Research article

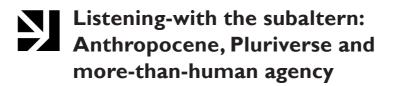# Listening-with the subaltern: Anthropocene, Pluriverse and more-than-human agency

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Abstract

The Anthropocene brings to the fore the need to foster ontologies that reject the modern "one-world world" (Law 2015) model, characterized by extractivism, dualism and human exceptionalism, requiring the enactment of pluriverses (de la Cadena & Blaser 2018) that recognize the heterogeneous clamor of human and non-human agency. As an attempt to listen-with those oppressed and silenced by the modern extractivist paradigm, in this paper, we propose the mobilization of relational, dialogic and non-dualistic methodologies that attend to subaltern and more-than-human worlds. Drawing on a variety of sources – such as the Parliament of Things, the Council of All Beings, the Pedagogy of the Oppressed, meditative and artistic practices –, our article speculatively engages with affective, situated, hybrid and counter-hegemonic methodologies that articulate contemplative practices, the arts, more-than-human agency and local communities, recognizing that politics, aesthetics and affect are intimately entwined. Our experimental endeavour is centred on three case studies that encapsulate some of the socio-political and technological tensions of our current zeitgeist – wildfires, geoengineering, and lithium mining –, speculating on how pluriversal methodologies can bring to the fore the many worlds silenced by the modern "one-world world".

Keywords: Anthropocene; Pluriverse; Subaltern; Speculative Methodologies; More-than-human agency; Affect

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Introduction

In her seminal book *Silent Spring*, Rachel Carson warned us about the "sudden silencing of the song of birds" (Carson 1962: 103), drawing our attention to the grim environmental consequences of the chemical industry. The silencing of the subaltern is one of the main tenets of modernity, as nature and non-dominant humans have been silenced in the name of progress, profit, growth and empire. As Maria Mies and Vandana Shiva (2014) would say, nature has been turned into a mine, rendered passive, lifeless and disenchanted. Modernity and its obsession with control and domination are fuelled by the silencing of the world, and this has backfired – climate change, pandemics, and industrial disasters have shown that we can no longer ignore the plethora of human and non-human voices silenced by modernity. In this sense, the Anthropocene should be seen as more than simply a geologic epoch or a geopolitical event: it is a reflection of the dominant ontological model – the modern "one-world world" (OWW) model (Law 2015). Therefore, as Morgan argues (2019: 252), the Anthropocene "is an opportunity to embrace a new ontology".

This article speculatively engages with a set of methodologies that disrupt the dominant ontological model of the Anthropocene – the modern OWW –, thus attempting to bring to the fore the pluriverses of human and non-human voices that have been systematically silenced by modern dualist and extractivist ontologies. Inspired by Spivak's (1998) earlier interrogation – *Can the subaltern speak?* – we now ask, in times of profound ecological, climate and social crises: *how to listen-with the subaltern?* Listening is fundamentally relational: it is "listening-with" — *with* each other, *with* other species, *with* other worlds. Listening-with attends to more-than-human entanglements and pays tribute to Haraway's idea of "sym", "together *with*". We must be-with, make-with the subaltern.

As the literature around the "Anthropocene" is inherently interdisciplinary, we are inspired by authors stemming from the environmental humanities, decolonial studies and science and technology studies alike. Building on this literature, the aim of this article is twofold: on the one hand, we aim to contribute to current debates around the ontological politics of the Anthropocene; on the other hand, we propose a set of speculative methodologies capable of *listening-with the subaltern oppressed by the OWW*, i.e., capable of engaging with those who have been silenced and rendered invisible by modern ontologies and the contradictions of contemporary capitalism. In other words, this article's contribution is to merge existing conceptual debates on the controversial nature of the "Anthropocene" with methodologies capable of considering those theoretical postulates.

The methodologies explored in our paper include a vast array of examples that support us in the disruption of the OWW, such as the Parliament of Things, the Council of All Beings, the Theatre and Pedagogy of the Oppressed, contemplative practices, and the arts. In addition, we engage with three case studies that display some of the socio-political and technological tensions of the dominant ontological model of the Anthropocene – wildfires, geoengineering and lithium mining. These case studies do not stem from empirical-based research; instead, they are introduced to assist us in speculatively imagining how pluriversal methodologies could bring to the fore human and non-human actors systematically silenced by modern ontologies – such as local communities, elemental forces, forests, oceans, the stratosphere and algae –, combining and recognizing the interdependency between politics, aesthetics and affect.

A pluriversal critique of the "Anthropocene"

The term "Anthropocene" was coined at the beginning of the century by the Dutch chemist Paul Crutzen and the American biologist Eugene Stoermer to designate our current geological epoch, characterized by climate change and extreme weather events, calling our attention to the inseparability between human activities, earth systems and biophysical and geological processes. In doing so, this concept announces a new "socio-geo-physical era", one where 'humans' have acquired bio-geophysical agency, placing the 'human' species as a planetary deep-time geophysical agent in geo-history (Latour 2014; Swyngedouw & Ernstson 2018) and elevating it to a biospheric supremacy (Malm & Hornborg 2014).

Nonetheless, while the Anthropocene puts the 'Anthropos' at the centre of geological narratives, it also sheds light on the life-threatening consequences of human actions to human and non-human actors alike, highlighting the vulnerability of the human species in the face of a plethora of risks (Chaplin 2017). As such, the Anthropocene puts a dent on long-standing illusions of human exceptionalism, a key pillar of the modern political project. Western Modernity's ontological architecture is based upon a set of "visible and invisible divisions" (Santos 2017: 71), which structure social reality in hierarchical dualisms – human/nature, man/woman, civilized/savage, reason/emotion. Historically, this dualist ontology has served to justify oppressive relations with those who are deemed as "inferior" because they are (constructed as) "close(r) to nature", "feminine", "savage" and/or "emotional/irrational" – namely, women, indigenous and traditional communities, racialized populations, the proletariat, the Global South, nature and non-humans.

