

## Smell as Transspecial Correspondence

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### Abstract

Veera Kinnunen conceptualizes smell as a form of transspecial correspondence by drawing from her fieldwork among bokashi composting community in Finland. Bokashi is a method of handling organic waste through fermenting, which has gained popularity in the global North. Kinnunen argues that the sense of smell becomes the most important sensory modality for engaging with waste and reaching out to the invisible microbial communities “working” in the fermenting matter. Through the example of an alternative waste practice, the article illustrates how different practices may change the way practitioners relate with abjected matters, and make space for new metabolic imaginations.

*Keywords:* bokashi; smell; olfactory knowing; transspecial; correspondence

*Yesterday, I had a most unsettling encounter with my organic waste that had been cumulating mass but also, as it turned out, life, during an exceptionally warm summer week. I had experimented with collecting my compostables into a stainless-steel container for a temporary pre-fermentation before moving it into the sealed fermentation bucket. Apparently, the temporary container had not been as airtight as I had supposed, and as a result, the organic material had gone putrid. The very moment I was studying the container, my younger child aimlessly wandered to the kitchen. He was struck by a stench strong enough to tranquilize a medium-sized elephant. His body reacted immediately: gagging and yelling, he stumbled away from the kitchen, not knowing what it was that had hit him.*

*My son reacted as if our waste bucket was giving him a warning: “Do not enter, do not touch me.” However, in me, having taken care of the batch and thus having created emotional strings to it, the same smell generated somewhat mixed responses and interpretations. For me, the smell was not only a warning but also a cry for help. An extremely loud cry for help. I was tempted to dump the whole batch into the rubbish bin, but I felt responsible for its current monstrous state, as it had been a result of my foolish experimentation.*

*From previous experience, I knew how I could stabilize the situation and (re)start the fermentation process. Breathing through my mouth, I poured the stinky, slushy matter into an empty bokashi bucket, threw in a few handfuls of bokashi bran, and at a whim, sprinkled some biochar on top of it all. Now, writing this the next morning, I haven’t yet dared to have a peak in the container. I will let it brew for a while, and time will show whether I have managed to save the batch from decay back to healthy fermentation.*

### Tuning in to Smelly Stories

This unsettling encounter with a putrid organic material was an extreme example of olfactory exchanges between me and my waste. However, similar, albeit typically less disturbing engagements have taken place on a daily basis since I started to experiment with *bokashi*: a method of composting kitchen waste with the help of fermentation based on a consortium of microbes. I have learned that my bokashi is happy and contained, when it smells faintly of lemon and vinegar, and when it is suffering and in need of assistance, it begins to smell disgusting, resembling vomit or pig manure.

My and my fellow bokashi practitioners' eagerness to tune into the well-being of our kitchen wastes by sniffing their quirky aromas, is not a common way of relating with waste in a Western, urban setting.<sup>1</sup> A more familiar set of action would be getting rid of anything with even the slightest potential of smelling—let alone developing uncontrolled microbial life—from the household as quickly as possible. Therefore, I am not exaggerating when I argue that bokashi composting radically alters urban relations with so-called waste. Adopting bokashi practice into urban everyday life demands acknowledging and even welcoming the murky presence of neglected things (Puig de la Bellacasa 2017) such as waste materials, microbes, smells, and other unruly elements that have typically been carefully kept away from the modern landscape.<sup>2</sup>

In this paper, my focus is on corporeal engagements with organic waste material in bokashi practice. Drawing from more-than-human and multispecies approaches (Ogden, Hall and Tanita 2013; van Dooren, Kirksey and Münster 2016), I understand organic waste here as itself an active and unruly entity consisting of many materialities, and teeming with life (Hird 2013). Through empirical observations from bokashi practice, I explore how the lively materiality of waste is carefully attuned to in a multisensory register and examine how these engagements become narrated as reciprocal communication.

