

ORIGINAL ARTICLE

Performative Listening with Trees in the Sonic Ecology of Forests

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Abstract: This article reflects on the study of performative listening with trees in the sonic ecology of forests, based on a practice-based multispecies ethnography conducted in distinct forests of Turkey. By integrating the concepts from sound studies, performance studies, and posthumanist theory, I present performative listening as a method that highlights the significance of embodied, multisensory engagement with the sonic ecology of forests. Drawing on fieldwork insights, I demonstrate how performative listening can serve as a tool with potential for enhancing empathy and understanding of plant agency. This practice advocates a more inclusive approach to multispecies interactions by emphasising the transformative impact of encounters and sound.

Keywords: Performative Listening, Sonic Ecology, Forest Soundscape, Agency of Trees, Encounters

Trees are among the most dominant species in forests—ecosystems built and inhabited by various living and non-living beings. Despite the ubiquitous presence of trees, ethnographic studies in forests have predominantly focused on animals¹, often leaving trees as passive, non-agentive, and unresponsive entities.² A reason for this seemingly innocent disregard, especially concerning sound, may be an anthropocentric bias that assumes trees cannot perceive sound due to their lack of human-like auditory organs.

This article reflects on the study of performative listening with trees within the sonic ecology of forests, which aims to move beyond anthropocentric bias. By considering trees as deep listeners, I developed an innovative method for sensing sounds that can challenge the “non(s)” of human perception. The research is based on a practice-based multispecies ethnography I conducted with participants in different forests across Turkey. The performative listening method³ provides a mode of listening that engages not only the ear but the entire body and senses to explore whether this practice allows us to ontologically relate with other-than-human beings.

In this article, I will introduce the performative listening methodology and outline its theoretical underpinnings. I will present the findings from the practice-based multispecies ethnography to discuss how sounds affect encounters between multiple agencies and the listeners’ perception of the environment and trees. Through this study, I aim to demonstrate that performative

¹ Nonhuman studies have seen significant growth and development over the past few decades, encompassing different academic and cultural contexts. However, until recently, the focus in these studies has increasingly been on the relationship and interaction between animals and humans that allows for more concrete reactions to be observed (for discussion on plant blindness and animal exceptionalism, see Grusin, 2015; Balding and Williams, 2016; Montgomery, 2021; Middelhoff and Peselmann, 2023). The tendency to focus on animals has also led to the term “non-human” becoming perceptually synonymous with animals, thereby excluding other species (see chapters of Timothy Morton and Jane Bennet in *The Nonhuman Turn*, edited by Richard Grusin).

² For alternative perspectives on the anthropological study of trees, see Descola, 2013 and Daly, 2015.

³ The term “performative listening” was previously used by Chris McRae (2014) in his book *Performative Listening: Hearing Others in Qualitative Research* to introduce a methodology grounded in his experience in performance studies and communication. McRae’s concept of performative listening serves as a methodological tool for researchers in qualitative studies to engage reflexively with their subjects. It focuses on the cultural and ethical dimensions of listening. His methodology draws on performance studies by using performance as both a metaphor and a method to understand cultural interactions and employing performativity to highlight how listening can be an ethical, reflexive and dialogical practice. In contrast, the performative listening methodology I present here is an experiential practice for participants and researchers to deeply engage with their environment —particularly forests— through embodied and sensory experiences. It emphasises the new materialist, phenomenological, and ecological aspects of listening by aiming to create a sense of unity and interconnectedness with trees.

listening, as a practice-based methodology, can serve as a valuable paradigm in multispecies ethnography that enhances researchers' perspectives on plant agency.

1. Sonic Ecology

The term “sonic” is an adjective that refers to something “done by means of sound waves,” derived from the Latin *sonus*, which means “sound.”⁴ Sound is usually defined as vibrations that travel through the air or another medium. When these vibrations reach the ears of humans or animals, they can be perceived and identified as sound. This definition limits the meaning of “sonic” to the presence of an ear and its audible range. The term ecology refers to the “branch of science dealing with the relationship of living things to their environments,” a concept coined by German zoologist Ernst Haeckel as *Ökologie*, from the Greek *oikos*, meaning “house, dwelling place, habitation.”⁵ The Merriam-Webster Dictionary gives a second definition as “the totality or pattern of relationships between organisms and their environment.”⁶ In this context, one can define sonic ecology as a science that explores the relationship between living organisms and their environment through sound waves within the audible range, similar to other sound-related ecologies, such as acoustic ecology, soundscape ecology, ecoacoustics, and sound ecology.

Acoustic ecology emerged as an interdisciplinary field focusing on the meanings and relationships between humans and their sonic environments. It examines how sounds influence human experiences, behaviours, and interactions with their surroundings (Truax, 2019). Soundscape ecology, introduced by Pijanowski et al. (2011), integrates principles from landscape ecology and bioacoustics to study the ecological context of all sounds, encompassing biological (biophony), geophysical (geophony), and human-made (anthrophony) sources. The field distinguishes itself by examining the ecological significance of all sounds emanating from a landscape. Ecoacoustics, introduced during an international meeting in 2014, broadens the scope to include plant sounds and uses advanced technology for sound analysis. It aims to study the role of sound in ecological

⁴ https://www.etymonline.com/word/sonic#etymonline_v_23883 retrieved, 10.06.2024.

⁵ <https://www.etymonline.com/search?q=ecology> retrieved, 10.06.2024.

⁶ <https://www.merriam-webster.com/dictionary/ecology> retrieved, 10.06.2024

interactions and ecosystem health (Farina, 2018). On the other hand, Jeff Todd Titon takes a phenomenological approach and proposes sound ecology as a concept rather than a discipline or a field of study. His notion of sound ecology emphasises an ecological way of being and knowing, focusing on interconnectivity and cooperation through sound (Titon, 2020).

