 'is not just an idea' (Hunt 2014: 29), it is alive, embodied and relational, involving humans and nonhumans, including land and place (Bawaka Country et al. 2016; Radcliffe 2017). Owing to its relationship with enduring colonial power, indigeneity is political; the future of Indigenous lives and rights depends in part on the survival and practice of Indigenous knowledges – praxis (Coombes et al. 2014). This involves challenging and overcoming dominant powers which have long sought to suppress them (Radcliffe 2017).

Returning to Blaser, he positions political ontology as,

> a conversation between ontology and indigeneity … [a] term that is meant to simultaneously imply a certain political sensibility, a problem space, and a modality of analysis or critique … a commitment to the pluriverse – the partially connected unfolding of worlds (Blaser 2014: 55).

When considering Indigenous knowledge traditions, Blaser looks to Mol (2002) to develop the concept of 'storied performativity', referring to the ways in which knowledge paradigms are performed in practice. Just as Mol demonstrates the multiple realities implicated in the multiple practices and knowledges associated with the medical condition atherosclerosis, this article argues that medicinal plants represent something around which multiple knowledges are storied and performed, and around which different ontological politics are found. Native medicinal plants of the Guarani-

Kaiowá thus occupy a different meaning and have a different materiality to, for example, native medicinal plants in the UK. This is not to depoliticise these plants, where political ontology is active too. In the case of the Guarani-Kaiowá, the political ontology lens highlights the struggle to live by a cosmology and knowledge which features medicinal plants and challenges the dominant, imperial politics and storied performativity of globalised industrial capitalism, encapsulated in agribusiness.

The article proceeds as follows: first, an overview of methodology and methods; then two main sections. 'O Povo do Mato' contextualises the Guarani-Kaiowá people (first, their political ecology, then selected features of cosmology); '*Pohã Ñana'* adds to this medicinal plants (first, plants in Guarani-Kaiowá cosmology, then in practice and epistemology). These sections build the political ontology of medicinal plants, demonstrating why and how plants are 'not just plants'. The final section speaks to the overarching aim of Blaser's project: attempting knowledge politics and learning that enable us to navigate the 'problem space' of multiple realities, the 'partially connected unfolding of worlds' (Blaser 2014: 55) that make up the pluriverse.

METHODOLOGY AND METHODS

The present discussion stems from doctoral research into the question of how plants come to be considered 'medicinal'; the Guarani-Kaiowá and their plants are one of two cases examined. Literature from ethnobotany, philosophy and sociology of health and medicine, Indigenous geography, and more broadly socio-material philosophy has helped shape and refine the research. The current analysis examines material and discursive claims about the medicinal plants of the Guarani-Kaiowá. This has involved distinguishing cosmological, ontological, epistemological, methodological and political dimensions to medicinal plants. A narrative analysis was conducted on a range of material, from academic literature in the abovementioned areas, along with research monographs, video material, interviews and academic presentations, their intersection concerning the Guarani-Kaiowá and medicinal plants.

In-depth analysis has been carried out on the publication *Pohã Ñana: Ñamombarete, Tekoha, Guaraní ha Kaiowá Arandu Rehegua* (Basta et al. 2020), involving engagement with its authors. Textual analysis was supplemented by discussions and interviews with the Indigenous and non-Indigenous researcher-authors. These focused on themes presented in the book and centred on the experiences and learning of a team of researchers participating in a multicultural, multidisciplinary, multilingual exercise having different epistemological and ontological starting points. These assisted in understanding the concepts involved and facilitated translating the publication, a project undertaken during the doctorate.

During an institutional visit to Brazil, where this article took shape, I attended class discussions and presentations at FAIND (Faculdade Intercultural Indígena), the Intercultural Indigenous Faculty, at the Federal University of Dourados (UFGD) in Mato Grosso do Sul. In dedicated sessions, I conversed with students and teachers about medicinal plants. An interview with the resident *ñandesy* (Kaiowá shaman) and her daughter afforded insight and clarification regarding certain ontological nuances, examples being plants' spiritual dimension and the process of their identification as medicinal. Further relevant research publications from FAIND, and other UFGD departments and universities in Mato Grosso do

Sul were acquired, which provided rich primary data for narrative analysis as well as literature review.