In what follows, I seek to explore beyond human-exceptionalist notion of language and communication, and wonder, how we could acknowledge and tune into other-than-human modes of storytelling (see also Thompson 2019). By focusing on olfactory engagements within bokashi composting, I explore whether smell could help imagine and story non-lingual modalities of transspecies communication. In the spirit of feminist, multispecies speculation, I ask what kinds of worlds may be storied when what and how we smell is taken seriously.

This article proceeds in three sections. First, I set the stage by introducing the mode of multispecies storytelling and the theoretical voices that I join when narrating this story. Second, I shortly introduce bokashi composting as a method, and describe how I have approached it as a researcher and a bokashi practitioner. In the third section, I delve into exploring olfactory engagements with bokashi more closely. The discussion includes smelling as a neglected mode of knowing and then continues to stories of microbial collaborations. From these stories, I further speculate olfactory engagements as a mode of communicating and negotiating with microbial communities. I conclude by provoking that cultivating sensory sensibilities to attune to microbial stories matters.

### Multispecies Storytelling

In seeking to tell different stories, I join the lineage of feminist thinkers who emphasize the power of stories and imaginations in aspiring for a different, more just, future. According to radical feminist imaginaries, “how we think and speak the world, shapes how we act in it and make it” (Hamilton and Neimanis 2018, 524). In the face of ever-deepening and multiplying crises, human-centric ontologies and epistemologies are falling short in their responses. The need to re-imagine who we count as “us” is becoming ever more urgent in the face of the multiple crises, linked to ongoing environmental emergency. As Ida Bencke and Jörgen Brunn (2022) formulate, it is important to nourish and share other kinds of stories that may hold promises of modest yet radical hope. As scholars, we need to ask ourselves what kinds of political, cultural, aesthetic, and scientific prejudices police our speculative abilities to think and act differently, and how we can break with the stories that justify this policing (Bencke and Brunn 2022, 10). Answering this ethico-political and epistemological challenge, Bencke and Brunn (2022, eds.) propose multispecies, intermedial storytelling practices that aim to “represent, relay, and read” worlds differently by taking other species seriously as protagonists in their own right. In their words, multispecies storytelling steers attention to signals, traces, and voices of other beings as valid modes of communication. They ask: “What if we, instead of telling story upon story about nature, were to engage in collaborative storytelling activities with that humming, throbbing murmur of countless critters that all, collectively, make up ‘our’ world?” (Bencke and Brunn 2022, 10.) Folklorist Tok Thompson (2019) has pushed the provocation even further, and asked if communication is understood as a more-than-just-human matter, shouldn’t cultures, traditions, and heritages then also be approached as interspecies relations. This provocation becomes complicated, when attention is steered to cultures of cultures, microbial communities whose ways of being in the world differ radically from those of humans’. In social sciences and humanities, human-non-human communication has typically been theorized through communicating with animals, such as horses (Argent 2022), rats (DeAngelo 2023), primates or birds (Plec 2013), with which communication tends to take place through bodily movements, touches, sounds, and signs (Colombino and Bruckner 2023). Decentering the animal kingdom and turning attention from charismatic animals to plants, fungi, or lichens, the issue of multispecies communication tends to take a more speculative or even fabulist turn (see e.g. Haraway 2016; Höckert 2020; Höckert, Rantala, and Jóhannesson 2022; Rantala and Höckert 2024). To give but one example, my colleagues Outi Rantala and Emily Höckert (2024) have inquired, how listening to the stories of tiny creatures such as mosses and lichen might mobilize curiosity and responsibility towards supposedly insignificant and inanimate beings. They take multispecies storytelling as a methodological tool that enables recognizing non-human agency and cultivates sensitive approaches to otherness (Rantala and Höckert 2024, 64). Multispecies storytelling, then, provides a means to attune to the modes of communicating of less visible and charismatic, yet omnipresent messmates (Haraway 2008; Höckert, Rantala, and Jóhannesson 2022; Rantala and Höckert 2024).