Titon addresses two key issues: vibration and here-ness. He invites us to consider the vibratory effect of sounds that can be felt in the body, whether it is the body of a human, animal, or plant. This vibratory effect makes us aware not only of the “here-ness” of the sound source but also of the presence of sound itself that signals “Here I am” (Titon, 2020, p. 284). At this point, I would like to return to the beginning of this section. Like many other human-centred concepts, the definition of sound is inherently anthropocentric. The existence of sound depends on the presence of a hearing organ in either human or nonhuman animals. This implies that every vibration transversing the air or another medium must fall within the listener’s auditory range to be recognised as sound. But who is the listener? What if the listener lacks an auditory organ, such as an ear, yet can “hear” or, more accurately, “sense” sounds that are beyond the auditory range of humans or nonhuman animals? In this regard, vibration should be considered a fundamental aspect of a more comprehensive definition of sound, regardless of whether the listener is a human, an animal, a plant, or any other kind of material entity.

By emphasising Henry David Thoreau’s experiences with sound vibrations, Titon’s inferences about the effect of vibration are an attempt to offer a more comprehensive definition of sound. Similarly, Nicola Di Croce and Marcel Cobussen present comparable efforts. In explaining his approach to sonic ecology, Marcel Cobussen defines sonic as “almost any vibration that can be perceived by humans as well as animals” and ecology as “the analysis and study of interactions organisms have with each other and environment” (Cobussen, 2016, p. 3). He proposes a “new” sonic ecology as “the aural interactions between organisms—in particular humans—and their environment” (Cobussen, 2016, p. 4). Although Cobussen’s approach to “sonic” is quite inclusive—encompassing even ultra- or infrasound, the cognitive effects of sounds, and both heard or unheard sounds—his emphasis on aural interaction and humans confines sonic ecology to the study of humans and their environment, particularly in urban spaces. In this sense, it cannot be entirely distinguished from acoustic ecology. Building on Cobussen’s idea, Nicola Di Croce expands the

scope further by introducing a multispecies perspective and advocates for “multispecies sonic ecology” to explore “new forms of interaction” between multiple entities (Di Croce, 2022, p. 6). Like Cobussen and Titon, Di Croce centres his concept around the vibrational effect of sounds. He proposes using listening as a practice to attune to the affective atmosphere of the urban sonic environment, particularly to what he calls “disturbing sounds”, to become aware of other registers (Di Croce, 2022, p. 4).

In this study, I adopt a similar perspective and use the term “sonic” to refer to all vibrations generated by the diverse inhabitants of the forest. In the multispecies world of the forest, any entity—whether a bird, a stone, a tree, a river, an insect, or a human—can be both a sonic source and a listener. The term “sonic” thus encompasses all the sounds perceived by the listener, regardless of the auditory range or the presence of the cochlea. Unlike the more common understanding of ecology as a scientific field, I adopt its secondary meaning—“the totality or pattern of relationships between organisms and their environment”—and define sonic ecology as the relationality of entities through vibration. The sonic ecology of forests reflects the sounds of each species, representing their existence, coexistence, intertwining, interaction, and polyphony. Unlike acoustic ecology, the focus of sonic ecology is not limited to sounds perceivable by humans. Instead, it also highlights the unheard yet existent sounds by questioning the ontology of the listener. Although humans are still the primary entities from which the data is collected for this study, sonic ecology can challenge the listeners’ perception and definition of sound by encouraging them to reconsider who the listener is, what kind of listening is taking place, where the listening is happening, and, more importantly, what sound means to other-than-humans.

As “ecology” in this study denotes relationality rather than a scientific field, I do not approach sound as data to be analysed through technology. Instead, sound serves as a means of attuning to the forest and its temporality—to the sonic ecology of the forest that arises from multispecies encounters—or, as David Abram says, “it is a vibration more felt in your torso than heard by your ears” (Abram, 2010, p. 19). Abram acknowledges the benefits of technology, but he points out its drawbacks, such as how it holds the world, bodily encounters and experiences at a distance, emphasising the importance of remembering our senses (Abram, 2010, p. 7). In a similar vein, rather than utilising technological aids for the analysis of acoustic properties of sound, as is done in

soundscape ecology or ecoacoustics, the main focus of sonic ecology in this study is on the intersensory experience of sonic data in space, including visual, tactile, or olfactory perceptions. In *Against Soundscape*, Tim Ingold (2007) raises a similar concern, arguing that focusing on the concept of soundscape may not accurately capture the essence of sound perception, as the concept may lead to a loss of touch with sound. Ingold argues that the suffix “-scapes” renders the soundscape as a concept that does not effectively capture the relationship between sound and perception. He emphasises that focusing solely on the ear is contrary to the nature of perception, given that the perception of sound is also related to other senses. In the context of sonic ecology, the intersensory dimensions of sound perception can guide us toward deeper participation in multispecies relationality. Consequently, in this study, sonic ecology refers to an understanding of sound that transcends the audible, encompassing a perception of sound that involves the whole body and all the senses and the vibrational relationality of coexistence that arises from multispecies encounters.