The ontological politics (Mol 1999) of modernity, thus, are fundamentally rooted in a particularly violent relationship with subaltern subjects – those who have been systematically silenced, dominated, *not accounted for*. Our current socioeconomic system is fundamentally ingrained in this violent-exploitative ethos. Capitalism depends on the endless exploitation of "natural resources" and has historically relied on the exploitation of the subaltern who performs the unpaid – or precariously paid – labour needed to pursue capitalist's goals of infinite growth (Mies & Shiva 2014; Moore 2016; Barca 2020). Analysed through this perspective, the current ecological crisis is a grim illustration of the consequences of pursuing infinite growth in a limited world at the expense of "othered labour" (Salleh 2017). That is why critical authors have been denouncing the depoliticizing character of the concept "Anthropocene" (Bonneuil & Fressoz 2016; Swyngedouw & Ernstson 2019) because it ignores that not all humans – nor countries – have been equally responsible for the current socioecological degradation nor do they suffer its consequences evenly (Malm & Hornborg 2014; Moore 2016).

Consequently, alternative concepts have emerged: Moore (2016) proposes the term "Capitalocene", drawing our attention to how capital accumulation is a way of organising nature and the fundamental driver of environmental degradation. Similarly, Malm (2016) exposes the historical links between carbon emissions and capital accumulation, showing how the 'development' of industrial capitalist modernity was only possible by burning fossil fuels. Armiero (2021) introduces the term "Wasteocene", stressing the contaminating nature of capitalism's inherent drive for profit and accumulation, leaving behind indelible traces of toxicity. Hornborg (2015) advances the term "Technocene", highlighting how modern technological devices have been the backbone of industrial capitalism. Raworth (2014), taking as an example the dominantly male composition of the Anthropocene Working Group, suggested "Man-thropocene" as a more appropriate

concept, reflecting the gender imbalances in positions of power. Similarly, Solón (2019) proposes the term "Plutocene", pointing out the uneven distribution of power in the hands of a global economic, financial and political elite as the main culprit of the climate crisis. These concepts emphasize the destructive logic of industrial extractivist techno-scientific capitalism, highlighting its unequal consequences. In terms of class, gender, race, ethnicity, etc. –, and showing how the "Anthropocene", understood as a geologic epoch, is also a geopolitical one, as its causes and consequences are inextricably linked to the power relations underpinning social, economic and political systems (Riquito 2021).

However, as Haraway points out, it is important to recognize that "no species acts alone" (2015: 159). Industrial capitalism relied on the discipline of plants and humans alike to 'develop' and 'prosper'. The capitalist way of growing food – the plantation – has historically entertained an intense relation with *exterminism*, both of human and non-humans, namely plants, animals and microbes (Haraway & Tsing 2019). This was – Haraway and Tsing (2019: 5) argue – a "system of multispecies forced labour". Thus they propose the term "Plantationocene", drawing our attention to the *interspecies entanglements* that compose (compost) life on earth. In Haraway's words, "all earthlings are kin in the deepest sense" (2015: 162), and this is why it is about time that "we all started thinking about our situation in a way that includes plants, animals, microbes, and more before we destroy them all" (Haraway & Tsing 2019: 14).

Following this line of reasoning – which takes issue with human exceptionalism –, Haraway announces another concept: the "Chthulucene". This term is composed of two Greek roots: *khthôn* (meaning 'beneath the earth') and *kainos* (meaning 'now'). For Haraway, their combination names "a kind of timeplace for learning to stay with the trouble of living and dying in response-ability on a damaged earth" (2016: 2). The "Chthulucene" rescues the multiple "earth-wide tentacular powers and forces and collected things" and is an invitation to make together sym-chthonic, i.e., to "make-with—become-with—compose-with—the earth-bound" (Haraway 2015: 160–161), becoming a framework to *think-with* the more-than-human.

These conceptual proposals, thus, indicate that the "Anthropocene" is a controversial concept because the term itself overshadows the dominant political, economic and ontological narratives and structures that have generated unprecedented levels of ecological and climate destruction. These many alternative "scenes" denounce that it was the universalizing march of capitalist modernity – based on its "technopolitical fixes" (de Castro 2019), "market-based solutionisms" (Morozov 2014), human exceptionalism and patriarchal norms (Riquito 2021) – that has generated the climate and ecological crises. In other words, we are witnessing a crisis of a particular *way-of-doing-world* (Escobar 2018; Krenak 2019), i.e., the OWW model. Or, as put by Santos (2002: 13), we are currently "facing modern problems for which there are no longer modern solutions". The OWW metaphysics reduces difference, devours the Other (i.e., the colonized subaltern subjects, both human and non-human) and assumes there is only one single reality (Law 2015), silencing non-dominant and subaltern ontologies. This ontological "master model of humanity" (Barca 2020) is at the roots of the planetary crisis we face. To dismantle the master's house, we need to bring alternative ontologies to the modern, extractivist and speciesist project – i.e., *pluriversal ontologies,* which recognize the multiplicity of realities and the interconnectedness of all life on earth.

Pluriversal ontologies draw inspiration from the Zapatistas' struggle and their practices of democracy, aiming to construct "*un mundo donde quepan muchos mundos*"[1]. This

motto, argues Salleh (2020), is the very definition of pluriverse. In opposition to the globalizing civilizational aim of the OWW, pluriversal ontologies recognize a "World of Many Worlds" (de la Cadena & Blaser 2018). The pluriverse is both an "epistemological stance and a dialogic method to enhance appreciation of the multiple ways of knowing and being in the world" (Paulson 2018: 85) and a useful tool to conceive "ecologies of practices across heterogeneous(ly) entangled worlds" (de la Cadena & Blaser 2018: 4).