In feminist environmental theories, composts have often been taken as a metaphor for speculating the messy modes of becoming and thinking together with non-human others (Abrahamsson and Bertoni 2014; Hamilton and Neimanis 2018). In contrast to the dominant Western narrative traditions that emphasize linearity, meaning and rationality, composts have stood for approaches based on heterogeneity, impurity, and open-endedness (Bencke and Bruhn 2022; Hamilton and Neimanis 2018; Hohti and Tammi 2023). Donna Haraway, for instance, frequently describes the material-discursive processes of “worlding” through a compost. In compost, as in life, “critters are at stake in each other in every mixing and turning of the terran compost pile” (Haraway 2016, 97). Drawing on Haraway’s thoughts, multispecies scholars Riikka Hohti and Tuure Tammi (2023) have developed a method of *composting storytelling practice* as a way of becoming attentive to complex “worldings” and being open to new concepts, stories, protagonists and storytellers. Hohti and Tammi emphasize that this kind of storytelling practice has a dual capacity to focus on situated detail but also to open up to disordered margins and “unruly edges” (Hohti and Tammi 2023; Tsing 2021; Rantala and Höckert 2024).

Drawing from these openings, I engage in multispecies storytelling practice, but instead of understanding compost as a metaphor, I engage with the physical, visceral composts. If telling different stories changes how we shape the world, and what kinds of futures we aspire to, then these composting stories are also political by highlighting how and why the mundane and neglected matters must be paid attention to – and showing how it might be done. To attune to the stories of and with composts, I seek guidance from Anna Tsing’s (2016) strategy to “listen politically” in order “to detect the traces of not-yet-articulated common agendas.” By asking, what kinds of worlds may be storied when what and how we smell is taken seriously, I turn the method of listening politically into a speculative form of “sniffing politically.”

### **Methods and Data—and What is Bokashi?**

Before I delve deeper into composting storytelling, I shortly introduce bokashi to readers unfamiliar with the method. Bokashi—also known as urban composting—is a method of dealing with everyday kitchen waste by fermenting. Finnish Bokashi beginner’s guide describes the method with these encouraging lines:

This might feel strange at first, but is quite simple after all. Throw organic wastes in the bucket, add some bran on top of it, and close the lid. When the bucket is full, let it stay sealed for two weeks, after that it’s ready to be turned into soil. The waste then turns into soil in two weeks. It’s Bokashi! (Bokashi, the beginners guide)<sup>3</sup>

Bokashi is a mix of modern microbiology and various Asian traditions of utilizing indigenous microbes in farming. The commercial, laboratory-produced consortium of microbes commonly used in modern bokashi-making (consisting mainly of lactic acid bacteria, yeasts, and purple bacteria) was developed in Japan already in the 1980’s,

but the method has only recently been introduced to the Western world. Bokashi has been developed specifically to suit urban ways of life: the process is relatively simple, cheap, does not require a lot of space, and can be proceeded completely indoors. The method is almost as simple as the beginner's guide asserts. Therefore, the method has been quickly adopted into the lives of contemporary urbanites seeking to lead more ecological and healthy lives.

I have been immersed in the bokashi community since the method arrived in Finland almost a decade ago. Since 2016 and up to date, I have conducted multispecies ethnographic inquiry about everyday life with bokashi in the Nordic countries mainly in Finland. I have learned to make bokashi in my own family of four human inhabitants, and I have kept a "bokashi diary," which fluctuates from engaged enthusiasm to aversion and disappointment. In addition to recording my own experiments with bokashi, I have visited bokashi households in Finland making participatory on-site observations.<sup>4</sup> The most intensive fieldwork period took place during the academic year 2019-2020. In an attempt to follow the annual cycle of bokashi making, I visited a different bokashi household each month throughout the year, resulting in 12 in-depth interviews with bokashi practitioners and engagements with their bokashi buckets. Due to the pandemic situation, some of the visits were made online. The participating households were recruited via Finnish social media groups dedicated to bokashi making. The households were located in every part of Finland, and they represented different ages, ranging from retired to young adults, and family sizes, ranging from an urban single-person-and-a-cat home to an agrarian model of three generations living in one building. Most of the households were located in urban or semi-rural town edges, but some of them were located in the middle of a densely built city. In addition to on-site participatory observation, I have followed online discussions concerning bokashi making. This multifaceted ethnographic material forms the empirical backbone for this article.