2. Performative Listening

The interpretation of sound discloses profound meanings about the intertwined connections between sound, the listener and its environment. However, these meanings depend on the subjectivity of beings and their relatedness to the environment and other beings. In *Sonic Experience*, Jean-Francois Augoyard and Henri Torgue (2006, p. 4) claim that in addition to “the spatial and temporal conditions of its physical signal propagation, sound is also shaped subjectively, depending on the auditory capacity, the attitude, and the psychology and culture of the listener.” In other words, the existence of sound is always subjected to the listener, so much so that for human beings, sound can only exist to the extent that it is heard. However, the hearing mechanisms vary across species. Humans, like other mammals, employ their ears and associated neurons for hearing. But this is not our only means of sound perception. When traditional hearing mechanisms malfunction, such as in cases of deafness, we can rely on our bodies and vibrations to perceive sound. Similarly, animals like snakes, primarily perceive vibrations and sound waves through their jawbones and the ground. Dolphins and other toothed whales employ their mandibles to transmit sound for echolocation, while insects, such as crickets and grasshoppers, have specialised structures like tympanal organs to

detect sounds for communication purposes. Plants, too, perceive and respond to sound through direct and indirect vibrations, demonstrating distinct reactions to specific sounds, such as the chewing of a caterpillar, by increasing the production of defensive chemicals. They can differentiate between various sounds, like the buzzing of a bee or the sound of wind, and perceive sound as a mechanical stimulus triggering cellular and metabolic changes (Demey et al., 2023; Jung et al., 2018). These diverse mechanisms highlight that sound perception is a relational act intricately tied to the materiality of each being, whether human, animal, or plant.

If sound is defined as a vibration transformed into energy and hearing is the process of perceiving sound beyond the mere function of the ear, what would be the definition of listening that encompasses all beings? In his article on acoustemology, Steven Feld poses a series of questions that he contemplated during his study in the Bosavi Rainforest:

How to hear through trees? How to hear the relationship of forest height to depth? Where is sound located when you can't see more than three feet ahead? Why does looking up to the forest simply take one's senses into the impenetrable density of the canopy? How to inquire into sounding-as and sounding-through knowing that shaped the mundane everyday world of rainforest emplacement? (Feld, 2017, p. 90)

Inspired by these questions, I would like to replace “sound(ing)” with “hear(ing)”: How might one hear as trees if this were possible? How might one inquire into hearing-as knowing, realising, and attuning in the multispecies world of forests? These questions offer a foundation for my own inquiry, where the notion of hearing extends beyond the ear into an embodied, multispecies experience.

The starting point of performative listening practice is the experiment of “hearing-as trees”—standing like trees with a keen focus on the surrounding sounds and vibrations. In exploring how this might change one's relationship with trees, the environment, and the soundscape, I repeatedly stood with trees in my neighbourhood, focusing on the soundscape at different times of the day. I imagined how I might hear-as trees if such a thing were possible. Rediscovering the soundscape of my neighbourhood, where I have lived since my childhood, and understanding the significance of standing like trees—which involves both disengaging from the fast pace and habits of city life and physically standing still, feeling the soles of my feet touching the ground, and rising towards the sky like a tree—I began to wonder how I could deepen this experience to become more familiar with the ontology of trees. What insights can be gained about the vitality of trees by listening to the sonic

ecology of forests, which are home to various tree species?

In geographically diverse indigenous communities that co-exist with the forest, non-humans are not “Others” but “companion species” (Haraway, 2016): Plants, fungi, animals, and humans are not recognised as separate or superior entities; rather, all “the natural beings thus become real social partners” (Descola, 2013, p. 6). In examining the Makushi Amerindians’ relationship with plants, Lewis Daly (2015) explores a worldview in which plants are recognised not merely as resources but as living subjects. Daly illustrates how humans and plants can be “symbiotically and semiotically entangled” and “are cohabitants of shared life-worlds; as co-evolutionary actors entwined in deep historical partnerships, they create and constitute one another” (Daly, 2015, p. 2). Similarly, an indigenous ecologist, Robin Wall Kimmerer (2013), who views plants as her teachers, explains how humans and plants (especially trees) are in constant dialogue through reciprocal relationships as members of the web of life. For Kimmerer, the members of old-growth forests communicate through a language in which we are “the audience to conversations while listening in wild places” (Kimmerer, 2013, p. 48). As an ecologist, her approach to language is not limited to science, which she describes as “a language of objects” (Kimmerer, 2013, p. 49); rather, she emphasises the importance of paying attention to and listening to the forest, to “what plants tell us” (Kimmerer, 2013, p. 42).

Performative listening is a practice-based listening methodology that seeks to move beyond the mere act of hearing sound. It posits that sound serves as a potent medium for communication among both human and nonhuman entities. This form of listening is an act of engagement that transcends the auditory and encompasses the entire body by placing the embodied experience at its core. It allows listeners to access knowledge beyond the limitations of their senses, beyond the limitations of listening solely with the ears. For humans, listening generally entails giving attention to sound with the intention of making sense. Deborah Kapchan, a scholar of sound and performance studies, argues that while different types of listening share commonalities, “they also distinguish themselves by orienting the listener in specific affective directions,” thus making listening a performative act that transduces sound waves into knowledge (Kapchan, 2017, p. 5). In the realm of listening, the primary focus is on sound knowledge, “a non-discursive form of affective transmission resulting from acts of listening” (Kapchan, 2017, p. 2). Drawing on J.L. Austin’s theory of speech acts, she further defines a “listening act” as an active performance in the world through listening (Kapchan, 2017, p. 5, 277).

Following Kapchan, the performative listening method highlights the active, transformative, and embodied aspects of the listening act. It suggests that listening is not simply a passive reception of sound but a participatory and transformative act that involves doing and embodying. This means listeners stand like trees and embody the act of listening in a specific, intentional way that transforms their relationship with the environment. Here, I use the concept of “hearing-as” as a means of acting, standing, and attending like a tree to gain a glimpse of how to sense sounds like a tree in the forest and what these sounds mean to us. The term was introduced by ethnomusicologist Jocelyne Guilbault (2017, p. 108) as “a point of entry to show how sound can be agentive in fostering cosmopolitan musical bonding.” For Guilbault (2017, p. 113), hearing-as helps her “to recognise the agency of sound in initiating acts of recognition” in relation to accumulated music listening. In the context of performative listening, “hearing-as” refers to the embodiment and performance of the listening act, where the body serves as a medium to immerse in the forest’s soundscape and transform with the agency of sounds in the sense of becoming-with the trees and bonding within the shared space of the forest.