'O POVO DO MATO'

The Guarani-Kaiowá are the largest of three sub-groups of Guarani peoples, indigenous to modern day Paraguay, North-East Argentina, and the Brazilian state of Mato Grosso do Sul. With a population of around 45,000–50,000, they are the second largest Indigenous group in Brazil, the majority living in the 'Cone Sul', Southern Cone, around and to the south of the city of Dourados. An equivalent sized Kaiowá population lives on the other side of the Paraguayan border. This border, dating back to 1750, which established territorial boundaries between Portuguese and Spanish colonies, foregrounds a political-territorial line over complex historical socio-material transformations. This history has not faded or been erased; it is relevant to, and very much present in, the lives of the Indigenous Guarani-Kaiowá. According to Almeida and Mura (2018) the name 'Kaiowá' derives from *Ka'a o gua,* meaning 'those who belong to the high dense forest'; the description was reflected in the diaries of expeditions around the time of the Brazil-Paraguay border demarcation, which referred to people 'on foot' living discretely in hill forests, away from the advances of developing frontiers (Fonseca 1937, in Almeida and Mura 2018). Despite a desire to realise the identity of 'o povo do mato', 'people of the forest', for many Guarani-Kaiowá, the name no longer represents current living conditions and way of life.

The political ecology of the Guarani-Kaiowá

Indigenous peoples in Mato Grosso do Sul live in a deeply politicised condition at the frontier of economic development centred around international agribusiness (Ioris 2020b). The previously densely forested area has undergone a series of changes in occupation since initial colonisation, dating back to the arrival of the European Jesuit missionaries in the 16th century. Agricultural economic development started at the end of the 19th century when Guarani territories became target for exploitative production of mate tea. The region has been particularly desirable owing to the agricultural richness of its distinctive red soils.

Systematic colonisation and expropriation of Guarani territories took place during the twentieth century. The newly established SPI, 'Indian Protection Service' (present-day FUNAI, 'National Indian Foundation'), began creating 'Indigenous reserves' in the 1920s to contain enforced movement of people expelled from territories they had inhabited for centuries. The creation of reserves showed little sensitivity to Indigenous people's preexisting values and way of life, denying their need to retain connections to ancestral land and ignoring distinct ethnic living patterns. Small areas of land were divided into plots, imposing a private ownership model on people previously accustomed to living collectively (Ioris 2020b).

A second phase of demarcating reserves took place under the 1988 constitution. This recognised Indigenous land areas; however, enforcement of rights created under this new constitution has been notoriously challenging in the face of the competing allied interests of corporate and state judicial actors (Ioris 2020a). From the four million hectares originally occupied, the Guarani-Kaiowá were relocated into around 40,000 hectares split into various reserves (Benites 2014). The process was disruptive, unsettling, violent, and illegal, with residents describing 'disorientation',

'confinement' and 'confusion'. Living conditions have been described as 'suffocating' and 'toxic', referring to both the spraying of pesticides in neighbouring fields and the impacts of alienation and structural segregation (Normann 2022). Discrimination and prejudice from non-Indigenous society, persistent threats from 'fazendeiros' (plantation owners) and paramilitias, as well as internal social disputes resulting from disorientation and upheaval, have exacerbated the trauma of separation from ancestral land where life had meaning. Social issues, including alcoholism and suicide, have ensued.

The contrast of worlds at the fringes of Dourados and across Mato Grosso do Sul is stark. To the uncritical eye the landscape is productive and mostly peaceful: large open expanses quilted with green crop interspersed by small clusters of trees (a certain amount of biodiversity has to be retained by law). All this counterpoints visuals associated with a typical modern, industrial landscape: layers of grey concrete blocks and relentless audio agitation from engines. However, the extent to which this green 'campo', countryside, can be contrasted to other indications of modernity is questionable. On closer inspection, the fields are sites of soya, corn and sugar cane monoculture destined for extraction and exportation. Agribusiness development is celebrated in Brazil through the logics of sustainable intensification and 'green growth'. As Ioris (2020b) puts it, the capitalist agricultural frontier holds many paradoxes: it seems 'new' yet is rooted in colonial practices of expropriation, exploitation and racism, and promises progress and abundance, yet is inseparable from exclusion and exploitation. Land has thus become an incredibly contentious issue, mirroring the situation experienced by Indigenous peoples across Brazil: the struggle is a national issue.

Cosmology, cosmopraxis, political ontology

Guarani-speaking peoples are known for their rich cosmologies (Mura 2020) and Kaiowá people are regarded as deeply spiritual (de Oliveira 2021). It is hard to understate the importance of cosmology in understanding Guarani-Kaiowá lifeworlds; challenging too is translating this extensive cosmology into non-Indigenous thought and language. Two relevant concepts for understanding the political ontology of medicinal plants are covered here: *jará* (also known as *jary*) and concepts stemming from the root word *teko,* which features throughout Guarani-Kaiowá cosomology. Of particular significance is *tekoha.*

Jará are spirits (of ancestors and guardians of plants, animals, objects, and elements with which life itself is made). All living entities and natural phenomena have specific kinds of *jará*. They are part of community life, in permanent reach through prayers, songs, and daily practices (João 2023b). The way in which spiritual entities form part of community life and are always connected in practice has been termed cosmopraxis by de Oliveira (2021). The Guarani-Kaiowá shamans, *ñanderu* (male) and *ñandesy* (female) participate in cosmological dynamics through prayer, song and chanting, often accompanied by a sacred rattle.[4] Through these practices shamans cross dimensional boundaries to join the *jará* in dialogue and make decisions. Ordinary Kaiowá people can form relationships with *jará* for practical activities (hunting, fishing) but only shamans are attuned to form and maintain relationships with spirits whereby they can engage with the cosmos to modify reality. Shamans engage in higher levels of spiritual healing, such as *mongarai,* which restores a person's emotional-affective stability, sometimes disturbed by witchcraft (Mura 2020). Medicinal plants, and their *jará,* assist here.

