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COVER SHEET

Agential Guts — Care and Creativity within the Messy Multi-species Assemblage

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Abstract:

Agential Guts was an artistic multispecies practice of care; a messy entanglement with goats, soils, microbial companions, and gardening activities. The concern over biodiversity loss and many ecological crises caused by traditional farming led me to learn about alternative soil care and goat-keeping and to invent new modes of relating and caring in a multispecies context. The fieldwork drew from rewilding practices that strive to create biodiverse conditions. Configuring the meanings of multispecies assemblage beyond instrumentalising governance of different species, I followed what I called microbial desires in our relational enactments envisioning microbial and mammalian companionship from the more-than-human standpoint. My kin-making was my object of study from an academic perspective but the companion animals and microbes, soils, and plants were collaborators from the artistic point of view. The premises of new materialist and post-anthropocentric relational ontologies were embodied in our practice, where the matter was perceived as intelligent and affective, and thus able to lead to sources of novel ethical thinking-doing and art. I drew from the arts of noticing and considering collaboration as contamination (Tsing 2015) with messy,

microbially saturated milieu. Acknowledging how scientific knowledge is always shaping our affective encounters, I also tried to speculate with what we know about microbes leaking between different bodies. In producing a situated knowledge platform, *Agential Guts* contributed to both art-based research and social studies of microbes by introducing a speculative and embodied way to create knowledge together with nonhumans.

Keywords:

multispecies ethnography, sympoietic ethnography, agential cut, agential gut, care, human-animal relations, human-microbial relations, goat, soil, *Lactobacillus*, symbiosis, rewilding, kin-making, plantationocene

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Page description: A large video fills the top of the page, followed by text and, at the bottom of the page two images, with one image in the background. Images of two pink microbes function as buttons to move forward and backward between pages.

G.O.A.T Excerpt 1 of video work, 2022. The video depicts several goats gathered around a human figure standing on a snowy field dressed in a suit that sprouts grass. The figure of Gaia is a personification of the earth played by Milla-Maija Saari. The goats are depicted eating the grass from the human's clothing and a background voice speculates about how Gaia would sense and make sense of the phenomenon. Soundscape with Mai Pesonen.

G.O.A.T Screenshot, 2022. Pink microbes are floating on top of the goats in a wintery landscape.

Process image, 2021. Goat, faecal pellets, and light pink gut pillows on the snowy ground. Background image. Two pink microbes

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1 Introduction

Agential Guts was a multi-species practice of care in a rural area southwest of Finland in 2020–22. Messy and affective entanglement of kin-making with goats revealed creativity of vital matters and rendered companion animals as collaborators. This exposition manifests the circulation of matters materialising premises of posthumanist and relational thought within activities, such as gardening or taking care of other animals, and the microbial leakage therein. Art-based research facilitated situations where becoming Earthbound was a commitment to entangle with the 'complex systemic phenomenon that composes a living planet' (Haraway 2016: 43). Following the breaking of the habit of the nature–culture binary that separates humans from the rest of beings, this Earthbound position proposes that Gaia is not an alternative for 'nature' but a responsibility toward a planet, a relation. From that relational stand, Agential Guts created material conditions for telling what Bruno Latour and Donna Haraway call Gaia stories, stories beyond anthropocentrism (Haraway 2016: 41–43).

The story, which is also to be followed in ethnographic vignettes describing the fieldwork, is grounded in my multi-species home. It is a site where the material compositions of the artworks are implemented. I had been living in the countryside for about ten years, to have a garden and foraging access to wild plants, berries, and mushrooms, and to learn about the co-dependence of ecosystems in practice. During these years, our home became populated with other animals that had been abandoned. I had embedded collaboration with the more-than-human world already for years in my artistic practice. The affective, material, and messy events depict the entanglements that enabled empirical, embodied evidence to be brought forth from the encounters. These fieldnotes are found hovering from some of the images of this exposition. The notes demonstrate how instead of treating other animals, microbes, or soils and their metabolic processes as a (passive) matter or instrumentalising them as a medium for art, we were affective animals to animals, sympathetic matter to matter to each other. Affect is here treated in a new materialist configuration, where it is not reduced to categorical feelings but rather unravels the impact between bodies and things toward leaky compositions (Massumi 2014). The goal was to cultivate sensitivity and attentiveness toward especially sentient beings such as goats but also to emphasise the biodiverse composition that potentially enhances living conditions for all.

As Anna Tsing proposes, collaboration also means contamination (Tsing 2015). Proximity between different bodies spawned biodiverse flourishing; microbes were not inhibited from leaking between actors. [Excerpt 1](#) from the video essay *G.O.A.T.* (2022) depicts the intimate relations of care assembled by human and more-than-human agencies. The human is soil that grows plants, and the goats are munching this human. Agential Guts wanted to look for nonconventional methods for contaminating—collaborating to produce a novel understanding and practice of care that is generated by distributed agencies. Justification for collaboration coincides with an affirmative posthumanist standpoint moving beyond the dominant human subject position. It requires new modes of relations to dismantle a long history of human exceptionalism that keeps providing excuses for exploiting and instrumentalising other species (Braidotti 2013.) Thus, Agential Guts became an attempt to open space for new ways of relating with nonhuman kin that ‘needs to be explored as an open experiment, not as a foregone moral conclusion about allegedly universal values or qualities’ (Braidotti 2013: 80).