The "pluriverse" entails an active commitment to getting involved *with* and thinking *from* ongoing territorial struggles (Kothari *et al.* 2018; Escobar 2018). According to Escobar, socio-environmental resistances are "ontological struggles" because they "interrupt the globalizing project of fitting many worlds into one" (2017: 239). By inaugurating non-dualistic relational political ecologies and ontologies, pluriversal epistemic-ontologies are entwined with the ontological turn in social sciences. According to Escobar (2017: 241):

> *What defines this turn is the attention to a host of actors that deeply shape what we come to know as 'reality' but which the academy rarely tackled — things like objects and 'things', non-humans, matter and materiality (soil, energy, infrastructures, weather, bytes), emotions, spirituality, feelings, and so forth. What brings together these very disparate list of items is the attempt to break away from the normative divides, central to the modern regime of truth, between subject and object, mind and body, reason and emotion, living and inanimate, human and non-human, organic and inorganic, and so forth. This is why this set of perspectives can be properly called post-dualist. […] What we are witnessing with post-dualist, neo-materialist critical theories is the return of the repressed side of the dualisms — the forceful emergence of the subordinated and often feminized and racialized side of all the above binaries.*

The ontological turn recognizes the need to pay attention *to* and value the knowledge *of* the subaltern. Marisol de la Cadena refers to them as the "Anthropo-not-seen". This concept highlights their historical invisibility: "they simply cannot be — therefore they are not-seen, not-heard, not-felt, not-known" (2019: 482). The subaltern – those who are "less than humanized" (Salleh 2020), not accounted for in the "master model of humanity" (Barca 2020) and removed from official representation in hegemonic narratives (Swyngedouw & Ernstson 2018) – although irretrievably heterogeneous, carry the possibility of re-politicizing the dominant version of the Anthropocene through alternative ontologies departing from human-centred productivist-oriented hegemonic narratives. Pluriversal conceptualizations emphasize the importance of thinking within those configurations of life that escape the ontological occupation of the OWW (de la Cadena 2015). In making visible the subjects which were once invisible, in listening to those who have been silenced, the pluriverse *defies* Western Modernity's epistemic violence[2] (Spivak 2010; Dotson 2011; Brunner 2021) and its "practices of silencing" (Dotson 2011), *proposing* alternatives to its OWW model.

While this body of literature has put forward various theoretical frameworks to *make sense* of the "Anthropocene event" (Blok & Jensen 2019), very few scholars have focused on *how to listen-with the subaltern oppressed by the OWW*, i.e., how to engage with the clamour of human and more-than-human voices that the modern hubris has systematically silenced. Based on this literature review, in the following section we will speculate on pluriversal methodologies, exploring nonmodern (Pickering 2010) and hybrid devices that couple more-than-human agency, affect, politics and the arts to listen-with those historically subordinated by the dominant ontological logos.

Pluriversal methodologies: a tentative sketch

In this section, we explore methodologies that could be characterized as pluriversal. They attempt to bring more-than-human and non-dominant voices to the fore, putting forward alternatives to modern dualisms. We assume that methodologies are performative, as they enact particular forms of reality as well as specific invisibilities – "method assemblage does politics, and it is not innocent" (Law 2004: 149). Indeed, their effects can range from the reinforcement of the OWW model to the enactment of pluriversal entanglements between a wide range of heterogeneous actors and voices. The various examples unpacked in this section include Latour's Parliament of Things; the "Council of All beings"; the articulations of meditation, affect and environmentalism; couplings of art, more-than-human agency and the Anthropocene; as well as Paulo Freire's "Pedagogy of the Oppressed" and Augusto Boal's "Theater of the Oppressed".

The Parliament of Things

In his book, *We have never been modern*, Latour (1993) outlined the idea of a "Parliament of Things", an alternative to the Modern Constitution, bringing non-humans into the sphere of political deliberation by resorting to human representatives/mediators. The traditional mechanism of political deliberation - the Parliament - opens up to the plethora of pluriversal voices:

> *Let one of the representatives talk, for instance, about the ozone hole, another represents the Monsanto chemical industry, a third the workers of the same chemical industry, another the voters of New Hampshire, a fifth the meteorology of the polar regions; let still another speak in the name of the State [...]. The imbroglios and networks that had no place now have the whole place to themselves. They are the ones that have to be represented; it is around them that the Parliament of Things gathers henceforth (Latour 1993: 144).*

Later, he developed this project in greater detail, identifying a series of roles for human representatives of "things", such as politicians, managers, scientists, economists and moralists (Latour 2004). The presence of these experts would allow for the construction of a *quasi-object* (we could call it a pluriversal object) where, through deliberative processes, a specific sociotechnical conflict would be unfolded through the continuous production of propositions. The presence of different "sides"/"actors"/"parties" would allow for the continuous re-constitution of the pluriversal collective.

Latour's proposal was put in place in May 2015 at the Théâtre des Amadiers in Paris. Attempting to create a more-than-human/pluriversal alternative to the COP 21, Science Po students and foreign delegations were invited to dramatize a "Parliament of Things" to deliberate on the climate crisis (Latour 2017). The different delegations represented entities such as state and non-state actors, transnational actors, issues, territories and non-humans to negotiate a common world (Latour 2017). According to Latour (2015), this experimental theatre had four main goals: pedagogical (training students in negotiations of controversies); social science research (experimenting with ways of representing non-humans); natural science research (developing an alternative epistemology for matters of concern); and artistic (art and culture as scientifically and aesthetically relevant). For the French sociologist and philosopher, the theatre is a beneficial model to operationalize the Parliament of Things, highlighting the role of

culture, arts and imagination in the enactment of a common world, suggesting that the performance of pluriversal politics inevitably requires particular methodological arrangements combining politics, affect and more-than-human agency (Latour 2017).