The Guarani-Kaiowá live a sacred, spiritual life governed by multiple relationships with agencies that inhabit three 'terras', lands: this one; the above; and the below. Time and space are not as in Judeo-Christian or the scientific-materialist cosmologies. In Guarani-Kaiowá cosmology being extends beyond the empirical realm to different levels or planes ('patamares' in Portuguese). The number of these is variously interpreted and engaged with among shamans. Different wisdom is accessed through these different cosmic levels (João 2023b). Time, which is non-linear, is also intrinsically linked to space and encapsulated in the Guarani concepts *Áry Ypy* (space-time of origins), *Áry Ypyrã* (current space-time), *Ararapire* (the end of space-time of good living).

Guarani-Kaiowá cosmology includes multiple concepts relating to 'live well', a notion found throughout Latin American Indigenous cosmologies in *buen vivir* (Spanish) and *bem* or *bom vivir* (Portuguese). The root word *teko* features in many of these, and is important for understanding the Guarani-Kaiowá worldview. It refers to 'the way of being and living'.[5] Guarani-Kaiowá people seek *teko porã* (the right or good way of being and living). *Teko vai* (negative behaviour) has consequences in the formation and destiny of the universe, as also for the person. Further *teko*s include *teko joya* (enacting reciprocity), *teko mborayhu* (enacting love), *teko rexai* (health). These behaviours relate not only to humans and current space-time. In Mura (2020), prominent *ñanderu* Atanásio Teixeira, of Limão Verde, Amambai, highlights an 'extremely dynamic' conception of the cosmos: a big arena within which cosmo-political relations are played out and fought for, with balance sought. The cosmos is determined not by ontological dichotomies but by relational hierarchies, which result from different actions. Actions and relations have primacy over possessions or things.

The notion of *tekoha*, ancestral land, is central to the Guarani-Kaiowá lifeworld. As described above, traditional Guarani-Kaiowá lands have been colonised and land politics continue to be extremely fraught. The 'scramble' for land is a longstanding phenomenon that has devasted communities and ecologies the world over, each context having its own particularities. Its frequency risks diluting the specificity of trauma that it produces. Understanding this pain requires appreciating the deep meaning of place. *Tekoha* is not only physical land but the site of community, co-being, co-belonging and co-becoming between people (past and present) along with the nonhumans that have also inhabited it. Ioris describes how 'in recent years, the expression *tekoha* has become a symbol of the multidimensional complexity and ontological magnitude of the land struggle, constantly used in documents and statements put forward by the Guarani-Kaiowá' (Ioris 2020c: 11).

Reclaiming and returning to *tekoha* is imperative, a political-spiritual act of 're-membering', claiming 're-existence' and 're-living the future' (Normann 2022, referencing Mbeme 2019; Mignolo and Walsh 2019). The reclaiming of *tekoha* is known as a 'retomada', 're-taken' in Portuguese. Over twenty have been staged by the Guarani-Kaiowá, the process being spiritual, ritualistic and a strengthening of their identity and politics. 'Retomadas' have been met with violent retaliation from landowners and 'fazendeiros'. This struggle for land, however, is not only political, but ontologically political, and a demonstration of cosmopolitics (Blaser 2016). The process is not materially or economically motivated in the geopolitical manner of land grabs. Rather, it is guided by conversations between humans and nonhuman agents. Communication from these agents is received through prayer and also felt through subtle signs in nature. Such messages are central to the

struggle for land because they strengthen a subjectivity that transcends space and time (de Oliveira 2021).

De Oliveira states, in relation to the notion of cosmopraxis, that 'the continuity between nature and culture is not merely a thought process, but rather involves everyday activities that produce experience and thinking at the same time' (de Oliveira 2021: 4). This connection that the Guarani-Kaiowá have with nature and land, and how it differs to that found in Western society, is poignantly portrayed in a scene of the 2009 film *Birdwatchers*. Tension has been building throughout the film; in this particular scene the ontological nature of the conflict is depicted: a 'fazandeiro' confronts a Guarani-Kaiowá leader, arguing that the land upon which they confront one another is *his* land, which he is putting to good use by growing crops to feed people; the Indigenous man does none of this. To the exasperation of the 'fazandeiro', the Kaiowá man, instead of arguing back, remains silent, staring intently before bending to the ground to scoop up soil. He puts it to his mouth as if to say, 'I *am* this land'. What to the 'fazandeiro' is agricultural land and his productive property, to the Guarani-Kaiowá is ancestral land from which he was born and to which he will return. He is there staking a 'retomada' and the possibility of living his *tekoha* among spiritual relations, *jará*.