1.1 Multi-species Care from a Symbiotic Point of View

The exposition moves around the different sides of the project to gather all the different sensitivities that living in a multi-species arrangement and practising art as multi-species care required. Care was an approach, a practice, and an objective to subsequently generate new modes of care. Agential Guts’ distinctive characteristics were to centre multi-species artistic practice around notions of more-than-human care. Drawing from Maria Puig de la Bellacasa (2017), I approached a more-than-human collaboration and care beyond a productionist manner. Investigating and being involved with overlooked actors and practices formed an ethical baseline for the project to deteriorate a productionist ethos that has reduced the definition of care for the objectives of industries (Bellacasa 2017: 186). Agential Guts aimed to conduct a multi-species practice of care committed to maintaining and creating situations where care would precisely be developed and practised, to the contrary of industrial ends and means.

Agential Guts diverged from ethically problematic but normative and traditional conceptualisations and concepts of care, especially multi-species exploitations that are misleadingly considered care practices. Seriously acknowledging nonhuman animals as sentient beings, we need to recognise them as performing various labours of care in industrial settings, where the care the other species conduct is repressed (Coulter 2016.) The way multi-species is reconfigured is manifested in the video excerpts of *G.O.A.T.* (2022) in the ways I wish to present our entanglement from the perspective of Gaia as animal politics: ‘Politics of performative gestures [...] and participative art in the wild’ (Massumi 2014: 40).

Another aspect of care in Agential Guts was to generate definitions for care, based on the facts of microbial companions that change the perception of each body in the assemblage. Locating this project in our guts enabled rethinking about how to acknowledge the whole assemblage and not just humans. This was possible only through the situated and material practice of care with companion critters. The recognition of more-than-human agencies of care leads to the dimension of the project; the artistic production with companion critters, which were not just mammalian bodies but also microbial bodies in between. My baseline as an artist was to expose my sensing, thinking body to other species, and a Gaia story emerged from this co-enactment.

1.2 Messy Microbial Companions Forming the Standpoint

I position myself within the emerging field of the social study of microbes that invents novel methods to make sense of how microbes impact societal life (CSSM, Centre for the Social Study of Microbes, website). Scientific understanding altogether underlies our relations with species we cannot sense ourselves, especially with what Haraway calls ‘companion critters’ that fold ‘inside each other’s tubes’ (Haraway 2016: 98). Thus, Agential Guts looks not only at our human and nonhuman agencies but also at how technoscience enacts these more-than-human assemblages (Barad 2007). Art-based knowledge production in Agential Guts elaborates methods and theories of the social study of microbes. The project contributes to this field by offering embodied, situated, and partial sense-making, where knowing is co-enactment with the species we wish to understand (Brives, Rest, and Sariola 2021).

The project leaned on the facts stating that symbiotic bacteria, which we also receive from ecologies outside our bodies, are critical for health and maintenance. As microbiomes affect immunity (McFall-Ngai and others 2013), mood (Dinan and Cryan 2013), cognition, and even social behaviour (Forsythe, Kunz, and Bienenstock 2016; Sgritta and others 2019), it is no longer possible to dispute the influence of microbes even within our thinking-feeling (Haraway 2016: 61). The impact of gut microbiota on brain function and behaviour is shown in a number of studies. Certain gut bacteria produce metabolites, including neurotransmitters like serotonin, dopamine, noradrenaline, and GABA (Haas-Neill and Forsythe 2020.) Could Lactobacilli signalling with our mammalian brain, affecting behaviour and mood (Forsythe, Kunz, and Bienenstock 2016), be seen as an affective factor in something other than a biologically reductionist way? The baseline is to make space for imagining these microbial agencies and desires beyond intentionality reserved for human subjects (Barad 2007: 177), and mechanistic takes on human and nonhuman bodies (Braidotti 2013). What if we could

assemble in a way that does not repress the care work of other species, whether it is mammalian or microbial, but supports 'interspecies solidarity as an idea, a goal, an ethical commitment'? (Coulter 2016: 212).

We have entered into a holobiont paradigm knowing that the anatomy, development, immunity, and physiology of mammalian bodies are constituted with microbes (Gilbert and Sariola 2020). Instead of individual bodies, we form symbiotic assemblages at whatever scale, and all of us players are symbionts to each other (Haraway 2016). Ecological studies with different species' microbiomes show that all organisms' adaptive capacities can be linked in various ways to their microbiomes (Kowalski and others 2015). Agential Guts' messy entanglement expanded from mammalian bodies to soil and its microbiome, taking note of how soil microbiota also contributes to health (Blum and others 2019). Ruminants in particular, who evolved by fermenting grass and grains with gut bacteria (Baldwin and Connor 2017), show us how we have always become together with microbes in earthly symbiosis (Haraway 2016.)

Furthermore, living close to 'natural environments' creates microbially saturated milieus that enhance our immune system, as the biodiversity hypothesis demonstrates: 'Biodiversity hypothesis states that contact with natural environments enriches the human microbiome, promotes immune balance, and protects from allergy and inflammatory disorders' (Haahtela 2019). Concepts like biodiversity hypothesis create new meaning for the relationships between humans and other species. Agential Guts aimed to evade centring the meaning of biodiversity and multi-species care to human health by returning to the unruly nature of the microbial leaky agency. Why these paradigm shifts matter is that symbiosis is threatened by modernity as humans have removed themselves from nature and are domesticating and managing other species industrially (Gilbert and Sariola 2020). Ecological studies have shown intensive and antibiotic methods for managing plantations or factory farms, creating conditions for invasive and pathogenic species to proliferate (Lorimer 2020: 71).