It could be argued that the Parliament of Things espouses a "flat ontology" that does not sufficiently attend to the differences between heterogenous non-human entities. Another limitation concerns the fact that Latour's proposal still depends on the role of "human experts" and may also reproduce dominant versions of "language" assenting on the hegemony of the "rational argument". Moreover, the role of affect seems to be ignored by Latour's proposal. As we will see in the following section, it is key to engage with more-than-human agency, as representation and subjectification are inevitably entwined.

The Council of All Beings

The Council of All Beings is a communal ritual developed by Joanna Macy and John Seed, two deep ecologists. It consists of a set of practices to overcome anthropocentrism, contributing towards a symmetrical relationship between humans and non-humans:

> *The name "Council of All Beings" has come to be used in two ways. In the narrower sense, it refers to a ritual form, a council circle of one-and a-half or two or three hours, where people gather to speak on behalf of other species. The term is also used more inclusively to refer to a longer process, one that runs from one to several days and includes exercises and activities leading up to and flowing from the ritual proper. (Macy & Fleming 1988a: 97)*

Their proposal couples contemplative and shamanic practices, more-than-human agency and environmentalism. The workshops aim to allow participants to abandon their skin-encapsulated ego, i.e., the modern self, ideally assisting participants in reshaping their engagement with non-humans and developing resilience in the face of environmental degradation. It draws on the reconfiguration of human subjectivity to better respond to the environmental and climate crisis.

The Council includes three phases: mourning, remembering, and speaking from the perspective of other life-forms (Seed 1988: 14). Initially, one should be able to hear the earth's cry – mourning usually involves displaying sorrow and compassion towards the destruction of the environment. The second stage involves remembering, as participants should realize that they are deeply entangled with non-humans, becoming aware of interconnectedness. Various methods are mobilized, including a process called "evolutionary remembering", where participants lie down or sit in a comfortable position, going through a guided meditation on the origins of the Universe and the evolution of life (Macy & Fleming 1988a: 106). Finally, the Council includes speaking for a non-human entity. Before doing so, one meditates to identify with a non-human. After the being has emerged, one practices meditation to "merge" with the non-human. When this process is carried out, participants (ideally wearing masks) are assembled, and the ritual begins:

> *Humans! I, Mountain, am speaking. You cannot ignore me! I have been with you since your very beginnings and long before. For millennia your ancestors venerated my holy places, found wisdom in my heights. I gave you shelter and far vision. Now, in return, you ravage me. You dig and gouge for the jewel in the stone, for the ore in my veins. Stripping my forests, you take away my capacity to*

hold water and to release it slowly. See the silted rivers? See the floods? Can't you see? In destroying me you destroy yourselves. (Macy & Fleming 1988b: 87)

After some rounds of interventions, the ritual leader thanks the entities for expressing themselves and asks them to share their powers with the participants – for example, the far-seeing eye of the condor, the fragrance of the wildflower, etc. (Macy & Fleming 1988b: 88-89). This ritual is not perceived as an end in itself, but as a way to form environmental activists, providing them with alternatives to anthropocentric ways of being and thinking. The Council, thus, is expected to trigger real-world impacts, providing a "larger context for action" (Seed 1988: 15), becoming an integral dimension of environmental activism and propelling real change. Furthermore, this methodology is a potent illustration of the articulations between affect, more-than-human agency and pluriversal ontologies, allowing human participants to feel empowered and supporting their environmental actions.

However, it could be argued that one of the limitations of the Council of All Beings is the attempt to "channel" or "represent" non-human entities, translating them into the socio-political sphere through humans, thus reproducing anthropocentrism. Another criticism concerns its emphasis on emotional and inner aspects, with humans being "empowered" by more-than-human agency, which could be understood as an expression of new-age spirituality. However, this approach allows us to reflect on possible ways of engaging with more-than-human agency, recognizing the need to reshape the modern self and emphasizing the role of subjectification devices to listen-with the subaltern.

Meditation, environmentalism and affect

Although the articulations of mindfulness, neoliberalism and capitalism are concerning (Purser 2019), it has been argued that the ontological politics of meditation are multiple (Carvalho 2021) and that certain practices may offer counter-hegemonic pluriversal alternatives to dominant modern forms of subjectivity, supporting ways of engaging with more-than-human agency. The mindfulness tradition of the Zen Master Thich Nhat Hanh, the leading promoter of engaged Buddhism, for example, is informed by the ontology of Interbeing (Hanh 2001), illuminating the entanglements between humans and non-humans, living and non-living. The mindfulness practices of Thich Nhat Hanh rely on associations between performances, environments and non-humans to foster nonmodern forms of affect (Carvalho 2014). These practices – as well as shamanic and indigenous techniques or rituals – foreground ways of disassembling the modern self (Pickering 2010), allowing humans to embrace ontologies of interconnectedness, generating pluriversal alternatives to dualist forms of subjectivity, thus offering new ways of engaging with more-than-human agency (Carvalho 2017).

The emphasis on interdependence and the explicit engagement with specific elements (such as water and air) present in these meditation practices may allow humans to merge with pluriversal intensities, often neglected by the dominant ontological and political narratives. In this sense, they may constitute forms of ontological theatre (Pickering, 2007) that disrupt modern separations between people, things and the environment. That is why mindfulness has been explored as a potential research method to enhance intersubjectivity and to trigger relational forms of affect (Whitehead *et al.* 2015). Furthermore, some scholars argue that certain forms of meditation can reinforce environmental values (Wamsler & Brink 2018), and Schmid and Taylor-Aiken (2021)

have recently advanced that mindfulness practices play a role in grassroots environmental movements by enacting alternatives to the modern self.