### Olfactory Knowing

Sometimes a batch smells a little bit stronger when I have been too easy on the microbe bran, or when I have put something smelly in the bucket. For instance, onion peels generate "nice" smells. My sensitive-nosed partner always notes that "oh, it stinks here" but I think the smell resembles pickled vegetables. I don't think it's a bad smell at all. (Interview with "Rose")

As we bokashi makers rarely have any technical monitoring equipment at our disposal, we must turn our own bodies into monitoring devices enabling us to navigate through the process of fermentation. Most of the time, we sniff.

Although bokashi is often marketed as an odorless waste-handling method, it is a polyphony of all kinds of smells ranging from lemony odors to vomit-like stench. Every bokashi batch has its personal fragrance depending on what kinds of materials it has incorporated. A newcomer in a bokashi online group bemoaned that she had never in her life experienced the kinds of smells that she had encountered when mak-



ing bokashi. Bokashi community has developed a rich verbal repertoire, ranging from “vinegary” to “baby vomity,” for describing different odors to be able to share and compare their olfactory experiences.

Bokashi makers learn how to attune to the multilayered odors of their bokashi buckets and to sniff out, whether it’s time to drain the leachate from the bokashi container, or if the lid of the container has not been airtight. For instance, the irritating fumes that my son detected in the opening vignette were most likely butyric acid, which is sometimes generated in the process, and for the human practitioner, its rancid stench reveals that something is not going right in the process.

In bokashi making, then, smell becomes an important means of gaining knowledge about what is happening in the fermentation bucket. Having this kind of tacit understanding of different olfactory hues is a skill rarely needed in the modern world. As Constance Classen, David Howes, and Anthony Synnott (2002) point out in their cultural history of smell, smells have been typically repressed in the sensory order of the modern West. Since Antiquity, the sense of smell (and taste) has been considered an irrational sense related to embodied affects and emotions, and as such unnecessary for any rational meaning-making processes. Thus, the sense of smell has been deemed a “lower” sense connected to primitive instincts and survival (Classen, Howes and Synnott 2002; see also Mol 2022). The modernity has valued the sense of sight over other sensory modalities (Classen, Howes and Synnott 2002; Howes and Classen 2014; Mol 2022; Pink 2012). Classen, Howes, and Synnott (2002) argue that the ocular ideals of modernity have effectively deodorized all areas of urban Western life from sciences to city planning. This downplaying of smell continues today: when UK citizens were asked to rank their most and least valuable senses, the sense of smell was ranked least important (Enoch et al. 2019).

However, although the significance of the sense of smell in navigating through the modern world has been played down, even us modern, urban humans constantly interpret the lived environment through our noses. We receive and interpret masses of information about the chemical constitution of our surroundings, which warns about dangers such as pollution or fire, and enables us to read the atmospheres or moods of our companions (Pelosi 2006). Behavioral studies of human olfaction have stressed the important role of smell in food consumption and danger avoidance but also emphasized that odors are socially meaningful, not only in mate attraction but also for religious, medicinal, and aesthetic purposes (Majid 2021, 111). Social sciences of embodiment, e.g. feminist and practice-based approaches, have further emphasized the importance of pre-reflexive and corporeal, more intimate and sensory modes of knowing and relating (see e.g., Riach and Warren 2015). Embodied approaches sometimes suggest that corporeal *ways of sensing* (Howes and Classen 2014) may even be understood as primary modes of knowing and being-in-common because they pre-date the cognitive rational processes (Diprose 2002). In a similar vein, Annemarie Mol (2022) argues that it would be an underestimation to define smell and taste as merely proximate senses that provide knowledge about our own bodies and sensations – they are also means of orienting in relation to the environment.