Differences of opinion or perspective (the different positions occupied in relationship to a thing or event) are part of everyday experiences, but the enactment upon and with land shown here represents different 'reals' rather than different perspectives of the 'same real' (Blaser 2018): the same land is the stage upon which different stories and lifeworlds are performed (Mol 1999). It is within this setting that the political ontology of medicinal plants plays out.

POHÃ ÑANA

Pohã ñana is the Guarani term for medicinal plants, of which there are many, used both for simple ailments and in practices and rituals for complex conditions. The ways plants are used medicinally reflects their ontological position and potential. According to Kaiowá anthropology doctoral researcher and community teacher, João (2023a; 2023b), to understand the ontology of plants we must first look to Guarani-Kaiowá cosmology, which tells the story of *ypy* (origin), how everything came to be. This account underpins how the Guarani-Kaiowá interact with and relate to other beings and things: not only plants, but animals, humans and objects. Guarani-Kaiowá cosmology contains concepts describing the ontology of plants which do not exist in or easily translate into Western languages and concepts.[6] The political life and struggles of the Guarani-Kaiowá can be traced back to their cosmology story, describing the rules, behaviours, habits which, when followed, enable people to relate to the divine world. An appreciation for the types of roles and positions things like plants occupy affords insight into the ontological potential of plants, which differs from that of Western cosmology and ontology. Herein lies the difference in medicinal potential. What follows conveys first the significance of plants in Guarani-Kaiowá cosmology (story), and then describes epistemology (knowledge) and practice (performativity).

Plants in Guarani-Kaiowá cosmology

All things have a divine origin: humans; birds; animals; plants; objects. Each was created by and belongs to *jára* in *Ára ypy* (space-time of origin). The

'essences' of plants and animals came into being through the song of the divine creator, who created *rekorã ypy* (life's distinctive principle). It was in this primordial 'time-space of the origin of being' that the creator defined each being's environment, behaviour, social norms and function on earth, including its language, food and mode of movement. João (2023a) explains that deities, spirits, humans, animals, and plants live in different environments and have specific ways of living and behaving. For example, some birds are carnivorous, while others feed on insects or fruit. Similarly, the cycles and seasons of plants and vegetation, and how and when they bear fruit, were also established in *rekorã ypy*. To each plant and animal was indicated a way of being in its specific environment, along with its food, way of moving, and communicating.

In Guarani-Kaiowá cosmology, beings inhabit two planes: the terrestrial and the divine, located in *yvy rendy*, the beyond. João (2023a) states that in the beginning all beings had human form. However, there was a critical point at which plants and animals became 'cloaked', hiding their original characteristics. Plants and animals were not *former* humans, as proposed by Viveiros de Castro in multinatural perspectivism. Rather, in the Kaiowá cosmovision beings still have human characteristics in the divine plane they inhabit. According to the *ñanderu*, the shamans, in *yvy rendy*, the divine plane, all beings walk and are immortal; what we see on the terrestrial plane as a plant, tree, or animal, has a human form in *yvy rendy*. These beings walk in *yvy rendy,* each with a different gait; the vegetal is considered the most beautiful (João 2023a). This reverence contrasts with the lower casting of plants throughout Western cosmology and philosophies (Marder 2013).

During creation, plants and other beings emerged as *tekoaruvicha*, spiritual leaders, gathered and began to chant. As they moved around the terrestrial plane singing and chanting, more plants began growing and formed large forests. The words expressed through the songs engendered all that exists. Through songs, *Ñanderuvusu* (the divine creator) defined the essence of plants and bestowed knowledge to them within their vegetal condition; plants and animals were distinguished from humans from the beginning. *Ohekokuaa* is the term for each being's wisdom regarding how to live, how to produce knowledge, how it relates to others – its subjectivity. It prescribed the functions of plants in the social world, including how they interact with human and non-human beings. For the Guarani-Kaiowá people, what defines and differentiates beings is their *ohekokuaa*, defined at *Áry ypy* (João 2023b). This is different from the species categorisation in Linnean taxonomy.