The most crucial factor in the new paradigm that can be called the microbial or bacterial turn is that the 'symbiotic networks of the human holobiont are enmeshed in larger symbiotic networks that sustain the planet' (Gilbert and Sariola 2020). Thus, the multi-species care in this project was situated on rewilding and saturating the microbiome of soils, plants, and our mammalian bodies in planetary sympathy. The whole assemblage was believed to become more resilient, saturated, and able to resist invasive species this way (Lorimer 2020). We concur with what Anna Tsing aptly formulates: 'Meaningful sustainability requires multi-species resurgence, that is, the remaking of livable landscapes through the actions of many organisms' (Tsing 2017: 51). A conversation between Tsing and Haraway (Mitman 2019) introduces the concept of the plantationocene. In the plantationocene, crops are growing in homogenous masses of clone-like groups, producing surplus by the proliferation of species on demand. Removing other plant species and devastating soil to the degree that no microorganisms can survive the plantationocene creates ecological simplifications profiting from the extractive harnessing of humans and other species (Mitman 2019.) By acknowledging the complexity and messiness of the whole assemblage, the material dimension of our practice went beyond the violence of monocultural processes that instrumentalise species, isolate objects, and treat them separately from their environments.

I remark that our kin-making with the objectives of creating diversity enters into conversation with regenerative farming and rewilding practices and could be seen as belonging to the 'dirty governmentalities' described by Jamie Lorimer (2020). The probiotic discourse around microbiomes closely whirls around encounters with agricultural animals, soil, raw and fermented foods managing life with probiotic modes instead of vigilant control over specific pathogens. Besides enhancing the biodiversity in larger scales, exposure to certain bacteria or even parasites like helminths is allowed, or even desirable, to gain better immunity (Lorimer 2020). Human health, agency, and intentions quickly penetrate new conceptions. Agential Guts agency is shared, processual, and distributed. Leaking to escape individual bodies. Enacting rewilding as an aesthetic and creative multi-species arrangement, I ask: what type of definitions and practices of care emerge when reconfiguring collaboration as contamination in art-based practice?

1.3 Artistic Affinities of Agential Guts

Agential Guts is grounded in contemporary artistic practices that curator Jens Hauser (2022) has dubbed a bacterial turn in art. The artistic work within this scene is usually explicitly post-anthropocentric, as in collaborations with real living materials within bio-art in general. Similarly to the probiotic turn, the trend is to envision how to collaborate with microorganisms. The curiosities I align via Agential Guts are found in different kinds of work with microbes, other critters, or both. What unites these practices is that they all have an approach that gives an actively participatory role to nonhuman species. My first encounter with nonhumans directing an art project was with a brainless protozoan, in the work by leading artist Jenna Sutela (2017). *Orkut*, in collaboration with the slime mould *Physarum polycephalum*, led Sutela toward unknown results (to a laboratory in Japan, for instance). Karin Bolender's ongoing project *The Rural Alchemy Workshop* (R.A.W.) is not scripted artwork but stems from worlding with a companion donkey. Bolender was literally led to backyards and offroads by their donkey, since 2002 'negotiating between human logos and other embodied ways of being and knowing' (Multispecies Salon, n.d.). Through this ongoing practice, Bolender has produced different artworks and touched upon the microbial agency of a donkey's belly, for instance, in *Gut Sounds Lullaby* (2010–12).

I feel an affinity to the works of artists who have other animals in their art in ways that can be called animal politics, as they are playful gestures in sympathetic collaboration. I feel a connection with the objectives that are found in the compassionate artistic research of Outimaija Hakala (2022). Her work does not predicate the bacterial turn but stems from critical animal studies and explores the problematics of representing other animals in art. Through artistic human and dog collaborations, Hakala strives to create room for just ways of conducting artistic work with a companion dog. Hakala demands more compassionate relations toward other animals, emphasising their experience and feelings. In their human–dog collaboration, Hakala discovered Snejka tending to paint, and let her companion dog be seen as a fully active agent when Snejka's paintings were presented alongside human artists' works in exhibitions (Hakala 2022).

My close colleague in the social study of microbes and art-based research on human–microbial relations, Oona Leinovirtanen, with whom I collaborate (to the degree we do not

know where one's ideas end and the other's begins) has a practice that approaches microbial companionship in corporeal and imaginative ways that expand our sensibilities on microbial worlds. In her exhibition *Earth is a Collection of Abilities* (2022), she shared a microbial milieu with a mole who is a competitor but also a kin in her gardening practice. More importantly, the mole was directing her perception beneath the ground, where it lived with microbes and larvae (Leinovirtanen 2022). Collaboration with Leinovirtanen took a speculative form when we were artists in residence in Kilpisjärvi while a group from the social study of microbes led by Sariola was writing chapters for *With Microbes* (Brives, Rest, and Sariola 2021). We utilised the laboratory at Kilpisjärvi biological station to make a magical prediction out of the scholar's microbial samples. As artists, we can push the limits of the meaning of biological matter and its technoscientific enactments.

[2 Agential Art >](#)

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Page description: Two microbe buttons at the top of the page, allow navigation between previous and next pages. Several images documenting the Agential Guts exhibition at the SOLU gallery are scattered among the text. A video excerpt is shown at the bottom of the page, with one image in the background.

Hatching Goat Microbes, 2022. Five round clay objects lie on pink satin pillows resembling visceral organs. Image by Liina Aalto-Setälä.

Agential Guts exhibition overview 2022. Pink satin pillows are scattered around the space. A large wooden branch, which has been gnawed by goats, lies on the floor, while another, leant against the wall, is crowned by a printed 'gut pillow' and hung with faecal pellet strings. Image by Liina Aalto-Setälä.