Indeed, although smells are rarely noticed when there is nothing out of the ordi-

nary, they are an effective means of gaining information about the environment. Pleasing smells draw us toward their source, whereas repulsive odors work effectively like warning signs (Pelosi 2016). Just like my son, who escaped from the kitchen before he realized what had hit him, strong odors can force your body into action before the message has entered the reflexive part of the brain and has been coded into an intelligible thought. Smells have a power to make us act before we think because the smell has a direct pathway to the limbic system. That part of the brain is also responsible for memory and emotion, which is why sense of smell is strongly linked with emotional memories (De Bruijn and Bender 2018; Willander and Larsson 2006; Larsson, Arshamian and Kämekull 2017). Tight connection of smells and emotions might also give a partial explanation for why bokashi making is often experienced as pleasing and rewarding, sometimes even sensual. For many, the olfactory engagement with bokashi matter is an important part of the charm of bokashi making. When I asked the online bokashi community what in their opinion was the most appealing thing about bokashi making, many of them answered that they enjoyed the odours most: “The additional bonus is all the enchanting whiffs you encounter when opening the lid, reminding you of the recently savoured treats – sometimes sweet strawberry, sometimes bitter lemon.”

Despite their seemingly natural character, smells do not reveal an innocent or neutral truth about the world. Rather, how one interprets and reacts to a certain smell is a complicated cocktail of biochemistry and culture. Cultural studies scholars of senses emphasize that sensory perception is never separate from the cultural and material context where the perception takes place (Howes and Classen 2014). What I consider a pleasing or a disgusting smell is a result of my current situation, personal experiences, habits, and cultural customs passed on through generations, merged with information coded in my genes during millennia of evolution (see e.g. Gottfried and Wilson, 2011). Due to its affective and seemingly “natural” origin, olfactory classification is also a powerful political tool. Familiar or strange smells efficiently yet ineffably classify something—or someone—safe or dangerous, a friend or an alien (Classen, Howes and Synnott 2002). However, the multilayered odours of bokashi rarely operate on this kind of a simple “good or bad” axis. Instead, they provide a somewhat quirky scale from “charming” and “lemony” to “eyebrow-curling” aromas. As smells are politically used to affectively separate “us” from “them”—whether human or nonhuman—learning to tolerate, accept and sometimes even welcome different and strange smells into one’s own home is also a political act.

### **Microbial Relations**

I think about the microbes in bokashi leachate as my buddies. Sometimes, when the liquid has an awful stench, I reassure myself that despite the smell, it is nevertheless the earth’s buddy; it feeds the earth. It nurtures the bacteria in the earth so that erosion will not impoverish the soil. (Interview with “Violet”)

When I started fieldwork in bokashi community, I noticed to my surprise that almost all the bokashi practitioners were constantly talking about *microbes*. Bokashi practitioners were aware of the micro-organisms in the bokashi substance, and often referred to them as “buddies.” I soon realized that rather than treating the material in the bokashi bucket as generic “waste” or static “matter,” bokashi practitioners were reaching out to the invisible beings working and living *within* the waste matter. As my research participant Iris puts it, through making bokashi, she became aware of the “microbial sphere of the world.” Before, she had been aware of the visible beings in the soil, such as worms and insects, but the soil and waste themselves had remained inanimate to her.

Indeed, when a newcomer such as me enters the bokashi community, they are rapidly introduced to the world of microbes. Typically, a new bokashi practitioner is instructed to start the fermentation by utilizing commercial bran inoculated with a consortium of beneficial microbes, consisting mainly of yeasts, lactic acid bacteria, and purple bacteria. Bokashi practitioners learn that the fermentation in the bokashi bucket depends on symbiotic collaboration of these beneficial “effective microbes.” These are the ones that the bokashi practitioner needs to engage with in order to support healthy lactic acid fermentation. These microbes are “the ones doing all the fabulous work,” as explained by one of the pioneering Finnish bokashi practitioners. She continues: “We don’t see them, but we can feel their presence. When we put our hands into the soil factory and press the fresh black bokashi soil between our fingers, we can feel all the microscopic life swarming in the soil.”