Plants' anatomical parts have *omohekorã,* their own features. For example, roots are underground so that plants can communicate with each other, something Western science has only recently explored. Plant science has evidenced the need for certain soil conditions for plants to grow from their roots. According to the Guarani-Kaiowá *mono*naturalist view, other things are to be considered. João (2023a, 2003b) tells how shaman Lício Toriba explained that roots intertwining means no plant is alone; if it were, it would be sad. When their roots interweave, plants strengthen one another. According to Lício, people are the same: when alone, we become sad, but when we have others to interact with, we live happily. Leaves also have specificities. Their movement is a form of dance; they fall and make noises, a subtle form of communication. The sounds of tree branches rubbing against each other can signal warnings. This is *yvyra ayvu* (language of the trees), and *ka'aguy ayvu* (language of the forest). Plants have a way of communicating which people may hear in subtle sounds, but not

understand. João (2023a; 2023b) recalls how as a child he would go to the forest with his father, who could understand the language of trees. He would explain that it was dangerous to go under some trees, depending on the noise and movement they were making; trees have the ability to signal danger.

Plants are not merely resources for the Guarani-Kaiowá, but teachers:

> Each [plant] has its own function in the terrestrial world, which surpasses its usefulness to humans. In addition to being part of terrestrial life, they bring us knowledge and collaborate in balancing the socio-cosmological space. If the idea of domestication in non-Indigenous societies is linked to progress, evolution, control, and subjugation, in Kaiowá thinking we understand that it is urgent to eradicate the idea of the submission of plants. It has to be emphasised that they bring us knowledge anchored in the precepts of existence (João 2023a: unpaginated).

To understand and communicate with plants and other non-humans, a person must undergo rigorous training in spirit, body and mind. This requires full, undivided attention and dedication. Such people become the shamans, with ability to transit through different cosmic levels. Not many undergo the full training, which continues throughout a shaman's life to deepen their knowledge and wisdom, thereby losing the layers of *mandiju ete* (sacred cotton), which prevents hearing and understanding the languages of other beings. These layers covered the eyes preventing people from seeing other beings in their original form (a human form) and from understanding that *as plantas não são apenas plantas* (João 2023b): 'plants are not just plants' (João 2023a).

Pohã ñana epistemology and practices

Cosmology informs ontology, which in turn informs epistemology and practice: they are inseparable. Because people are spiritual (according to cosmology), a person's disequilibrium (illness) can be deemed to have spiritual (cosmic) or relational (social) causes. Healing is correspondingly a spiritual process. Individual health is related to a stable spirit-soul, *ayvu,* which can maintain a healthy body. A healthy body in turn wards off bad spirits and impurities (Mura 2019). A range of social behaviours (*teko*s, including *teko porã*) help toward this, but it is accepted that, owing to the human condition, people exist in instability, seeking stability. As Mura puts it, for the Guarani-Kaiowá, rather than *mens sana in copore sano* (a healthy mind in healthy body), 'the body is healthy when the mind is healthy' (2019: 341), since bodily disease is seen as a direct consequence of the condition of the soul. This section draws upon interviews (with a shaman, and with Indigenous and non-Indigenous researchers who conducted extensive interviews with shamans for the Fiocruz study) to explore the Guarani-Kaiowá understanding regarding the source of illnesses along with approaches to healing and medicine, of which plants are a central feature.

Conversation with the Fiocruz researchers revealed that the concept *ma'etirõ,* although only mentioned twice in their publication, was considered by the Guarani-Kaiowá to be the source of illnesses. This emerged while discussing the initial research focus on tuberculosis. For those trained in Western epistemology, tuberculosis is an illness derived from bacteria, a category which does not exist for the Guarani-Kaiowá. However, the understanding that illness originates in and can be transmitted through substance outside the body and in nature does exist in the concept of *ma'etirõ.* In contrast to the Western category, there is a spiritual dimension to *ma'etirõ.* According to

Mura's (2019) research *ma'etirõ* can be substances, agents or beings, and also exist in the cosmos (as *jará* and *añáy* (demons)). As well as from *ma'etirõ,* ill-health can also result from 'feitiço' (Portuguese for witchcraft spells). Certain plants, along with prayer, can be used to counteract this by, 'cleaning all inside that has been intoxicated' (Basta et al. 2020: 83).

Plant medicines operate on similar principles. As noted in Bueno et al. (2005), Basta et al. (2020), and Pavão et al. (2020), plants help alleviate physical symptoms of illnesses, including, notably, Covid-19 and tuberculosis, for which one plant is ingested as a tea to encourage a purge (Basta et al. 2020). However, the mechanism that produces the healing is not just, if at all, material (physical): while ingesting a hot or cold-water infusion (of roots, leaves and/or bark) is most common, it is not the only way of affecting human physiology and encouraging healing: bathing with plants is also common. It is curious that ethnobotanical registers have tended to simplify healing actions of plants and confine them to the body area or symptom they seek to relieve, suggesting representational limitation: if spiritual, energetic or relational disease is not recognised, associated healing will likely go unregistered.