Agential Guts exhibition detail 2022. A large wooden branch is leant against the wall, crowned with a printed 'gut pillow' and hung with faecal pellets. Image by Liina Aalto-Setälä.

Agential Guts exhibition detail 2022. Two headphones placed on the satin 'gut pillows' invite visitors to sit down and view the video work projected on the wall. Image by Liina Aalto-Setälä.

Making Kin, *Agential Guts* exhibition 2022. A detail from a printed image on a satin textile work. A saturated pink image of a girl feeding a young goat.

G.O.A.T Excerpt 2 of video work, 2022. Goats depicted against a wintry backdrop, a voice-over talks about yogurt and the guts. Sounds of a stomach rumbling turn into guitar music. Soundscape with Mai Pesonen.

Background image: a reflection of the sun on grass.

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2 Agential Art

Sculpture-like materials that were left from goats secreting and excreting were exhibited in SOLU / Bioart Society gallery in Helsinki, within the project called 'm/other becomings' (2022).

This exposition and the artworks would have not been possible without the co-production with goats. The Gaia story of Agential Guts took different forms. In pink textile works, I wanted to approach the visceral feeling of guts. Other elements were objects that emerged from the matters of care, out of faecal pellets, salt stones, and branches gnawed by goats. The story was also told in the form of a video essay. Proposing that we collaborated with goats was overshadowed by human animals having more agency over other animals, and I cannot—and do not wish to—deny that asymmetry or any other asymmetries of the assemblage. This staying with a trouble, as Haraway (2016) famously formulates, led to further thinking about what care, creativity, and collaboration might mean in the post-anthropocentric context.

What my project in all dimensions tried to achieve were conditions that could materialise the affirmative branch of posthumanism. This stand is already imagining and dreaming of creating better situations for more-than-human coexistence instead of criticising human-centred attitudes that are inherited from enlightenment and humanism (Braidotti 2013: 37–54). Affirmative posthumanism is imaginative and joyful, being well suited for artistic aspirations: ‘By transposing us beyond the confines of bound identities, art becomes necessarily inhuman in the sense of non-human in that it connects to the animal, the vegetable, earthy and planetary forces that surround us’ (Braidotti 2013: 107). Rearranging the connections embedded in the works like *Hatching Goat Microbes* embeds the process of kin-making; we were lateral relatives connected via our microbiome (Haraway 2016: 103).

2.1 Rewilding as Art

Moving around with goats and collecting materials was part of the daily practices of care where the aesthetic choices were made on the go, almost as if they were not my choices but aesthetico-political choices; animal politics (Massumi 2014). The shaky camera and unfocused frames hint at the emergence of ethnographic situations that were sudden and directed by unruly turns of events. Breaks in character, where the human sometimes performed and then became a caretaker more casually, also referred to the possibility of changes in subjectivity, eco-philosophically constituted by multiple relatings (Braidotti 2013: 49). We had to cross the monoculture fields to reach the forest. It felt stunning to belong to this cluster, where we were glued together by our sensory, affective, and material belonging. I felt like goats were inviting me to revolt against the plantationocene. Trekking in the forest was a way to get to know my companion goats in a way that allowed them to make collective choices of where to turn, and when it was time to return home. Their fierce looks were unforgettable when they entered the forest, rewilding us all.

My human body or my creativity were not separated from the rest of nature and the other-than-human bodies and their abilities. My actions formed a relational bundle via a caring assemblage glued together by perhaps *Lactobacillus reuteri* or *ramnosus* or other strains. Having *Lactobacilli* or other microbes as our directors released nonhumans from their passive or mechanistic status (Braidotti 2013).

‘But was it me or *Lactobacillus* [...] who was the caretaker of the situation?’ I asked in the video essay titled *G.O.A.T.* (2022), seen in [excerpt 2](#). Speculating about exchanging microbial companions, I address the agency of *Lactobacilli* through the process of milking a goat and

fermentation of yogurt; practices that in industrial settings have become more than problematic. Microbes participate in the labour of care, especially different strains of *Lactobacilli*, which have earned a 'good bug' title as they inhibit pathogenic microorganisms wherever they metabolise and help to conserve aliment via fermenting.

I ended up including yogurt as one of the topics of *G.O.A.T.* (2022), excerpt 2, but I only talked about the fermenting process, and filmed snow instead. I did not wish to continue milking the goats, because it felt like choosing to align with the more instrumental approach practised in exploitative industrial settings. Getting manure for the garden as a side product felt more in line with the circulating matters, without taking advantage of the goats that kept producing milk after breastfeeding their offspring. *Lactobacilli* appear to act in advantageous ways wherever they abide, be it fermenting, composting, or inhabiting the gut, and signalling with the brain. Yet, I want to underline that more important than stating which microbes benefit guts and soils is to acknowledge the multiplicity of multi-species assemblages that make up the holobiont in its complexity in uncontrollable and wild ways.

2.2 The Creativity as the Basis of Animal Politics

Making art together with goats was a constant dialogue with cultural and critical animal studies that stress the demand for special moral care and responsibility of sentient beings (Hakala 2022). In those settings, microbes and, for example, plants are considered less animated for a reason. Agential Guts hopes to add an ecologically attuned way of making space for ethical coexistence with an emphasis on the ethically sustainable caring practices of companion animals like goats, yet insisting on how biodiversity and the existence of the microbial realm should be embedded in these responsibilities.