Linnea, a retired bokashi practitioner from southern Finland, articulates this commonly shared conceptualization of microbes as “co-workers” (see also Helmreich 2007; Paxson 2013). In the interview, Linnea notes that when surfing various discussion forums focusing on fermentation, she often encounters “tidy young people” who have cleaned their utensils with chlorite, and then wonder why their ferments always turn moldy. She continues, “There you have it. Mold sneaks in when there’s nobody at home. These people don’t have any guardians in their fermentation containers.” Linnea explains that she is not afraid of the smells, as they are an intrinsic part of the practice.

Through encountering these kinds of stories, a novice bokashi practitioner becomes familiar with the “microbial sphere of the world.” Rather than being encouraged to name and identify individual micro-organisms in the bokashi bucket (that would be an impossible task), novice bokashi practitioners are taught to treat their microbial collaborators as fluid pluralities, whose identity is never fixed. Bokashi as a unit, then, is an ever-changing plurality. The presence of these pluralities is mainly “felt” by smelling. Human senses are not sensitive or skilled enough to identify the exact micro-organisms, but they can be useful in monitoring the *microbial processes* taking place in the bucket. Through exposing and sensitizing themselves to different and curious olfactory registers, bokashi practitioners develop more nuanced sensory literacy of different smells. For instance, a writer of a blog called “Bokashislope” describes how attuning to the smells paces their domestic bokashi routines: “I aim for twice a week (to drain the leachate) as I find that at that interval the scent is more cider



vinegar and less old-gym-sock pickle.”

However, cultivating new olfactory tolerance does not result in unconditional generosity or convivial togetherness with all kinds of beings. Practicing bokashi composting requires constant negotiations, and exclusion of certain elements as well. By knowing the tricks how to keep the “gym-sock-pickle” smells away from the process, the bokashi practitioner creates favourable conditions for fermenting bacteria (the firmicutes) they want to ally with, and avoids factors that cause rancid odours since the odour is considered the first sign of potential pathogens starting to dominate the process.

If the practitioner has been neglecting the bucket for too long, it sends out a “stinking objection,” as the bokashi community mockingly says. When something goes wrong and a bokashi batch turns awry, it transforms into a “Stinky” (named after the rogue, unpleasantly smelly Moomin character),<sup>5</sup> as happened to me in the opening story. As feared as Stinky’s visits are, he is also considered an efficient teacher, because once you’ve encountered him, you are willing to do all you can to avoid his return. However, the bad smell is not a reason to abandon the batch, but rather a challenge to do something. Rather than being ignored or denied, the strange and even unpleasant smells may be approached as curious challenges or questions. The stench is a means to reach out to the human tender. A cry for help, as it were. A disturbing smell makes you ask: “what should we do about it?” Ideally, it’s enough that you just sit back and enjoy the fragrances, sometimes you might need to add some more carbohydrates (maybe eat a banana?) or add some more bran, or make sure that the lid is sealed well enough.

For bokashi practitioners, then, smelling is not only a one-directional means to obtain information. Rather, a smell is an ethical call that demands a response. Bokashi makers often describe their engagement with the bokashi as a reciprocal form of negotiations or conversations with the microbial communities living in the bokashi matter. These conversations take place in the olfactory register.

### **Smell as Transspecial Correspondence**

Bokashi practitioners often say that bokashi communicates about its well-being through its smell. How, then, to describe these subtle forms of chemical communication going on between species big and small? Anthropologist Merlin Sheldrake has suggested in his bestselling book *Entangled life* (2020) that we should expand our concepts of communication so that speaking might not always require a mouth, hearing might not always require ears, and interpreting might not always require a nervous system (Sheldrake 2020, 46). Experts studying olfaction and chemoreception agree that smells are a form of communication. Scholars of olfaction (e.g. Gottfried and Wilson 2011; Pelosi 2016) maintain that the sense of smell is basically an ability to read chemical messages and react to them. What we perceive as different smells are a mixture of “odorants,” gaseous volatile compounds carried by the air to the receptors of our olfactory organs, which in human body are located in the nose. The sense of smell is vital for survival and reproduction for most animal species from beavers to insects,

worms, and fish. If the concept of olfaction is expanded to the broader concept of chemoreception—which means the ability to monitor the chemical composition of the external environment and respond accordingly—even plants and simple organisms such as bacteria and protozoa utilize chemical communication as a means of communication (see e.g., Gottfried and Wilson 2011).