Ethnopharmacological studies prioritise physiological benefits of plants. Modern medicine's focus on physiology has encouraged bioprospecting for potential pharmacological development (Hayden 2005). Indigenous knowledge has broader understanding, attributed in the Fiocruz study to (Guarani-Kaiowá) cosmology. The study noted a range of remedies for common complaints such as diarrhoea, sore throat, swelling, menstruation problems, through to more complex conditions such as cancer, diabetes and problems with internal organs. It also noted abstract (to the Western mind) uses such as 'to calm the blood' and 'to access spirits'. When asked about the simplicity of details given in the publication, the lead researcher reported that only basic details about the plants were permitted by the shamans to be shared outside the community: medicinal plants were sacred and permission from the spirits would be needed to share knowledge (Pavão et al. 2020). Further, given the specific, subjective nature of prayer and spiritual contact involved in the process of healing with medicinal plants, it would not make sense for such knowledge to be reduced and recorded.

As confirmed in discussions with Indigenous researchers and students at FAIND, many common symptoms are treatable with plants (fever, stomach-ache, headache, parasites, flu, coughs, etc) and an understanding of which plants to use and their preparations is not specialist knowledge. Students readily named plants they, and/or family members (usually female), know or use personally. Many students had some medicinal plants at home and learnt about them from an older family member, confirming the trans-generational nature of knowledge transmission described by Pavão et al. (2020). More complex illnesses require the assistance of a *ñanderu* or *ñandesy*. Such conditions might be understood to have a spiritual dimension, which requires a shaman's specialist knowledge for healing. This knowledge, or wisdom, does not relate to a learnt body of knowledge (as possessed by a medical doctor or herbalist). Rather, it lies in the shaman's ability to dialogue with and request assistance from *jarás* for finding medicinal plants for the particular person and condition. Prayers, and thus connection with the spirit world, are crucial in accessing the medicine of plants (Pereira 2020a, 2023) and support medicine preparation, ceremony (if relevant) and the ongoing personal healing process.

The combination of prayer and medicinal plants represents an embodied spirituality and can be viewed through the lens of 'storied performativity' (Blaser 2014). It is within cosmology, 'Indigenous stories' (Hunt 2014), that instructions on how to engage and perform with medicinal plants are to be found. Indeed, as described above, according to Guarani-Kaiowá cosmology the distinguishing features of plants, along with their *ohekokuaa* (wisdom), were decided and assigned by creators through their *rekorã ypy* (life principle) at *Ára ypy* (space-time of origin). It is from these features that categories are understood, contrasting with the Linnean taxonomic system of Western science. According to the sources consulted, plants are not formally categorised in this way but are referred to according to characteristics such as where they are found: in the forest, in the swamp, etc. Plants are further referenced according to their ability to either cool (a person) down or warm (them) up. *Mboro'y* is the healing process of cooling down; the hot/cold binary is linked to instability/stability in the soul, and thus the body (Mura 2019).

Through extensive interviews with the *ñandesy* (female shamans/midwives), Pereira describes various examples of the 'storied performativity' of medicinal plants. Of note is the gendered relevance of plants. Various plants specifically benefit women. Along with related rituals and prayers they accompany females at different stages of reproductive health: at the beginning menstruation (so that their bodies and souls are protected against bad spirits, *mbae'tirõ,* (Vera 2023), a variant of *ma'etirõ* (Mura 2019)); during pregnancy; and during birth. Notably, selected plants are indicated as contraceptives, 'for preventing pregnancy', and 'for women who don't want any more children' (Basta et al. 2020: 117, 119).

POLITICAL ONTOLOGY: NAVIGATING MEDICINAL PLANT KNOWLEDGES IN THE PLURIVERSE

Guarani-Kaiowá medicinal plant 'storied performativity' (knowledge in practice) is firmly rooted in cosmology, where plants are 'not just plants' as understood in Western materialist ontology. However, the ability to perform this knowledge is bound up with wider struggles, namely separation from the ancestral lands within which (ancestral) plants and spirits for healing are found. A growing number of Guarani-Kaiowá and other Brazilian researchers have demonstrated the various strategies used by the Guarani-Kaiowá in their cosmo-political struggle to reoccupy their *tekoha* (Brand 2004; Benites 2014; Mondardo 2020), a phenomenon presented as political ontology by Ioris (2020c; 2022). Drawing upon research into Guarani-Kaiowá medicinal plant and broader ecological knowledges and practices, this final section aims to consolidate this argument, bringing the latter into Blaser's political ontology framework, and speaking to his call to build a 'problem space' and mode of critique that rejects universalism and the 'common world' vision, fostering instead political sensibility that supports (ethical) multiplicity, a pluriverse.