The arts and more-than-human agency

We have witnessed several collaborations between social scientists and artists for the past decade, fostering dialogues between science, academia, and the arts (Davis & Turpin 2015; Engelmann 2015; McCormack 2014). These synergies suggest that the arts are a powerful way of reconfiguring the methodological and expressive repertoire of social sciences, engaging with non-human and elemental forces (Latour 2017; Saraceno *et al.* 2015; Wolfe & Whiteman 2016; Jackson & Fannin 2011). Indeed, art can foreground the emergence of "alien agency" (Salter & Pickering 2015), generating instances of ontological theatre that provide clues on how to address the challenges of our current zeitgeist, combining politics, affect and aesthetics. For example, Landau and Toland (2021) argued that political action is stimulated when the senses are galvanized through artistic engagement. Moreover, within non-representational theory (Thrift 2004) there has been increased concern with the articulations of ethics and aesthetics, often turning to the arts and the sensate (Harrison 2000) to identify "new modes of ethical and aesthetic inhabitation" (McCormack 2002: 473).

Two emblematic examples that illustrate performatively engaging with more-than-human agency are the Museo Aero Solar[3] and the Coral Empathy Device[4]. The Museo Aero Solar was developed by Tomás Saraceno and is made of used plastic bags with new sections added each time it flies. The assembled plastic bags become artificial clouds engaging in nomadic patterns of flight. According to the artist, this device can be understood as a new way of inhabiting the earth, where civilization is moved by solar power and freed from the earth's surface. Kat Austen developed the Coral Empathy Device, and its goal is to translate the Corals' "Umwelt" (Von Uexkull 2010) into human experience, generating (human) empathy towards these non-human beings that are affected by plastic and acoustic pollution. In practice, the Coral Empathy Device, which has the form of a sphere, is worn over the head, allowing humans to hear sounds of the ocean near coral reefs in Norway. With this experience, the artist generates an immersive experience that disrupts conventional ways of engaging with the world, suggesting that art forms can support the development of empathy towards non-humans, allowing us to imagine ways of listening-with those silenced by the dominant narrative.

The Pedagogy and Theatre of the Oppressed

The "Pedagogy of the Oppressed" is an adult literacy method developed by the Brazilian pedagogist Paulo Freire. Freire (1967) calls the hegemonic teaching method "banking education" because the student is merely perceived as a "recipient" of information", reproducing "knowledge" without developing critical thinking. Alternatively, Freire proposes a critical method, which allows humans to develop "*conscientização*"[5], suggesting that education should be coupled with socio-political engagement. Freire advocates articulating knowledge and students' lifeworlds, requiring teaching methodologies that adapt to their particular situations, concerns and aspirations. Freire's method explicitly relies on students' situatedness to guide the learning process, resorting to "generative words" stemming from their local contexts with significant social and practical

meaning (Freire 1970). The Brazilian pedagogist was a strong apologist of dismantling the teacher/student hierarchy, promoting an "ecology of knowledge" (Santos 2007). Students would share a series of local practices and experiences, thus decentring epistemological authority from teachers. His pedagogical approach is dialogic, explicitly integrating local knowledges and practices, geared towards the development of social and political consciousness, allowing students to become aware of their situatedness as "oppressed" (or, put differently, "subaltern") and to develop epistemological tools to overcome oppression well beyond literacy.

Freire's methods have been implemented in other disciplinary settings, leading, for instance, to developing the "Theater of the Oppressed" by the Brazilian playwright Augusto Boal, mobilizing situated publics in the resolution of social and political issues. The Theatre of the Oppressed is a political-theatrical method whose aim is to *transform* the actors and the spectators and, more broadly, the socio-political structures they are part of. This method is a tool for social emancipation: its main objective is to raise "conscientização" about oppression, empowering participants to act against it (Boal 1979). Boal's technique blurs the boundaries between actors and spectators – the latter being considered "spect-actors" – as a means to engage everyone in the theatrical process.

Freire's and Boal's proposals are beneficial to bring to the fore "ecologies of knowledge" (Santos 2007), especially in intercultural contexts involving local and indigenous communities and the Global South, recognizing that all epistemologies are politically situated.

Pluriversal methodologies in practice

In this section, we speculate on how pluriversal methodologies can be mobilized to listen-with the subaltern oppressed by the OWW in the Anthropocene. Drawing on the assumption that sociotechnical controversies are performatively assembled through the mediation of methodologies, we mobilize the approaches unpacked in the previous section, allowing us to imagine ways of unfolding pluriverses related to wildfires, geoengineering and lithium mining. Our situatedness decisively informs these three examples as Portuguese academics: wildfires and lithium mining are ongoing national controversies, and we have recently conducted public participation exercises with geoengineering. We have associated each case study with a specific natural element: fire, air, water and earth. This section is highly experimental and couples methodology, art, politics and affect, speculatively engaging with heterogeneous pluriverses.

These methodologies are performative, i.e., they aim to tentatively engage with alternative ontologies that may bring to the fore those voices, experiences, entities and forms of affect undermined by the OWW. They attempt to "listen-with" the subaltern, thus exploring the possibility of enacting nonmodern ontologies through methodological speculation. This speculative exercise is also deeply entwined with our own personal and institutional situatedness. Our research centre has historically attempted to promote "ecologies of knowledge", engaging with ontologies and voices from the Global South to imagine alternatives to modern hegemonic epistemologies. In the past, we have engaged with counter-hegemonic methodologies – such as Freire's Pedagogy of the Oppressed and Boal's Theater of the Oppressed – to produce alternatives to dominant approaches regarding public engagement with emerging technologies (Carvalho &

Nunes 2018). Moreover, Author 1 is a researcher in the field of Science and Technology Studies and a long-term meditator, with interest in the potential of contemplative and artistic practices to engage with sociotechnical controversies and non-human agency more broadly. Author 2 is both a political scientist and a feminist anti-capitalist activist who is currently deeply involved in resistance against lithium mining in Portugal.