Abundance meant biodiversity, not surplus. Goats were kin, not livestock. The goal was to design caring practices that could be more sustainable for both these animals and the ecologies within which we were living while rewilding the artistic practice as well. Masumi (2014) shows the way in combining these endeavours by looking at sympathy, playfulness, and creativity at a same glance. Agential Guts interprets this by introducing speculative ethics of care to animal politics by creating a caring standpoint, where thinking is not just epistemic stance but opens space for new meaning (Bellacasa 2017: 59). The care as a speculative ethics became a form of playfulness bridging the gap between species by creating space for rearranging our relations. The video essay *G.O.A.T.* was initiated by trying to experience microbial agency in our caring relations, as in [excerpt 4](#). Individual microbes are invisible and can be looked at only with microscopes. The speculative and playful gesture of the project was also still trying to detect them with bare eyes, perhaps from the radically relational Gaian position, to play with the impossible and maybe see something indiscernible. Thus, the artistic exposition was not a side product of the ethnographic method or illustration for theories, but a natural urge within our matters to be playful.

In *G.O.A.T.* [excerpt 3](#), the goat's faecal pellets play a big role. They work as an entrance, opening the speculative and material door to the future as they activate soil microbes that live in symbiosis with the plants (Lorimer 2020: 48). I weaved faecal pellets in the installations of Agential Guts. [Multi-species Care](#) (2022) is an attempt to rethink relationalities between guts,

wood material gnawed by goats, their faecal matter, and gut-like pillows that try to evade the dichotomies of inside and outside, exposing the guts as tactile soft objects. A human is hugging a goatling in a print sewn into one of the pillows, directing attention toward the interspecies affectivity.

Small-scale, mutually inclusive, symbiotic messiness was juxtaposed with the exploitative and rigid practices of the plantationocene that are far from playful. We were surrounded by the homogenous region of wheat, which was governed by soil turning that destroys the fungi. The soil's capacity to provide yields was sustained with artificial fertilisers, and sprayed with pesticides to control various pests and disease carriers, and glyphosate to kill certain weeds and grasses. Sadly, mono-crop farming ensures that no other species would survive alongside the cultivated species. To provide an alternative to the practices that deplete soil, I wanted to pay attention to the co-enactment of the guts. Making our mammalian, soil, and plant bodies assembled and not separated, I emphasised the care within the metabolic, composting, and transformative processes that life is dependent on.

Committed to the practices of care, *Agential Guts* was rethinking and imagining nonhuman artistic and caring labour, and looking at the agency of our gut microbiome from that perspective. Care in *Agential Guts* was maintenance work that embraced microbial exposure. It was also creating a condition where the processing of different materials by goats became art. Thus, care and the artistic process were enmeshed, as they both required attentiveness toward nonhumans in the project and allowance for goats and their rumen companions to do what they desired to do.

What was central in the standpoint we created with goats was to notice how not only my imagination but also my becoming-with goats drew the basis for creativity; the material was not reduced to passive substances acted upon by humans. In this speculative manner, I made claims like 'cuteness is a microbial wish to make species that need to exchange microbes very desirable to each other' (*G.O.A.T.* 2022). Pushing microbial agency to the fore, *Agential Guts* allowed multi-species relationality to be imagined and further diffracted. Without just implicitly adopting new facts about microbiomes, this fieldwork launched a standpoint for feeling and creating with science and the agents that the sciences represent.

Many of the artworks in the exhibition were something that companion species had 'designed' mostly by their metabolic processes, which in one way or another involved microbial desire: the aesthetics that mouths, guts, and microbes transform reveal the vital play of matters as symbiotic sympathy. Cattle manure nourishes plants by activating soil microbiota, which in turn makes plants grow better. Soil works as a carbon sink when the fungi and bacteria make the soil a living entity, but with traditional farming carbon to nitrogen cycles become dysfunctional. We spread compost in our garden and covered the soil with mulch, selected companion plants, and used compost teas to enable microbial activity inside the soil.

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Page description: A large image fills the top of the page, followed by text and accompanied by another image, one image of the background, and a video excerpt at the bottom. Two microbe buttons allow navigation between pages and are placed on the right side of the page below the first image.

Holobiont 2022. A Goat and a human being are depicted licking a salt stone hanging on the wall of a barn. The goat is blurry and the focus is on the human tongue. The image depicts the possible microbial exposure mediated by the object.

Agential Guts exhibition detail *Multi-species Care* 2022. A wooden branch is leant against the wall, crowned with a printed 'gut pillow' and hung with faecal pellets. The print displays a close-up of a young goat on a human lap. Image by Liina Aalto-Setälä.

G.O.A.T. Excerpt 3 of video work, 2022. The video depicts goats wandering about in their pen, the ground is covered with faecal pellets on top of a door lying on the ground. The voice in the background repeats the word 'entrance' on a loop, rhythmically resonating with the way goats are clapping horns together.

Background image: A goats' hoof on the snowy ground.

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3 Methods and Theories

Concepts transform thinking and doing and produce unconventional experiences and embodiments of relations, and this exposition format emphasises this interlinkage of academic and artistic endeavours. Agential Gut's contribution to these ontological conversations is to experiment with posthumanist thought via art-based research and to produce the Gaia story that these theories invited to emerge, supporting speculative ethics to fuse with art-based practice and complete each other. Most key concepts, from processual and relational ontologies to this project, are theoretical ways to write about new modes of relating and caring in the multi-species context. The concepts like affect, agential cut, sympathy, symbiosis, and methods, and means like diffraction and becoming-with were lived in Agential Guts.