With reference to Maurice Merleau-Ponty, Tim Ingold uses the term “immersion” to highlight the multi-sensory sound experience and the state of being in the flow in which the body listens. For Ingold (2007, p. 2), “sound is neither mental nor material, but a phenomenon of experience—that is, of our immersion in, and commingling with, the world in which we find ourselves. Sound is not what we hear; it is what we hear in.” Stefan Helmreich (2010) broadens Ingold’s immersion by emphasising the vibrational effect. He claims that to have a sense of being immersed in sound, it should be transduced. Helmreich defines transduction as a process by which “sound changes as it transverses media, as it undergoes transformations in its energetic substrate, and as it goes through transsubstitutions that modulate both its matter and meaning” (Helmreich, 2015, p. 222). In this sense, sound as an abstraction comes into existence through the transduction of material vibration.

Following the theories of Ingold and Helmreich, with performative listening through hearing-as trees, the listener’s body immerses in the sonic ecology of the forest, intersensorially perceiving the sounds in the environment through the transduction of material vibrations. Thus, sound comes into existence for the listener without being constrained by the faculty of the ear. Immersing the body in the forest’s soundscape, sensing the transduction of sonic information that reaches the body, and

becoming aware of the vibrations requires attention to both the body and the environment. This heightened attention creates a dynamic interplay, attuning the listener to the affective atmosphere of these interactions. As the body senses and responds to the vibrational flows, the boundaries between humans and nonhumans begin to blur.

Performative listening is an effort to overcome dualities, such as human-nonhuman or nature-culture, through sound knowledge by revealing the “capacities to act and be acted upon” (Gregg and Seigworth, 2010, p. 1) of the body as it attunes with the sonic ecology of the forest. It seeks ways to “retune our abilities to better enable humans to hear, feel, see, smell, and sense empathetically, not just other humans but also other biological beings so that we might live together sustainably” (Cooley et al., 2020, p. 301). Cooley identifies deep listening as a method for helping humans to make positive changes by reducing human exceptionalism and fostering relationships with all beings on Earth (Cooley et al., 2020, p. 303). By exploring the contrast between the involuntary aspect of hearing and its voluntary, selective nature, Pauline Oliveros (2005) defines “deep listening” as a technique for examining the distinction between exclusive and inclusive listening in which the act of listening involves paying attention to subtle sounds, including vibrations. For Oliveros (2005, p. xxv), sound “is inclusive of all perceptible vibrations.” Oliveros’ experiments, which are focused on the effects of tones, provided her with “a heightened state of awareness that gave a sense of well-being” (Oliveros, 2005, p. xvii). Oliveros was probably among the first scholars to integrate traditional meditation practices into listening, such as those taken from Zen, Tibetan Buddhism, Yoga, and Taoism. Her focus on meditation seems to be related to attention that transforms the involuntary nature of hearing into voluntary listening. Paying attention to one’s surroundings—or, as she describes it, expanding consciousness—implies a state of connectedness to the environment and beyond (Oliveros, 2005, p. xxiii).

Similarly, performative listening through hearing-as trees—trying to sense and be open to whatever sonic information comes to the body—borrows from deep relaxation techniques to increase the intensity of sensation, awareness of the senses, and physical engagement with the sonic ecology of the forest. In doing so, performative listening emerges as a method of recognising or becoming familiar with the ontology of trees through sound. It reveals the transformative potential of sound for building connections with trees and resonating with their multispecies space by

reconsidering our habitual understanding of hearing. It cultivates attunement to the agency of trees, which are considered the silent ones of the forest, revealing their capacities to act and be acted upon.

Despite the differing physiology, biology and chemistry of trees and humans, we share what Karan Barad (2012, p. 70) describes as “the nature of materiality.” Barad (2003) challenges traditional notions of human agency and subjectivity by integrating insights from quantum physics and feminist theory into her concept of “posthumanist performativity,” which emphasises the interrelatedness of material and discursive, the social and scientific, the human and nonhuman, and the natural and cultural factors. For Barad (2003; 2007; 2012), agency is not exclusive to humans and exists situationally between the observer and the observed. She elucidates this relationship through her concept of “intra-action”: Although entities are distinct wholes, their interaction does not begin the moment they meet; they are already relational. As the situation alters, so do the ontologies. This implies that the performativity of matters produces “diffractive”, co-constitutive subjects and objects that also possess agency.

Following Barad, in the context of performative listening, both sound and trees possess an agency that affects our materiality in attuning to the sonic ecology of the forest. This affective resonance deepens awareness of the interconnectedness between human and nonhuman entities. It creates empathetic connections with different life forms, such as trees, through the intentional act of standing like a tree. Focusing on the body in this way enables the listener to reveal the performative nature of its own body. In this regard, performativity becomes a means of discovering the intra-actions between the multiple agencies, actants, materials, and bodies that form the relational, ontological, and epistemological composition we co-create. Therefore, performative listening of the sonic ecology of forests facilitates a thorough understanding of how the body relates to living entities within the forest—the “naturecultures” (Haraway, 2003) of our entangled materiality.