It is therefore not far-fetched to say that microbial communities in bokashi and humans communicate through the smell. Is it possible to understand olfactory engagements that I have described above, as communication between species, or perhaps, to keep away from a language-centered idea of communication, as a form of *transspeciesal correspondence*? I borrow the concept of correspondence from anthropologist Tim Ingold, for whom correspondence is a way of capturing the co-constitutive dynamics of being: “correspondence is a joining with; it is not additive but contrapuntal, not ‘and...and...and’ but ‘with...with...with’” (Ingold 2020, 13). Correspondence aptly describes the act of being attentive to the world, being part of it, and responding to it. For Ingold, to correspond, is to “join our lives with those of the beings, matters and elements with whom, and with which, we dwell upon the earth.”

Mushrooms are an illustrative example of such biochemical correspondences between species. Sheldrake (2020) muses that fungal mycorrhiza is a chemical organ, swimming in a sea of chemical information. They are covered with receptors to which volatile molecules can attach triggering a signal that changes the behaviour of the fungi. He describes how truffles utilize strong odours to attract animals, which then spread their spores. Truffle’s molecules contain androstanol, a component which is also present in pig pheromones that make it smell so irresistible to pigs. Similarly, other fungi, such as matsutake, utilize peculiar smells to attract animals to spread their spores. Mushrooms hence reach out to other species through olfactory means. As Tsing (2016, 46) poetically puts it, smell is “a sign of the presence of another, to which we are already responding.”

In bokashi practice, the constantly ongoing correspondence takes the form of sending and attending to chemical messages and responding to them with hands-on, material means: Microbial communities in bokashi substance send out gaseous volatile compounds, humans monitor the chemical composition of the environment through their noses and respond accordingly, the exchange continues in a response (for instance by limiting oxygen intake or by adding microbes or carbohydrates). Finally, bokashi responds by chemically reacting to the changes in their environment. Of course, this affective, sensory, physio-chemical correspondence does not only take place between the human and bokashi, but all the sentient beings in the household. For instance, pets and insects are often attracted by the fermenting material, if they have access to it. It is also often instructed that culinary ferments, such as sourdoughs and kombuchas might be affected by other microbial communities nearby, so they should be kept separately.

In intracorporeal correspondences between bokashi and bokashi practitioner, gaseous smells leak from bodies and mix with other bodies. By spreading volatile compounds, other species penetrate human bodies and make them act—more or less voluntarily. Embodied reactions—whether repulsed withdrawal from or thrilled engagement with or something in between—work as a response. The exchange continues in

adjustments of metabolic conditions to which the microbial community of bokashi substance responds in a matter of time.

### **Sniffing New Relations**

In this article, I have sought cultivate, nourish, and share other kinds of stories that may hold promises of modest yet radical hope. I began this paper by asking, what kinds of worlds may be storied when what and how we smell is taken seriously. To do so, I adopted a mode of multispecies storytelling as a speculative tool for recognizing stories of togetherness and responsiveness beyond human language. Further, I focussed on olfactory engagements with bokashi composts and set out to speculate “not-yet-articulated agendas” and “unexpected allies” through the experiment of “sniffing politically.”