The theoretical and methodological underpinnings of Agential Guts were that human actions cannot be solely derived from individual endeavours, and they need to be posited within relations (Barad 2007). Acknowledging symbiosis as a baseline to approach our agencies, I drew from a simple statement from Donna Haraway: 'We become with each other or not at all' (2016: 4). This being in the middle and breaking binaries of human and animal, nature and culture, subject and object, host, and microbe, etc., is the ontological basis derived also from the philosophy of Deleuze and Guattari (1987). Being in the middle of processes and beings, being plural like Gaia, which is made up of multiplicity, is seen in [excerpt 1](#) of *G.O.A.T.* Being in the middle is acceptance of becoming Earthbound. For Bruno Latour (2017), Gaia is the thin layer of the earth but also a disposition of responsibility toward it. Cultivating sensitivities needs time and repetition: 'After each passage through a loop, we become more sensitive and more reactive to the fragile envelopes that we inhabit' (Latour 2017, 140).

Brian Massumi (2014) brings us in the middle, stating that symbiosis is sympathy. The prefix sym- means 'together' and centres my argument around the processual and affective messiness of multi-species assembling. Furthermore, Massumi sees creativity in the matter as interspecies playfulness, which fuels becomings and makes unprecedented things emerge. Massumi interprets sympathy as an affect in a new materialist vein, something that can concern nonhuman agents, exceeding human feelings such as pity. Coming from Spinoza to Deleuze and Guattari (1987), affect is bodies' capacity to affect and be affected and can concern as much as a goat, a microbe, a branch, and a human. Affect is the ability of all kinds of bodies to influence and become influenced. Affect in a new materialist vein is always wiping more than one, requiring a politics of relations, animal politics (Massumi 2014: 27–42). This concept, elaborated as a sort of nonhuman affect, creates a continuum between species (Massumi 2014). Agential Guts speculated how this sympathetic, nonhuman affectivity is embedded in microbial agency enduring to care in particular ways.

The symbiotic and sympathetic assemblage of care within Agential Guts was tactile, olfactory, and audible. Without reducing our entanglement into abstractions or scalable customs, it was rather about envisioning and embodying new forms of relating and thinking-with (Mitman 2019). Mammalian-microbial messy and muddy kin-making created new relations where asymmetries were not ignored but hierarchies were actively dissembled in the actions of microbial exposure, which the exposition demonstrates and the Gaia story tells.

3.1 Contribution to the Social Study of Microbes

The social study of microbes asks what if we take the holobiont paradigm as a starting point and not as a result. The social study of microbes that develops novel methods and theories to make sense of the microbial world and its societal meaning operates fractionally in the domain of Feminist science and technology studies (STS). Utilising speculative thinking, for instance, to open space for alternative meanings to technoscientific configurations is common within Feminist STS. Likewise, the social study of microbes it fosters space for being sensitive and committed to more-than-human worlds and aids at decentring human agency and privileges dismantling perception that places nonhuman agents as inferior to humans, objects of knowledge, or passive and mechanistic entities that can be instrumentalised (Bellacasa 2017.)

Questioning human exceptionality by becoming and knowing with companion animals (Haraway 2016) and microbes (Brives, Rest, and Sariola 2021) acknowledges the different ways of meaning-making beyond the objective view from nowhere (Bellacasa 2017). *Agential Guts* contributes to the social study of microbes by art-based, speculative methods by practically generating multi-species practices of care where knowing would also stem from the holobiontic coexistence. It strives to work with care in the possibilities of meaning opening constantly around the scientific knowledge on microbial companions.

Barad (2007), among others, creates space for acknowledging nonhumans as active participants in knowledge production. In my home, which was also a standpoint and an artist's studio, I experienced in action how the knower and known coalesce when research is not about reflecting but about diffraction that produces difference (Barad 2007). An agential cut is an epistemic tool for co-enactment, contrasted to the cartesian cut that separates subject and object, knower and known (Barad 2007). The agential cut, a conceptual contribution to knowledge practices, points out how any activities to create knowledge or produce facts on other species are entanglements, and diffract both. Similarly to Barad, Haraway points out how nonhumans also shape the study, and not only humans hold an active position in knowledge production (Haraway 2008). Aligned with this, thinking with other species like goats and microbes configures an ethical stand to acknowledge their agency. Thinking-with is not just a theoretical but a methodological new materialist and post-anthropocentric justification of collaboration with nonhumans. It is embedded in the feeling of becoming influenced by others, and this draws the condition for the vulnerability that ethical coexistence requires (Barad 2007: 217).

The arts of noticing produce sense-based knowledge that the social study of microbes also relies on (Brives, Rest, and Sariola 2021). In *Agential Guts*, the microbiome of the gut is a material place for the agential cut, thinking-doing, and artistic collaboration with nonhuman companions. Epistemic conceptualisation can be prosecuted beyond words generating tactile, visual, audible, and multi-sensory meanings. Accordingly, the guts and brains of humans and goats connected by microbial agency was materialised in the artistic exposition. Methods for reconfiguring our relationality and care are shown in *G.O.A.T.* [excerpt 1](#) and [excerpt 2](#). These scenes display the actions required to think with care and creativity with soils, plants, and goats, to commute and distribute hierarchical and isolated positions, and to allow messy entanglement of the microbiomes. The agentiality of the gut, which refers to the intense space of microbes that we share, is a material, embodied, and situated place for creating knowledge with microbes.