Barad’s concept of performativity is iterative, similar to that of Judith Butler (1999) and Richard Schechner (2013). For Butler (1999), performativity reiterates previously encoded patterns, while for Schechner (2013), performativity is ubiquitous—any action, event, or object can be considered a performance. Both Butler, Schechner, and Barad highlight the iterative yet differentiated nature of performativity, which allows for variations in each repetition. However, these differentiations do not imply or emphasise “Othering”, rather, they are about “connections and

commitments” or “entanglements”, which is “the very nature of materiality” (Barad, 2012, p. 70). In a similar vein, I consider practising “hearing-as trees” and attuning to the sonic ecologies of the forest as a performance of standing like trees, sensing the sonic relationality and transforming with the encounters. Through performative listening, individuals who regularly engage in this mode of listening can deepen their connection with the environment and reshape both their subjectivities and their relationship with nonhumans. Each listening practice allows listeners to alter these relationships. These alterations and the bodily engagement with the environment enable them to rediscover their connections and entanglements. Listeners can perceive not only the agency of matters but also the mutual effects between their bodies and other bodies and materials. They come to realise, as Barad states (2007, p. 3), that meaning and matter are inseparable, and thereby they develop a responsibility to “listen for the response of the other, who is not entirely separate from what we call the self” (2007, p. 70).

In this context, performativity also serves as an iterative process that continues to evolve with this sense of responsibility. As each listening practice unfolds, listeners’ bodies become sites of transformation, altering their perceptions and deepening their awareness of multispecies agencies in their daily lives. The situatedness of the listening practices does not limit this transformation; instead, their impact continues to shape the listeners’ understanding of “naturecultures” by recalling the embodied experience and the affective resonance of sonic encounters. Listeners begin to notice the trees that stand alone on the street, in the backyard of one’s house or between buildings. Each encounter with trees through performative listening opens the potential for further ontological questioning, leading to a re-evaluation of humanity’s fundamental assumptions about existence, vitality, agency, and the place of humans within the broader web of life. Through this iterative process, listeners are invited to expand this awareness beyond the forest, applying it in urban or domestic settings, where trees and other nonhuman entities are equally present yet often overlooked. In this way, the performative listening practice serves as a reference point for listeners to reiterate and internalise the embodied knowledge of humans and nonhumans as deeply interconnected and co-constitutive. By reinforcing the notion that materiality and meaning are intertwined (Barad 2007), this method urges listeners to reconceive their role within a more-than-human world. Consequently, performative listening reminds the listener (observer, knower, or human) that the separation between

nature and the human body is an illusion and thereby challenges the concept of othering, which, in its essence, has never existed at all.

3. Sonic Encounters: The Agency of Sound and Trees

An encounter can be defined as a series of interactions and experiences that an entity—be it a living organism or a non-living material—has with other entities, environments, and situations. Encounters are transformative, eliciting affective responses. Anthropologist Anna L. Tsing (2015) draws attention to the affective nature of encounters, examining how they give rise to indeterminate and unpredictable impacts that generate new possibilities for liveability. She uses the smell of matsutake mushrooms to illustrate how sensory experiences can transform through repeated encounters. For Tsing (2015, p. 46), smell signals the presence of something or someone else and creates a profound impact on us. In the forest soundscape, sound, like smell, signals the presence of entities and affects listeners. Upon entering the forest, its sonic ecology becomes immediately apparent as sounds envelop the senses.

For this study, I visited six forests in three distinct regions of Turkey⁷ and organised practices with groups of participants from various ages and backgrounds to mediate these encounters. Each practice began with a preliminary 30-minute walk through the forest, during which we discussed our understanding of the sensory capabilities and the life forms of trees. This discussion enhanced our awareness of the trees' sociality and vitality as we touched trees, observed their structures, noticed the different types of plants and animals in the vicinity, and smelled the environment. After selecting a location, we initiated the performative listening by standing still like the trees around us. The listening sessions usually lasted approximately 20 minutes, including a deep relaxation phase during which we focused on the body and surrounding sounds by recalling insights from the earlier walk. We concluded the practice with semi-structured interviews to reflect on and discuss our experiences of the sonic encounters.

⁷ From 2022 to 2024, I carried out fieldwork with participants in the Marmara Region (Istanbul Northern Forests and Ida Mountains Forests), the Aegean Region (Izmir Atatürk Memorial Forest), and the Western Black Sea Region (Bolu Abant Lake Forests). The insights presented in this section are derived from the interviews recorded with the participants' consent during the field study.

Depending on geography, biodiversity and seasonality, the acoustic character of each forest generally reflects the sonic encounters between the listeners and trees. Birdsong fills the air, blending with the rustling of leaves stirred by the wind. In the distance, faint crackling sounds indicate a squirrel climbing a tree or a turtle making its slow progress. A nearby stream flows softly, occasionally accompanied by the croak of a frog. As clouds pass overhead, the wind's intensity increases, creating a hum abruptly interrupted by sharp noises or the swift rustling of shadows. When the sun reappears, calmness returns and a bee buzzes past. Deeper in the forest, the thick canopy of ancient trees dampens many sounds, making the subtle noises of insects among the leaves more perceptible, along with the quiet munching of caterpillars and the creaking of trees swaying in the wind.

Through performative listening, each of these sounds constitutes an encounter as their waves reach out to the listener's body. They serve as the primary stimuli, directing the listeners to focus initially on auditory perceptions. Similarly, during our practices, as beings inclined to associate sound directly with the ear, the listeners engaged in this practice initially concentrated on only the sounds audible to them. Typically, these sounds coincided with the auditory data they expected to hear in the forest, such as the chirps of birds, rustling leaves, and whispering wind. As such, sounds enhanced their interaction with the environment and signified the encounter between listeners and nonhumans. In other words, the listeners began to listen with their ears by focusing on one of their favourite sounds or the one that caught their attention during the practice. However, as they attempted to "hear-as" trees, the focus of listening shifted from the ears to the body. Depending on the agency of sound, their listening became a participatory and transformative act in which they felt integrated into the environment, perceiving sounds through their feet, hands, hair, or skin by transforming the sonic information that comes to the body.