Drawing on current debates within speculative design (Broms, Wangel & Andersson 2017), the various exemplars that are put forward in the following sections can be understood as [methodological] prototypes, i.e., speculative attempts to trigger nonmodern ways of engaging and listening-with the subaltern, exploring the possibilities - the "what-if" – emerging from heterogenous articulations of affect, futures, fiction, the arts and non-human agency. These prototypes will be unpacked with case studies that reflect our situatedness as Portuguese academics – wildfires, lithium mining and geoengineering.

Fire: wildfires

Fire has been considered the flagship element of the Anthropocene (Clark 2020), reminding us of the Promethean hubris to dominate and adapt the natural world to human will through science and technology, often with negative consequences. Wildfires, thus, are frequently pointed out as one of the extreme weather events that best illustrate the disastrous consequences of climate change.

The 2017 wildfires in Portugal caused 119 human casualties, and 442.000 hectares of forest burned (ICNF 2017). Two significant wildfires occurred: June 17th severely affected the Municipality of Pedrógão Grande, with 66 deaths and 204 injured people, and the wildfires of October 15th affected mainly the centre and northern regions, killing more than 50 humans and at least half a million animals (Simões 2017). The 2017 wildfires are the most devastating natural disaster in Portugal's recent history, illustrating a tension between elemental forces, forest management, non-humans (including introduced invasive species such as eucalyptus) and human collectives with different visions, aspirations and interests. Stakeholders include a plethora of human collectives such as paper companies (with a vested interest in growing eucalyptus, a highly profitable – yet flammable – species), environmental associations, landowners, politicians, local communities, trees, soils, wild animals and ecosystems.

This controversy is particularly interesting to speculate on how to develop pluriversal politics to attend to this multiplicity of subaltern human and non-human voices. We propose three methodological approaches: an experimental parliament informed by the Parliament of Things and the Council of All beings, a contemplative practice geared towards engaging with wildfires and non-human agency, and an artistic device to engage with the forest.

The first methodological endeavour is inspired by the Parliament of Things and the Council of All Beings. With the provisional title "The Parliament of Fire", this parliament could take place in Pedrógão Grande to deliberate on tackling wildfires. Potential participants could include members of associations created following the 2017 wildfires (Associação de Vítimas de Pedrógão Grande; Associação dos Familiares das Vítimas do Incêndio de Pedrógão Grande); representatives of environmental groups and grassroots movements involved in reforestation campaigns; representatives of paper companies; local politicians; representatives of non-humans (such as biologists, geologists and geographers). This experimental parliament could lead to a

set of – potentially contradictory – propositions on wildfire governance, illustrating the heterogeneity of wildfire pluriverses and the diversity of human and more-than-human forces.

The second methodological experiment consists of a meditative practice centred on wildfires, illustrating how this sociotechnical controversy can be articulated with nonmodern types of affect. Within Buddhism, some forms of meditation involve fire in various forms. Still, the experimental practice we propose focuses specifically on wildfires, aiming to enhance embodied awareness of the heterogeneous assemblages mobilized by this particular phenomenon. This would involve four different stages: first, participants would practice concentration to slow down the flow of thoughts (*samadhi*), focusing on the breath to bring their minds and bodies to the present moment; the second stage would involve bringing to mind all the suffering caused by wildfires, including images of charred human and non-human bodies, destroyed ecosystems, burned down houses, and the human and non-human panic created by these events; later on, participants would come back to their bodies, evoking images of landscapes and soils regenerating, trees growing back, rivers flowing, and wild animals and local populations living symbiotically with the natural world; finally, this practice would involve metta or loving-kindness meditation, with participants sending positive energies to all humans and non-humans affected by wildfires.

Finally, we propose the development of artistic and performative practices. Here, we draw inspiration on the Coral Empathy Device and on the work of the Polish-Brazilian artist Frans Krajcberg, who created sculptures resorting to burnt tree trunks to give voice to Amazonian trees destroyed by fires, logging and monocultures (Vieira 2021). We propose the development of an installation combining immersive environments, virtual reality and specific sensations to allow participants to think [and feel] like a forest (Kohn 2013). With the provisional title "Becoming Forest(s)", this device could be installed in a native hollow tree in the centre region of Portugal. Participants would enter this tree feeling the various sensations caused by their bodies touching wood, breathing deeply and embodying the mossy atmospheres of the forest. Simultaneously, participants would wear a VR headset playing a video depicting different aspects of forest worlds – trees, wild animals, wildfires, and regenerative practices – throughout different seasons. This would allow for the emergence of an experience of impermanence, Interbeing and rootedness, with the tree providing, in an embodied way, the natural support to overcome the suffering and destruction caused by wildfires. This experiment would merge natural and technological worlds, illustrating how human and more-than-human agency can be coupled to trigger nonmodern forms of affect.

Air and water: geoengineering

Geoengineering refers to the technological manipulation of earth systems to avoid the disastrous consequences of climate change, and there are two primary forms of geoengineering: Solar Radiation Management (SRM) and Carbon Dioxide Removal (CDR). SRM involves reflecting solar radiation back to space to counterbalance the heat triggered by greenhouse gases in the atmosphere (Szerszynski *et al.* 2013: 2809). CDR aims to directly remove CO_2 from the atmosphere, resorting to technologies that increase the natural capacity of carbon sinks (plants, oceans and soil). Geoengineering is thus entwined with manipulating air, water and the earth alike. Here we focus on technologies that manipulate two of these natural elements: air and water. Geoengineering

– including its definition – is a highly controversial topic (Hamilton 2013, 2014; The Breakthrough Institute 2018), and in the Global North numerous public engagement exercises have been organized over the past ten years (Bellamy & Lezaun 2015; Buck 2018; Cox *et al.* 2020).