3.2 Multi-species Ethnography

As Anna Tsing (2015) proposes, the art of noticing that is central to multi-species ethnography requires multi-sensory skills. *Agential Guts* had 'a research object as contaminated diversity and unit of analysis as the indeterminate encounter' (Tsing 2015: 37). Most of the skills to learn in gardening and living with other animals require embodied and sensory attunement; for instance, microbes cannot be seen as such, but olfaction and other senses are used to detect their actions. In the case of composting faecal matter and biowaste, for instance, hands-on doings skills are a necessity in becoming more creative with what can be done to improve

conditions for the whole assemblage. Multi-species care becomes repurposed via sensing-knowing of the ethnographic fieldwork. Care is not separated from what motivates and directs the research and artistic collaboration. The significance of faeces is made explicit in the opening scene of the video work *G.O.A.T.* 2022 ([excerpt 3](#)).

The fieldwork of *Agential Guts* was a microbial exposure enabled by sympathetic and symbiotic becomings-with. The ethnographer was entangled with the study subject, circulating symbiotic matters and re-organising them on a small scale. *G.O.A.T.* [excerpt 1](#) presented a jacket-sized crop field to detour the roles and hierarchies of the agents in the assemblage. Because of the relational and even symbiotic-sympathetic practice of kin-making, I started calling the method in *Agential Guts* sympoietic-ethnography. The level of observation was not exactly auto-ethnography, since knowing and artistic collaboration were all happening within the messy relations of care, and the knower was not a separate subject. Sympoietic-ethnography expands on the concept of sympoiesis; making with, worlding. Haraway has drawn the term 'sympoiesis' from biology, where it occurs in contrast to autopoiesis, which assumes biological individuality (Haraway 2016: 33, 58). Additionally, sympoietic-ethnography elaborates multi-species ethnography, accounting for how all agents are active in the co-enactment of knowledge. As Haraway proposes: 'We have a mammalian job to do, with our symbiotic and abiotic sympoietic collaborators' (Haraway 2016: 102).

[◀ 2 Agential Art](#)

[4 Generating Multi-species Modes of Care](#)

[▶](#)

This accessible page is a derivative of <https://www.researchcatalogue.net/view/2128308/3223720> which it is meant to support and not replace.

Page description: A large image fills the top of the page, followed by text and accompanied by a video excerpt below and another, smaller image above. Two microbe buttons allow navigation between pages and are placed on the right side of the page.

G.O.A.T. Screenshot, 2022. A close-up of a goat's fur, diffracting light.

G.O.A.T. Excerpt 4 of video work, 2022. A close-up of grass, slips in and out of focus as the sparkling raindrops diffracting light. The voice in the background speculates on seeing the microbes with bare eyes.

The smaller background image depicts diffraction of sunlight on snow.

Agential Guts — Care and Creativity within the Messy Multi-species Assemblage

Riina Maaria Hentriika Hannula

4 Generating Multi-species Modes of Care

The sense of creativity in the symbiotic relations became a link between care practice and artistic output. When different species collide, they do not just mechanistically follow some structural biologically determined rules but create difference: new forms, or modes of relating (Massumi 2014). In the plantationocene, creativity is diminishing because of the control that surrounds the milieu from all directions. Productionist principles define care for the objectives of industries, but more-than-human ethics of care offer alternative meanings and means for care (Bellacasa 2017).

Finding this place of active participation with the more-than-human world is the corpus of art in *Agential Guts*: it is not human inspiration from 'nature' but art done within relations, acknowledging the aesthetic and creative force of different kinds of bodies, and within matter, especially in how things transform each other and thrust them in a becoming (Deleuze and Guattari 1987). Conceptual, artistic, and other contributions to perceiving nonhuman agency as creative, caring, affective and affected, desiring, and playful are much needed as long as humans keep separating themselves from the rest of nature and othering different species.

Obtaining knowledge with companion animals and microbes substantiates a distributed web of

care beyond objectifying, representing, and harnessing these companions. Caretakers are not just the ones who have a rational or emotional mind that makes decisions on behalf of passive others, but care is distributed across different agents and guts that circulate matter together. Reciprocity of care is asymmetric and multilateral, collectively shared. Being situated in soil communities the way Bellacasa suggests, we embedded relations of interdependency into our research (Bellacasa 2017: 192). Kin-making was stemming from material conditions, acknowledging that microbes and goats also care for. And humans certainly should not care for them only for humans' benefit.

The anthropogenic deterioration of the environment produces enormous concern by itself but is more largely studied as a factor in the context of human health (Gilbert and Sariola 2020.) Because of the lack of interest in conducting research for the sake of the environment, and instead prioritising human well-being—there is a gap in the approaches to understanding the complexity and messy webs of interdependency. Concluding care as a symbiotic event involves an extended avenue to what it means to care about, take care of, and locate in reciprocal relations of care, which emerge as more-than-human technoscientific assemblings (Bellacasa 2017). In alignment with these endeavours lingering with the messiness of the holobiontic paradigm, Agential Guts proposes moving from self-care to multi-species care, which could account for all the agents in the specific, situated webs of care.

The distributed agency of care within the guts of soils, goats, and humans that I ended up following enacted microbial desire: I did not consider humans as having the only agency of care in the assemblage, but our abilities to care for stems from the desires that nonhumans invest in us. This involves especially microbes, as they need to be hosted by different bodies. Therefore, what Agential Guts cared for and about stemmed from the affective and sensory Earthbound learnings that were possible only through the arts of noticing. Care sparkles within agents diffracted by speculative effort, a lot like how microbes participate in holobiontic bodies in their leaky and messy way.