Birdsong is one of the most prominent sounds listeners generally associated with the sound of nature or forest during our practices. Despite the presence of various other sounds in the forest—such as the rustling of leaves, cracking of branches, buzzing of bees, and animal calls—it was typically the birdsong that sonically enriched the atmosphere for most listeners. Birdsong was generally perceived as a pleasant accompaniment conducive to relaxation or happiness. Thus, it is unsurprising that it also affected the listeners' experiences during performative listening. For some listeners, bird chirps served as markers of physical reality and time, leading them to reconnect with their present as

if the birdsong was calling them back to their bodies. For others, birdsong generated an immersive and relaxing atmosphere, while some listeners associated it with a sense of being in a crowd, particularly during practices conducted in spring. However, it is noteworthy that birdsong was not the most effective sound for most listeners; wind and rustling leaves had a stronger impact.

The sound that affected the listeners the most was the sound of wind, which elicited both physical and cognitive responses. For instance, some listeners felt a sense of becoming a tree while physically reacting by swaying or moving their hands during the listening practice, as if mimicking the tree leaves in the wind or trying to maintain their balance against the wind. Similarly, the rustling of leaves made the trees audible to the listeners by giving them presence. Although the sound of wind and the rustling of leaves are mostly indistinguishable for the listeners, these sounds are not inherently the same. Wind creates distinct sounds depending on the environment: It sounds like a strong whistle where there is no object it can interact with, such as a desert, while in an urban setting, it roars as it interacts with buildings. On the other hand, in the forest, the wind is heard in the trees, their branches and leaves, as if trees become audible and communicate with each other, the forest residents, or us. Listeners often interpreted this interaction as the communication between trees, describing how the sound of wind affected their interaction with the environment and their encounter between trees by saying, “Trees become audible with wind, maybe they say something to each other,” “They talked to each other with this rustling sound,” or “I felt the communication between trees with this whispering sound of leaves.” These sounds mediated the relationship between the listener and the trees—entities that are physiologically quite different from humans.

While birdsongs, insect sounds, and wind can be considered the sounds of trees due to their interconnection (Haskell, 2018), one could argue that the trees merely contribute to these sounds. Peter Wohlleben argues that trees create a milieu without exerting real control over these sounds since their primary mode of communication is through scent (Wohlleben, 2015, p. 6). However, David Abram highlights the expressive qualities inherent in communication, arguing that both trees and humans possess forms of language or communication characterised by these expressive qualities, which can elicit diverse emotions and thoughts. Similar to Kimmerer’s approach to language and listening to forests, Abram compares language to the wind passing through trees, producing sounds like rustles, whispers, and rattles—just as human language connects individuals and bridges the gap

with the world around them. Abram's metaphorical comparison of language and wind is based on our (humans and trees) shared medium air, which "our sounded phrases borne by" and "nourishes the cedars and swells the cumulus clouds" (Abram, 2010, p. 10-12). During the performative listening practice, the listeners established a similar connection with the air that sounds our words and rustles the leaves: If trees are animate beings, they might have a language to communicate. Thus, the susurrations of trees or sometimes the roar of wind among the branches became akin to human language for the listeners.

Sonically, the wind also has the effect of suppressing or dispersing surrounding sounds. In the presence of strong wind, the listeners first perceived a hum that could filter or block out other sounds if they focused on their ears. Some listeners identified this hum as the sound of the forest: "This layered hum that comes from afar is what indicates the environment;" "There is a constant hum, the sound of the forest. This is what I heard, as if everything is in harmony." In an urban forest, this hum could blend with the familiar sound of car engines to which we are constantly exposed. Some listeners even struggled to distinguish the difference, whether it came from a car or the wind. The swish, whoosh, rustle, or roar of the wind—often interpreted as a hum—varies depending on the forestation texture and the shape of tree leaves. For example, depending on their leaf shapes, such as needle-like, flat, and narrow, trees elicit diverse sounds when interacting with winds, much like the varying intensity of the wind across different seasons. Listeners who concentrated on these sounds reported noticing acoustic differences between the lower and upper leaves of trees. In moderate wind conditions, the sound followed a pattern of layered rustling: "It comes from one direction and then shifts, like saying something. After a while, it passes in another direction. You can genuinely feel their communication if you listen to these sounds with an order." One listener likened this pattern to a "Mexican wave", while another described it as "circular."

This pattern also led the listeners to contemplate the temporality of the forest and trees: "There is a pattern in the wind, it does not blow randomly everywhere. This is like a moment where time expands and slows down as if to be encapsulated within a sphere." On a windless day or during a gentle breeze, the forest's atmosphere became akin to an acoustic chamber. This allowed the listeners to hear distant birdsongs as if they were nearby. Especially on a windless day, if there were too many birds in the surrounding area, birdsongs created a sonic globe that fosters listening and immersion in

the environment: “It is like the birds are closer to me, and there are more birds around. I heard the leaves and branches more clearly.” This expression emerged during the fourth performative listening practice of one listener held in a wild forest where the wind was barely audible. Although I noticed a substantial amount of bird chirps in the recording afterwards, they were not close to the spot where we were practising in comparison to our previous practices.

During the listening, empathy extends beyond the conventional understanding of grasping the feelings of entities with similar physiological and biological traits. Typically defined as the ability to comprehend and share the feelings of others, empathy often requires a resemblance between the empathiser and the other. This raises a question when attempting to empathise with entities different from humans, like trees. Despite the physiological differences and the ambiguity regarding the sensational capacity and intelligence of trees, the idea of hearing-as trees enabled listeners to use their own bodily experiences as a bridge for empathy. They employed analogical thinking by comparing parts of their bodies with specific parts of the tree, such as its trunk, branches, or roots. This bodily analogy not only facilitated a form of empathetic connection but also altered the listening experience. The listeners who focused on correlating specific parts of their bodies with trees reported heightened sensitivity to certain sonic elements, like vibrations from the ground or the flux in the tree trunk.