Whereas much botanical and ethnobotanical work aims to subsume or translate Indigenous knowledge into a 'common world' framework, the following studies contribute to the pluriverse project by foregrounding cosmology as underlying the difference between the Guarani-Kaiowá and Western epistemologies: Bueno et al. (2005); Sangalli et al. (2018); Basta et al. (2020); Pavão et al. (2020); Pereira (2020a, 2023). The study by Pavão et al. (2020), conducted by a group of Indigenous and non-Indigenous

researchers, investigates the medicinal plant knowledge of a group of Guarani-Kaiowá people occupying a precarious position on ancestral land, currently a 'fazenda' plantation. Despite recognition as Indigenous land in 2010 by FUNAI (National Indigenous Foundation), juridical recognition was suspended. The researchers investigated the specificity of the intricate Guarani-Kaiowá knowledge of local flora as evidence for land rights, finding that the Indigenous people possess knowledge about plants that has roots in cosmology, and is directly related to local floral in this specific region. This speaks directly to the question of political ontology by harnessing ethnobotanical methods and situating the knowledge within the political context in which people live, demonstrating the simultaneous cosmopolitical and socio-ecological nature of their knowledge.

Pavão, who is Guarani-Kaiowá, also partnered with a non-Indigenous researcher to investigate Guarani-Kaiowá 'biocultural memories of the forest' (Pavão and Gisloti 2023). This contributed to the project of ethnoconservation, which draws on ethnobiology, anthropology, geography, history and political ecology, to illuminate how Indigenous people, through their cosmovision and lived realities of relationship with their local ecosystems, create biocultural memories of complex socio-ecological communities, in this case forests. The researchers highlight how the forest, with all its diversity of beings, comprises a vital part of the Guarani-Kaiowá *tekoha,* and encourages life in all its dimensions. In this way, preservation and conservation have a different rationality to the utilitarianism imbued in Western epistemology, which values biodiversity in forests for conservation and future condition. For the Guarani-Kaiowá, the forest is a necessary condition for reproducing Guarani-Kaiowá existence which is not based on linear time; it is a site of reciprocity and mutual care, inseparable from all beings (Sangalli and Ladeia 2018; Pavão and Gisloti 2023).

Within the register of 'ethnospecies' and their associated memories, numerous plants used medicinally, as well as for other subsistence activities, are listed. The authors argue that the Guarani-Kaiowá political mobilisation to defend their territories and biodiversity indicates 'new epistemic and political horizons', which could deepen dialogue between different sciences. This would support the pluriverse project. However, Pavão and Gisloti (2023) note the difficulty in developing and maintaining stimulating dialogue between environmental sciences and Indigenous sciences. There is no simple way to represent, understand or respond to the complexity of systems that interrelate humans and environment based on biophysical, socio-spatial, cultural and cosmological aspects, they argue. Environmental sciences have remained too distanced from important ethical-political questions that have serious implications for Indigenous peoples, their knowledge and territorial rights – in other words, their political ontology. For their part, the Guarani-Kaiowá are active in anti-colonial resistance; their socio-territorial struggles are marked by various complex strategies based on community organisation (which includes the participation and political agency of spirits), the 're-taking' of territories, and reenforcing recognition of traditional knowledge and socio-ecological systems (Pavão and Gisloti 2023). While one *ñanderu* consulted for the work felt that the *karaí* (people of white society) haven't known how to value Indigenous science and subjective knowledge, a shift was taking place, with universities and schools taking interest, in turn encouraging renewed esteem from Indigenous families.

Confidence in culture, language, knowledge and elders (traditional healers) has been challenged by various streams of mainstream culture (technology,

social media, Western medicine, the Evangelical church). Pereira (2020a) notes how people have come to rely more on Western pharmaceutical than traditional medicines; another Indigenous Fiocruz researcher cites the Evangelicals, along with non-Indigenous health workers (Basta et al. 2020), as having undermined the role of the shamans within Guarani-Kaiowá society. People have not completely abandoned traditional healing, as, when Western medicine fails, they turn to their *ñanderu* or *ñandesy*; for certain conditions, they are their first choice. The concern for the young Indigenous researchers is that as shamans age, and pass away, without any next-generation trainees, this living knowledge risks dying too. This was a strong motivation for their participating in the Fiocruz study. While the publication cited here only contains limited descriptions of medicinal plants, a library of data held by Fiocruz from years of fieldwork, including recordings of interviews with the shamans, will soon be made available to the Indigenous community. The well-established partnership between Fiocruz and the community has led to subsequent initiatives, including investigation into plants used by the Guarani-Kaiowá to treat Covid-19 and the recent establishment of a medicinal plant garden in the Amambai reserve, providing an educational resource and a source for propagation of plants which are unavailable nearby.

Access to ancestral land to find medicinal plants is a grave concern since much of it is now privately owned. Small sections of forest remain within 'fazendas' in accordance with legislation, but are inaccessible to the Indigenous people (Pereira 2020b). Pereira, one of four Fiocruz Indigenous researchers, became instrumental to the study as an interlocuter between academic researchers and Guarani-speaking elders, something she reported as deeply enriching her own relationship to Indigenous traditions. Although initiated within the scientific onto-epistemology, the Fiocruz team came to adopt and emphasise epistemic pluralism and non-hierarchy, responding to the addition of Indigenous researchers and voices. As well as the ethnobotanical register of plants, this publication spotlighted the personal and professional reflections of the researchers on the experience of engaging across cosmology, language, epistemology and (implicitly) ontology, which provided a depth (positionality) not routinely written into scientific literature.