[◀ 3 Methods and Theories](#)

[5 Conclusions ▶](#)

This accessible page is a derivative of <https://www.researchcatalogue.net/view/2128308/3223760> which it is meant to support and not replace.

Page description: A montage of four images underlies and surrounds the text. Two microbe buttons allow navigation between pages and are placed on the left side of the page.

Agential Guts exhibition detail 2022. A large wooden branch, which has been gnawed by goats, lies on the floor, amongst satin ‘gut pillows’.

Agential Guts exhibition detail 2022. A string of faecal pellets hangs from a wooden branch, which has been gnawed by goats.

Agential Guts exhibition detail 2022. A satin ‘gut pillow’ with a print of microbes lies on the floor. Image by Liina Aalto-Setälä.

Agential Guts exhibition detail 2022. Plastic strings, used for binding hay bales, are woven around a branch, which has been gnawed by goats.

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5 Conclusions

Agential Guts provided speculative ‘visions that “cut” differently’ (Bellacasa 2017: 61; Barad 2007). It was an attempt to generate Gaian vision, beyond a nowhere position or universal eagle-eye vision. On the contrary, a Gaian standpoint is a situated and partial perspective, grounded in planetary desires and sensitivities. For Haraway and Latour, the meaning of Gaia is not a totalised planet or mythical entity, not even a superorganism, but ‘an injunction to rematerialise our belonging to the world’ (Latour 2017: 217). Making new meaning for care through Earthbound actions with goats, the ethnographic fieldwork resulted in the Agential Guts exhibition at SOLU gallery and this exposition that became a Gaia story. All agents, from goats to soils and microbes leaking between, were assembled as caretakers of biodiverse situations in playful ways. Broadening the methods and theoretical underpinnings of thinking about the societal meaning of microbial agents and assemblages, Agential Guts contributed to both art-based research and the social study of microbes.

Informed by a natural scientific understanding of microorganisms, we co-enacted microbial materiality in an embodied and affective way. Speculating alongside the facts, the sympoietic account acknowledged that microbially designated assemblages conduct care work beyond human comprehension, balancing the ecosystem. Trying to push the limits of what multi-species care might mean, *Agential Guts* enabled rethinking of the agencies of the material bodies of the assemblage in their sympoietic, messy, and leaky character: intelligence of matter in sympathetic, mutually symbiotic becomings, which can be seen as creative (Massumi 2014). I argue that tuning into situated, affective, and material settings enhances skills in knowing what other-than-humans would care about and desire. When the arts of noticing are informed about microbial agents all around us, it can fuel becomings that demonstrate the radically relational and codependent nature of all beings.

Arts of noticing in the multi-species, sympoietic-ethnography ratify that creatures want to become together, form relations, express curiosity, be exposed to each other's microbiomes, and not be restricted in creating symbiosis. That involvement and the allowance formulated my position in the project and led to more-than-human creativity and biodiversity, where collaboration was contamination of holobiontic co-enactment. The agency of a goat is not reduced by locating the focus in the guts of goats and humans and soils, where microbes enact our relationality. What is dismantled is the individual subject position that is reserved for humans, in search of enactments that better suit collaboration-contamination and animal politics. I hope that this emphasis on radical relationality promotes an ethical stand of responsibility within more-than-human coexistence.

The plantationocene is a logic very similar to that of Western epistemologies that dictate how biological identities and lonely Western subjects should be perceived: each individually deprived of their companion species; exploitable. Messy epistemologies are challenging to assert. However, staying with the messiness is a necessity when adopting relational and processual ontologies; it proposes that symbiosis is not something rare but happens everywhere (Haraway 2016). Industrial and productionist ways of dealing with the environment do destroy biodiversity in agriculture and elsewhere. The relational and messy ontologies and epistemologies are better suited for the needs of biodiversity. The contribution of *Agential Guts* is to provide evidence of material and affective situations that were not based on the logic of management but on the logic of involvement.

Care often has a lot to do with disciplining the cared-for ones, but admittedly when letting the dirty and messy take its space, care becomes a matter of emergence and allowance of the symbiosis: being creative in streaming toward perhaps balanced ecosystems without humans being the central agents of solutions. In that context, I conclude that multi-species care should at times be the opposite of control itself, and attuned to the creativity and playfulness inherent in all matter. I have witnessed how the arts of noticing can generate artistic collaboration attuned to rewilding, making less effort in controlling and reserving maximum space for microbes to return, therefore rendering macrofauna and plants resilient, and allowing insects to inhabit the ecosystem in a balanced way. In this context of contamination for biodiversity, definitions of self-care become reciprocal multi-species care. On my Earthbound human behalf, gently supporting the biodiverse situation, I hope this exposition could open ways for

further responsible co-enactments within multi-species care, rewilding, and assembling for biodiversity. I hope to provide speculative and art-based means to relate responsibly to the layers of Gaia suffering from our human actions.

[◀ 4 Generating Multi-species Modes of Care](#)

[6 References ▶](#)

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Page description: The reference list of literature on the left is partly placed on top of the image on the right. Two microbe buttons allow navigation between pages.

Agential Guts exhibition overview 2022. A long, pink satin 'gut pillow' lies on the floor below a textile print, on the wall. The print is of the same image that was displayed on page 3, where a goat and a human are seen licking a salt stone hanging on the barn wall. Image by Liina Aalto-Setälä. On the left of the print, a few salt stones, which have been licked by goats, are hung on the wall.

Agential Guts — Care and Creativity within the Messy Multi-species Assemblage

Riina Maaria Hentriika Hannula

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◀ 5 Conclusions