Performative listening, in essence, aims to deepen sensory perception, allowing listeners to encounter previously unnoticed aspects of their auditory environment, such as subterranean creatures or insects. This empathetic endeavour evoked a broad spectrum of emotional responses, including feelings of strength, vulnerability, or serenity. During moments of listening and relaxation, the listeners often explored these sensations through narratives that anthropomorphise the trees by attributing human-like thoughts and emotions to them. When uncertainty arose about their sensory experiences, the listeners typically sought to rationalise or validate their feelings by personifying the trees, using expressions like “it told me so” or framing their perceptions with “as if”. This reflects the agency of sound in demonstrating how performative listening enables a profound, albeit unconventional, form of empathy. It shows how the boundaries between the human and nonhuman worlds can blur through the transformative impact of listening.

4. Conclusion

This paper examines how performative listening with trees in forests' sonic ecology can transform human auditory experiences and deepen their connections with nonhuman beings. Anna L. Tsing reframes Jakob von Uexküll's inquiry into the experience of being a tick in the world, asking, "Who wants to listen to the world from a worm?" (Tsing, 2015, p. 156). To understand the agency of nonhuman species, it is perhaps necessary for humans to listen to the world from the perspective of a tick, a worm, or a tree or to listen like a tree. Underlining the need to reflect on the position of the researcher and the endeavour to represent species, Lewis Daly inquires that we can ask humans their opinion about plants, but "how can one—or, indeed, *can* one at all—infer what plants may 'think' of humans? Are we not 'merely' investigating what humans think plants think, or even what humans think plants think humans think?" (Daly, 2015, p. 68).

For humans, attempting to experience and perceive the environment like a being so different from their vitality and body is as challenging as listening to sounds with the whole body, not just the ear. The listeners in this study experienced moving beyond traditional auditory perceptions by trying to listen from trees or to listen with trees. The essence of this listening practice allowed them to unintentionally cultivate empathy for trees, helping them address the challenge of bridging the human and nonhuman experience. This practice encourages listeners to question the validity of our anthropocentric perspectives and reveals the potential for trees to be perceived as sentient beings, considering their agency and communicative capacities. However, empathy toward trees inevitably leads to a form of anthropomorphism, which has been criticised by new materialism that emphasises nonhuman agency. As humans, we cannot fully experience the ontology of trees —nor can trees experience being human; we can only attempt to imagine their lives by projecting behaviours that mirror our own. This raises the question of whether anthropomorphisation can be transformed into a positive tool for relating to tree beings and fostering ethical care. In this sense, anthropomorphisation can help dissolve the "object" barrier often placed between humans and nature. As Robin Wall Kimmerer observes, calling a plant or an animal "she" or "he" might be interrogated by some as anthropomorphism, but calling a tree "it" creates distance, turning it into an

object and allowing us to evade moral responsibility, thus enabling its exploitation (Kimmerer, 2013, p. 57).

On the other hand, trees have their own forms of existence, shaped by forces and processes that are not dependent on human perception or understanding. This raises the question of whether empathy is sufficient for grasping the full reality of trees. While imagining trees in ways familiar to us can help initiate a relationship of care, we must also be cautious not to overlook the complex ways in which trees exist and act within their ecosystems beyond human concepts of emotion or agency. Therefore, rather than seeing these two perspectives as conflicting, I believe they can coexist. Performative listening with trees not only redefines our sensory engagement with forests but also challenges us to rethink our ontological positions. Empathy, when understood as an invitation to connect, can encourage a more respectful approach to trees, fostering a willingness to listen and observe them on their own terms. Simultaneously, by recognising that trees are more than just objects of our concern, we open up possibilities for deeper engagement with their unique roles in the ecosystem. In this sense, anthropomorphisation can serve as a way to begin this process of engagement, but it should be accompanied by an awareness of the broader, nonhuman dynamics that trees embody. It can contribute to a transformation that enables us to coexist alongside trees and take responsibility for our actions, rather than granting us the privilege of speaking for them or existing against them.

Ultimately, this study emphasises the agency of sound as a medium for multispecies interactions. Performative listening opens new horizons for understanding the sonic dimensions of these interactions through its embodied and participatory approach. Recognising the communicative and affective capacities of trees aligns with broader theoretical frameworks that advocate for the agency and vitality of nonhuman actors. Moreover, as we face intensifying ecological crises, I believe it is increasingly important to cultivate empathy for all life forms. Therefore, through this study, I aim to demonstrate how performative listening can transform our perceptions and interactions with other species. By attuning our bodies to the sonic ecology of forests, we can foster a deeper appreciation for the tree beings and other nonhuman entities with whom we are interconnected.

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REFERENCES

ABRAM, David. **Becoming animal: An earthly cosmology**. New York: Pantheon Books. 2010

AUGOYARD, Jean-Francois and TORGUE, Henri. **Sonic experience: a guide to everyday sounds**. McGill-Queen's Press-MQUP, 2006.

BALDING, Mung and WILLIAMS, Kathryn JH. Plant blindness and the implications for plant conservation. **Conservation Biology**, 30(6), 1192-1199, 2016. doi: 10.1111/cobi.12738.

BARAD, Karen. Posthumanist performativity: Toward an understanding of how matter comes to matter. **Signs: Journal of Women in Culture and Society**, 28(3), 801–31, 2003.

BARAD, Karen. **Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning**. Durham, NC: Duke University Press, 2007.

BARAD, Karen. Matter feels, converses, suffers, desires, yearns and remembers. Interview with Karen Barad. In TUIN, Iris Van Der and DOLPHIJN, Rick. (Eds.). **New Materialism: Interviews and Cartographies**. Ann Arbor: Open Humanities Press, 2012. 48–70.