Bokashi, along with other vernacular fermentation practices discussed in this issue has proved helpful in sniffing not-yet-articulated agendas and unexpected allies with beings that are invisible to the unaided eye. In a similar vein, fermentation activist Sandor Katz (2020) has suggested that hands-on fermentation practices offer a means to engage with microbes and experience (human)existence as a distributed, interdependent ecosystem rather than a self-contained individual. Indeed, along with the stories of relating with the microbial waste matter, the visceral, sensual practice itself allowed bokashi practitioners to “feel” the multitude of microbes that inhabit the bokashi bucket. Through its smells, bokashi penetrates the body and thus unsettles the idea of a human body as a well-defined container, an idea that still sticks surprisingly tightly in the Western imagination and gives shape to political agendas. By cultivating more permeable imaginaries of how and with whom to be human, olfactory stories of bokashi composting may then have even ontological consequences.

Dirty and stinky engagements with bokashi enable paying attention not only to the celebration of friendly conviviality but also to the constant and often untidy negotiations and exclusions that take place in real-life human-microbial relations. As Sebastian Abrahamsson and Filippo Bertoni (2014, 125), themselves studying vermicomposting,<sup>6</sup> note, composting is not only about togetherness but also about exclusion and separation. Instead of a one-solution-fits all, successful composting demands constant sensory monitoring of the bin and deciding what goes in and what is kept out of it. For instance, some bokashis do not metabolize coffee grounds well (which they express by stinking) whereas others do not mind. Moreover, to generate healthy soil, the vermicomposter has to learn to “speak worm” by tuning into the metabolic processes of worms. Similarly, the bokashi maker, too, learns to “speak” the olfactory, metabolic language of bokashi, and thus to tune into conversations beyond human language.

In the process of learning to “speak bokashi,” I have grown accustomed to interpreting a whole spectrum of olfactory cues, ranging from pleasant sour whiffs to slightly repulsive vomit-like stench. I have learned to accept these messages from unfamiliar others into my home and my body, as something that in all their uncanniness escapes the continuum of “us” and “them.” However, I do not welcome all

kinds of odours or all kinds of beings into my bokashi bucket. Instead of practicing unconditional generosity, we bokashi makers learn to navigate by the smell to keep the process on the “good side.” Rather than trying to manage and control the exact composition of each batch, I need to accept a certain level of uncertainty. I have begun to tolerate a diversity of strange and even unpleasant smells and to welcome a range of peculiar materialities as part of my everyday life. I have learned to separate a ‘business-as-usual’ kinds of smells from rancid smells that are a cry for help, demanding attention and care. If I pay attention, the whiffs tell ephemeral stories about what is happening in the bucket—but I can never be absolutely certain.

### Coda

*A few months have passed since my encounter with food waste gone bad. I have collected the bokashi bucket as full as possible and then sealed the bucket for fermentation. Every now and then I have drained the leachate from the bottom of the bucket, and absentmindedly marked that the smell of the liquid has been almost if not entirely pleasing. A few weeks ago, I have opened the bucket, moved the fermented matter into a large container, and mixed it with soil that I had dug up from my backyard. First snow has fallen unexpectedly early, and my family is gathered in our backyard to prepare the garden for the winter. I carry the container outside from our garage, and inspect its insides in the bright daylight, and stick my fingers into the dirt to check whether the transformation into soil is ready. Nothing seems to be out of the ordinary, and I shovel the contents into the garden. I can feel that there are a few big lumps left, but most of the waste matter has been thoroughly incorporated into the soil. Only occasional off-putting fumes evaporate into the air and make my family members smirk with disgust when the smell reaches their nostrils. Usually fully transformed bokashi soil smells so earthy and pleasant that I often feel the urge to bury my nose in it. This time I have to admit that not even I can enjoy the smells. Nevertheless, I am happy that we made it; I responded to the cry for help, and together we turned the composition of the matter so that it was able to transform from a decaying matter into fertile soil, which will continue its life in my little backyard.*

### Notes

- 1 About problems of Western waste relations, see e.g. Bell 2019
- 2 For a more extensive analysis of how bokashi changes urban waste relations, see Kinnunen 2021 and 2023.
- 3 All the quotes have been translated from Finnish by the author.
- 4 I have anonymised the interviewees with names of Finnish flowers.
- 5 Moomins are famous fictional characters created by Finnish author and artist Tove Jansson.
- 6 A method of composting with the help of soil worms.

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