Appreciating multidimensional learning and transformation, the Fiocruz team conclude by encouraging future dialogues between non-Indigenous and Indigenous communities. Overall, the work of Fiocruz and others reviewed above align with the pluriverse ethos in their effort to foster curiosity and understanding within Western institutions regarding Indigenous lifeworlds. It is this type of endeavour that Blaser would surely commend as the type of onto-political engagement that will progress toward harmonious co-existence of multiple ontologies. In the case of Fiocruz, proof of this commitment, inspiring my own enquiry, is encapsulated in the dilemma 'how can we research plants, which are not just plants, but are also plants', which seeks to take difference seriously and avoid the contradiction Blaser cautioned of – either staking ontological correctness, or inadvertently superimposing a meta-ontology.

CONCLUSION

If plants are not 'just plants', what else are they? And with what implications? To understand the Indigenous ontology of medicinal plants for the Guarani-Kaiowá, their 'storied performativity' was traced back to cosmology. Here, plants are indeed 'not just plants': they have spiritual and human forms in other parts of the cosmos. Within the Western scientific paradigm, plants are

biochemical objects with component parts. Within this framework, medicinal potential is determined through pharmacological analysis which enables curative chemical compounds and constituents to be identified. The medicine of plants is ingested, because it exists in material form.

Within Indigenous knowledge, plants are 'not just' material: they have a metaphysical dimension. In Amerindian cosmologies, including that of the Guarani-Kaiowá, plants, like animals, have and/or have had human form elsewhere in the cosmos. In this sense, plants are part of a council, a wider community of beings, which humans have access to. With this metaphysicality, plants, like other non-humans, possess insight and wisdom useful to humans. This is true for the Guarani-Kaiowá. That plants are ascribed personhood and related to as kin in Indigenous cosmologies such as this is 'not a metaphor'; it is based on metaphysical belief and practice of communicating with entities beyond the human and earthly realm (Hall 2011).[7] These contrasting visions, or ontologies, are represented in the notions of mono- and multi- culturalism and naturalism.

Communicating with plants' spiritual and human forms in other parts of the cosmos, Guarani-Kaiowá shamans access the wisdom and medicine of plants. However, this practice is under threat because ancestral lands and forests where medicinal plants and their *jarás* reside are under 'fazendeiro' ownership and subject to agribusiness development. The Guarani-Kaiowá deploy various strategies to resist this development and reoccupy their *tekoha*. These initiatives are supported by a strong cosmopolitics that involves socio-ecological-spiritual cohesion. To support and advance their campaign, the Guarani-Kaiowá have increased participation within research spaces, especially those that seek to harness Indigenous epistemology to promote recovery of their way of life (Pavão and Gisloti 2023).

The lenses of political ecology and political ontology offer a useful critique of power relations that underlie the unsustainable rationality of agribusiness, which poses a direct challenge to their way of life and cannot appreciate the Indigenous' medicinal plants. A handful of collaborative studies in Brazil have sought to demonstrate that Guarani-Kaiowá knowledge and practices with plants are not simply about healing physical disease: plants are key agents in a complex cosmopolitical web of human and nonhuman relations. Their protection is thus worthy beyond the rationales of pharmacological utility and socio-ecological benefit foregrounded by Western institutions.

Ethics and consent

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Competing Interests

The author has no competing interests to declare.

NOTES

[1] Translation note: italicised words and concepts are in Guarani; these were translated into Portuguese in the sources cited, from which they have been translated here into English. Words and concept in inverted commas are in Portuguese, as they appear in the references. The phrase 'not just plants, but also plants' is translated from Portuguese, 'as plantas não são apenas plantas' and 'como investigar plantas que não são apenas plantas, mas também são plantas' (Souza 2020: 23).

[2] This is the title in Guarani; in Portuguese it is 'Plantas Medicinais: Fortalecimento, Território e Memória Guarani e Kaiowá'.

[3] 'Lifeworlds' are socio-material worlds where experience is constructed and given meaning (Buttimer 1976).

[4] Referred to in Portuguese as 'xamas' (shamans) 'rezadores' (ones who pray), 'anções' (elders).

[5] Translated from 'o modo de ser e de viver' (Mura 2019).

[6] Cosmology concepts are described in English, translated from the Portuguese approximations found in João (2023a; 2003b) and Mura (2019; 2020).

[7] Borrowing from Tuck and Yang's 'Decolonization is not a metaphor' (2012).

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