In order to bring to the fore the pluriverses of geoengineering – whose potential stakeholders may include the whole planetary populations, both human and non-human –, we will speculate on two different experimental methodologies: the creation of utopian/dystopian scenarios as a way to foster future-oriented social imagination; and exercises inspired by meditative practices.

Geoengineering is an emblematic illustration of the OWW, as it assumes that the atmosphere and the ocean can be manipulated to curb the negative consequences of extractive capitalism (Carvalho *et al.* 2021). It has thus been argued that the subaltern should be the ones engaged in geoengineering discussions (Whyte 2018). More recently, there have been attempts to use fiction as a qualitative research method (Marsh *et al.* 2017), challenging the realist and representational undertones of social sciences. Combining these two concerns, in May 2021 we organized a deliberative event on geoengineering with "situated" publics – activists, representatives of environmental groups and science communicators. Participants faced dystopian and utopian scenarios involving geoengineering and were asked to deliberate on how to govern specific SRM and CDR applications in 2030 and 2050. These exercises involved citizens who are often absent from decision making, allowing them to discuss technological applications with a potential future impact, drawing on their subaltern situationality to deliberate on geoengineering, thus opening the pluriverses of these applications.

Meditative practices inspire the other proposed methodologies, and they were thought of as a way of listening-with the potential subalterns of the two main geoengineering applications: SRM and CDR. With the provisional title "the SRM Dance", the first one is inspired by Sufi Whirling, a practice belonging to the mystical branch of Islam where participants attain altered states of consciousness through dance, articulating movement, repetition and spirituality. "The SRM Dance" would mimic the choreography of sulphate particles and their engagement with the atmosphere[6] and multiple human and non-human beings. It would consist of an active meditation where humans, through movement, rhythm and kinaesthetic awareness, would enter a state of trance, contemplating SRM interactions with air, plants, humans, non-human animals, and the oceans throughout time and space. The other speculative methodology we suggest is developing a device combining guided meditation and immersive environments, with the provisional title "Becoming Algae", because some CDR proposals may, in the future, rely on genetically modified algae to optimize ocean carbon sinks (Singh & Dhar 2019). Isolation tanks, which often disrupt normal states of consciousness (Lilly 1972), could be filled with algae to generate an affective atmosphere evocative of CDR ontologies. After entering the tank, human participants would progressively attain a state of Yoga Nidra induced by a guided meditation. The instructions would then emphasize the sensory engagement with water and the slimy touch of algae, inviting participants to imagine how these non-human bodies were re-engineered to better absorb the CO_2 generated by human civilization. "Becoming Algae" would allow humans to be embraced and cared for by algae in a safe affective environment, evoking how the couplings of humans and non-humans in a state of suspended animation can illustrate how more-than-human agency is mobilized – and reshaped – to care for the human collective in a pluriversal nonmodern way.

Earth: lithium mining

In the northern mountains of Portugal lays one of the world's most coveted natural resources: lithium. This metal is key to supporting the European Union's (EU) energy transition towards carbon neutrality, as lithium batteries can be used for electric vehicles and renewable energy storage. The Portuguese government aims to exploit its national reserves because lithium mining is imagined as an opportunity to give the country a leading position within the EU.

As we write this article, in September 2021, lithium mining is approaching the northern regions of Portugal by leaps and bounds. The largest lithium exploration project in Western Europe has reached the final stage of approval in July 2021[7]: the Barroso Mine project. To be developed by Savannah Resources, a British multinational – this project contemplates a concession area of 593 ha. The average lithium extraction from the mine is expected to approach 1,450,000 tonnes per annum for 11 years (Carballo-Cruz & Cerejeira 2020). Covas do Barroso is an agricultural village dominated by livestock production and crops typical of mountainous regions – its 262 inhabitants preserve traditional ways of working the land and treating animals. In 2017, Covas gained the classification of World Agricultural Heritage, given by the Food and Agriculture Organization of the UN. This green landscape, where pristine water flows in abundance and the air is pure beyond compare, is now threatened by the EU's first and most extensive "green mining" project.

This controversy perfectly illustrates the paradoxes of the EU's Green Deal, justifying intensively extractivist practices in the name of tackling climate change. We argue that Barroso – and its human and non-human populations – are being turned into a "sacrifice zone" (Lerner 2010; Klein 2014) or, more accurately, into a "green sacrifice zone" (Zografos & Robbins 2020). "Sacrifice zones" are geographical areas that have been environmentally razed through industrial-technological interventions for the sake of capitalist development, generally in very isolated territories populated by already vulnerable communities. In the energy transition context, we argue, along with Zografos and Robbins (2020), that these territories were turned into "green sacrifice zones" since their plunder is justified in the name of the 'green' transition.

Lithium mining is particularly interesting to speculate on developing methodologies that allow us to listen to subaltern stakeholders. Human stakeholders include the mining company, the Portuguese government, mining lobbies, and the EU, on the one hand, and local communities, local anti-mining associations (Associação Unidos em Defesa do Barroso; Povo e Natureza do Barroso), national environmental associations, and climate justice activists, on the other (subaltern) hand[8]. Soils, water, air, dust, animals and ecosystems are the non-human forces at stake. The three examples we propose include a poetry workshop; a "Theatre of the Oppressed" session to listen-with local communities; and experimental artistic practices engaging with soil, caring for it, contrasting with the "technoscientific timescape" (de la Bellacasa 2015) of the mine.