BUTLER, Judith. **Gender Trouble: Feminism and the subversion of identity**. 2nd ed. Routledge, 1999. <https://doi.org/10.4324/9780203902752>.

COBUSSEN, Marcel. **Towards a “New” Sonic Ecology**. Inaugural lecture on the acceptance of position as professor of Auditory Culture at the Universiteit Leiden: Netherlands, 2016.

COOLEY, Timothy, ALLEN, Aaron S., HELLIER, Ruth, PEDELTY, Mark, VON GLAHN, Denise, TITON, Jeff T., and POST, Jennifer C. Call and Response: SEM President’s Roundtable 2018, “Humanities’ Responses to the Anthropocene”. **Ethnomusicology**, 64(2), 301-301, 2020. <https://doi.org/10.5406/ethnomusicology.64.2.0301>

DALY, Lewis. **The symbiosis of people and plants: Ecological engagements among the Makushi Amerindians of Amazonian Guyana**. 2015. Dissertation. Institute of Social and Cultural Anthropology. University of Oxford.

DEMEY, Marie L., MISHRA, Ratnesh C. and VAN DER STRAETEN, Dominique. Sound perception in plants: From ecological significance to molecular understanding. **Trends in Plant Science**, 28, 7, 825-840, 2023. <https://doi.org/10.1016/j.tplants.2023.03.003>

DESCOLA, Philippe. **Beyond Nature and Culture**. University of Chicago Press, 2013.

Di CROCE, Nicola. Attuning to disturbance: towards a multi-species sonic ecology. In: **Sonic urbanism: Listening to non-human life**. Theatrum Mundi, 2022. 12-19.

FARINA, Alma. Perspectives in ecoacoustics: A contribution to defining a discipline. **Journal of Ecoacoustics**, 2, 1-19, 2018.

FELD, Steven. On post-ethnomusicology alternatives: acoustemology. In: Giannattasio, Francesco and Giuriati, Giovanni. (Eds.). **Perspectives on 21st-century comparative musicology: Ethnomusicology or Transcultural Musicology?** Udine: Nota, 2017. 82-98.

GREGG, Melissa and SEIGWORTH, Gregory J. **The affect theory reader**. Durham: Duke University Press, 2010.

GRUSIN, Richard. (Ed). **The nonhuman turn**. University of Minnesota Press, 2015.

GUILBAULT, Jocelyne. The politics of musical bonding: New prospects for cosmopolitan music studies. In: Giannattasio, Francesco and Giuriati, Giovanni. (Eds.). **Perspectives on a 21st century comparative musicology: Ethnomusicology or Transcultural Musicology?** Udine: Nota, 2017. 100-125.

HARAWAY, Donna. **The companion species manifesto: Dogs, people, and significant otherness**. Chicago: Prickly Paradigm Press, 2003.

HARAWAY, Donna. **Staying with the trouble: Making kin in the Chthulucene**. Durham: Duke University Press, 2016.

HASKELL, David George. **The songs of trees: Stories from nature's great connectors**. Penguin, 2018.

HELMREICH, Stefan. Listening against soundscapes. **Anthropology News**, 51(9), 10, 2010.

HELMREICH, Stefan. Transduction. In: NOVAK, David and SAKAKEENY, Matt. (Eds.). **Keywords in sound**. Duke University Press, 2015. 222-231.

INGOLD, Tim. Against soundscape. In: ANGUS, Carlyle (Ed.). **Autumn leaves: Sound and the environment in artistic practice**. Paris: Double Entendre, 2007. 10-13.

JUNG, Jihye, KIM, Seon-Kyu, KIM, Joo Y., JEONG, Mi-Jeong, and RYU, Choong-Min. Beyond chemical triggers: Evidence for sound-evoked physiological reactions in plants. **Frontiers in Plant Science**, 9. 2018. <https://doi.org/10.3389/fpls.2018.00025>

KAPCHAN, Deborah. The Splash of Icarus: theorising sound writing/writing sound theory. In: Kapchan, Deborah. (Ed.). **Theorizing Sound Writing**. Wesleyan University Press, 2017. 1-22.

KIMMERER, Robin Wall. **Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants**. Milkweed editions, 2013.

MIDDELHOFF, Frederike and PESELMANN, Arnika. The stories plants tell: An introduction to vegetal narrative cultures. **Narrative Culture** 10.2, 175-188, 2023.

MONTGOMERY, Beronda. **Lessons from plants**. Harvard University Press, 2021.

OLIVEROS, Pauline. **Deep listening: A composer's sound practice**. New York: Iuniverse, Inc, 2005.

PIJANOWSKI, Bryan, FARINA, Alma, GAGE, Stuart H., DUMYAHN, Sarah L., and KRAUSE, Bernie L. What is soundscape ecology? An introduction and overview of an emerging new science. **Landscape ecology**, 26, 1213-1232. 2011.

SCHECHNER, Richard. **Performance studies: An introduction**. 3rd ed. Routledge, 2013.

TITON, Jeff Todd. **Toward a sound ecology: New and selected essays**. Indiana University Press, 2020.

TRUAX, Barry. Acoustic ecology and the world soundscape project. In: DROUMEVA, Milena and JORDAN, Randolph (Eds.). **Sound, media, ecology**. Cham, Switzerland: Palgrave Macmillan, 2019. 21-44.

TSING, Anna Lowenhaupt. **The mushroom at the end of the world: On the possibility of life in capitalist ruins**. Princeton University Press, 2015.

WOHLLEBEN, Peter. **The hidden life of trees: What they feel, how they communicate—discovering a hidden world**. Munich: Ludwig, Random House, 2015.

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