First, a poetic inquiry could be developed in Barroso, allowing local inhabitants to tell stories about their territories, past generations, recalling oral legends and myths. In times of profound ecological sorrow, recalling and paying tribute to our ancestral memory is a way to defy the accelerated rhythm of destruction (Krenak 2019). Then, this oral exercise would pay homage to Barroso's populations' way of living, their past and present relationship with each other and with non-humans, allowing them to reflect on how these dynamics would be disrupted if the project goes forward. Poetry supports geographical research because of its "affective power, […] which is

helpful to express particularly emotional aspects of spatial experience and to promote empathy across difference" (Paiva 2020: 1). Poetry can generate affective atmospheres that couple sensations, insights, emotions, and imagination, supporting the collective recognition of local experiences and narratives. In Barroso, this would be a useful method to de-materialize their territory, recognizing the importance of sensory and affective geographies in ongoing territorial struggles and fostering more-than-human forms of affect.

A Theatre of the Oppressed exercise could be held at Covas do Barroso. Ideally, actors would be local associations members against lithium mining and environmental associations/collectives; the "spect-actors" would be the rest of the local population and neighbourhood communities. A first enactment would represent a future reality, i.e., the construction of the mine and its likely impacts: the environmental, climate and social damages for Barroso and its populations, on the one hand, and the financial and economic prosperity for the mining company, on the other hand. Later on, "spect-actors" would replace the actors, re-staging the scene until they reached a consensus on their desired future. This event would empower the local (subaltern) community, exposing them to the factors of their oppression while giving them the tools to react against it.

The third methodological experiment is inspired by Andy Weir's work: the *Pazugoo* art project, a constellation of 3D-printed figures proposed as a demonic personification of nuclear waste (Weir 2016). Weir's work navigates between sensory experience and more-than-human scales of deep time, turning art into a means to listen-with more-than-human agency. Drawing inspiration from *Pazugoo*, local artists could collaborate to create and design artistic pieces engaging with non-human and organic forces, such as soil, water, air, dust, etc. The project proposed by Savannah Resources is an open-pit mine, which means that lithium extraction would interact with soil and impact the quality of the water and air. On the one hand, artists could also develop a sensory experiment that would embody the pain, distress and ache of these elements; or, as Weir does, they could present an art installation in which these non-human forces would *turn against* humans, or in which these non-human forces would make a surge in a demonic figure, rendering humans wary of the future consequences of present actions.

On the other hand, artists could engage in *caring* practices. As a counterbalance to the mining project, which views soil as a "resource" to be commodified and exploited, artists could develop projects where the soil is portrayed as a living more-than-human community. These practices would make visible what was once invisible, namely the timescales of non-humans, which fundamentally differ from the productivist rhythms of the mine. As Puig de la Bellacasa (2015) suggested, making time for these deeper-earth timescales is a form of "care time" that should be seen as a regenerative practice in times of ecological breakdown. These artistic practices resonate with Haraway's (2015) suggestions of further extending our kin ties, to make-*with* and become-*with* the earth-bound.

Conclusion

This article was a provisional attempt to imagine ways of disrupting the OWW, engaging with pluriversal methodologies to bring to the fore a wide range of human and non-human voices that modern ontologies have systematically silenced in the

Anthropocene. To listen(-with) the subaltern, we engaged with a set of practices that couple politics, affect, territories, the senses and more-than-human agency. Drawing on the case studies of wildfires, geoengineering and lithium mining, we speculated on how to bring to attention human and non-human subaltern, imagining various ways of engaging local communities and a wide range of non-humans, such as elemental forces, algae, trees, soils and the stratosphere.

We argued that pluriversal methodologies are ways of countering modern, hegemonic and extractivist versions of the dominant ontological model of the Anthropocene. They allow us to *listen-with* and be performatively affected by the agency of collectives systematically subordinated and silenced by OWW ontologies, paving the way for the emergence of nonmodern, pluriversal politics that disrupt modern narratives and structures. These methodologies are ways of "staying with the trouble" (Haraway 2016), triggering forms of affect that contrast with modern ones – they disrupt and reconfigure our senses, allowing our bodies to resonate with more-than-human suffering, eliciting ways of coping with a world falling apart. The different forms of experience linked to these exercises may indicate that to listen-with the subaltern our affective architecture should be reassembled, thus decolonizing our bodies and selves from dominant OWW devices of subjectification. The aim of these methodologies is not to reach some form of closure but to allow the clamour of pluriversal forces to resonate with human and non-human bodies. In doing so, they reshape politics, affect and modern illusions of control, enabling more-than-human agency to guide us into a time *yet to come*, "as if the stranger or foreigner held the keys" (Derrida 2000: 121).

Acknowledgments

Endnotes

1. Usually translated as "a world where many worlds fit".

2. Spivak (1998), in her seminal essay Can the Subaltern speak?, uses the term "epistemic violence" to designate the silencing of marginalized groups. This term sheds light on colonialism's long-lasting consequences – not only socio-politically but also epistemologically. Indeed, colonialism has dismissed and downgraded, for centuries, other, non-western knowledge. For more debates on this matter, see Spivak (1998; 2010), Dotson (2011), Brunner (2021).

3. The following website provides some pictures of Saraceno's project: https://www.estherschipper.com/exhibitions/282-anthropocene-monument-with-tomas-saraceno.

4. https://katausten.wordpress.com/the-coral-empathy-device/.

5. Often translated as "conscientization".

6. SRM often involves the injection of aerosols into the stratosphere that would then disperse and create a protective shield against solar radiation.

7. Savavannah Ressources has delivered its Environmental Impact Study (EIA) to the Portuguese Environment Agency (APA). The APA then placed the EIA in public consultation, for about 2 months.   During the public consultation period, APA revealed that it received around 170 participations. This period ended in July 2021, and the APA's final decision has since then been awaited.

8. This is an ongoing and recent controversy. As such, aside from the pro-mine developers and the mine opponents, there are some stakeholders (namely, political parties and climate justice groups) who still haven't developed a public and clear stance on the issue.

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