

The Annoying Subjects: Kefir and Borage

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People destroy the Earth; some people do so more than others. This is a simplified and compressed summary of the discussions around the notion of the Anthropocene. The first addresses the irrevocable changes introduced to the geology of the planet by humankind, which are linked to the global warming, toxic pollution and the sixth extinction. The second argues that there is no such thing as the “humankind”, and the burden of responsibility - both in terms of causing the changes (while accumulating wealth) and in terms of the project of survival falls on different countries, nations, ethnicities, genders, and classes differently.

“Studies” scholars¹ have argued that the idea of the (human) subject, foundational to the one of the “humankind” and introduced with the Age of Reason, is inseparable from domination and violence. The autonomy, responsibility and capacity to act that the human subject acquires when the essence of “being human” is redefined away from God and the immortal soul and to the thinking processes happening inside one’s head - are granted, first and foremost, to white men from the Global North. Feminists, critical race studies, disability studies’ scholars and Marxists before them have argued that it is by othering the woman, the First Nation, the Black, the disabled, the poor that the idea of the free human subject can be set up. The extension of the subjecthood to others then becomes the focus of the struggle. One way to fight is to gain the status of the subject, be recognised by law. It is the project of identity - and the legal recognition of experience, such as homosexuality or Blackness, as protected in law and developed in thought. The other way is to do away with the notion of the subject completely, to argue instead that humans are part of forces that traverse them and the subjectification, the making into a subject, is always a limiting fixture, imposed for discipline, exploitation, and control, and cannot be salvaged as such.

The reason why I am going through this history of thought is to prepare the ground for the argument of this paper. The way we treat “nature” is directly related to our notions of the subject, of what the human is and how one ought to be human. It has been argued many times that the idea of nature as a reservoir, a passive unlimited and undifferentiated mass that can absorb any and all human waste, while feeding the humans and sustaining their environment ad infinitum is conceptually coupled to the notion of the human subject as the opposite of it: a unique, active, and concentrated locus of energy, invention and intervention. Even in this description one can see how this “nature” is aligned with the (female) mother or the care and resources provided by slaves and servants versus the (male) egocentric child and the white master. Therefore, the attempts to survive the climate catastrophe must take place along the lines of 1.destabilisation and complexification of the idea of the subject and/or

¹ Rosi Braidotti proposes the genealogy in which it is the studies - postcolonial, critical race, gender and cultural studies, as well as media, film, software, animal and disability studies - that developed radical epistemologies, providing new methods and concepts over the least 30 years and that are able to challenge and renew the project of the humanities. Rosi Braidotti, “The Contested Posthumanities” in *Conflicting Humanities*, eds. Rosi Braidotti and Paul Gilroy, London: Bloomsbury, 2016.

2.further extension of the status of the subject to other humans, non-human animals, plants and the environment. I will further explore them below.

In relation to number one, some of the most recent efforts in the destabilisation of the subject come from the critical humanities' work with biology, and specifically, bacteria. *Arts of Living on the Damaged Planet* feature a range of articles from biologists, which undermine the notion of human and animal individuality.² They write that only “half the cells in our bodies contain ‘human genome’. The other cells include about 160 different bacterial genomes”. Bacteria induce normal brain development, something popularised recently through the gut-brain axis hypothesis, which suggests that “cognitive and emotional situations” are “products of bacterial metabolism”, with research demonstrating direct relationship between levels of anxiety in mice and bacterial presence/absence in their gut. Also, “95 percent of the serotonin in mammal blood appears to be made ... by induction from the bacteria that dwell within us”. Furthermore, mother’s milk contains sugars to feed the bacteria in the gut of her baby, which “will help finish the construction of its gut capillaries and lymphoid tissues” and therefore will see through “developmental changes in her infant even after its birth”.³ Symbiosis disrupts the idea of animal individuality at many levels, from evolutionary and genetic to developmental and is productively explored by scholars who focus on the complex interrelations of the living things and a web of connections.

Artwork focusing on bacteria as well as working broadly with live tissues and organisms started coming into prominence in the 1990s, alongside the invention of the World Wide Web, digital art and activism and the beginning of what would later be termed the Fourth Industrial Revolution and which combines hardware, software and biology. It is worth paying attention to the popularity of bioart laboratories in their citizen science approaches, something aligned with the wide interest in fermentation that cuts across foodies’ blogs, home cuisine, and art-activist networks and events.⁴ Simon Pope project *Here’s to Thee*, exploring the microbial ecology of cider-making, brings together yeasts living on apple skins, people rescuing abandoned apple trees, traditional practices of cider making and the politics of communal action (2019-2020).⁵ Perhaps the future is to invent new rituals to discover, reinstitute and affirm these multiplicities.

Anyone who tried hosting kefir grains at home would know how annoying the subjects of kefir can be. Notwithstanding their ecological embeddedness in the web of life, they are distinct in how they constantly outgrow their containers, demanding bigger spaces, more milk and more care. One cannot leave them unattended. They are living beings and cannot be disposed of without guilt. Such is the reality of cross-species living.

2.I will not dare attempting to summarise animal studies or animal rights movements, but I think it is possible to say that there is a certain basis here in considering the pain of others - human and other animal - on equal footing. An animal that is a subject must not be treated inhumanely. Here, subjecthood is

² *Arts of Living on a Damaged Planet*, eds. Anna Tsing, Heather Swanson, Elaine Gain, Nils Bubandt, Minneapolis: University of Minnesota Press, 2017.

³ *Ibid.*, p.M75, 79.

⁴ Sander Ellix Katz, *Wild Fermentation. The Flavor, Nutrition, and Craft of Live-Culture Foods*, Vermont: Chelsea Green Publishing, 2016.

⁵ <https://sites.google.com/site/ambulantscience/Index/here-s-to-thee-a-wassail-song-for-the-ecology-of-cider-making>

extended by means of studying other animals' nervous, communication, social and other systems, where appreciation of their uniqueness, complexity, and capacity to feel pain, love and to grieve is one of the ways in which people can be nudged towards considering abandoning their eating and clothing habits that rely on cruelty. It is a very positive development that in many European countries at least it would be risqué to wear a fur coat, and there is a great increase in vegetarianism and veganism amongst the young people. Great ape personhood movement has won substantial visibility and there have been legal cases where great apes were legally granted non-human subject and personhood rights. But the subjects/legal persons of law include, for instance, companies. If a company can be protected without being a human, then surely other entities can be granted the status of the subject? One example could be rivers and valleys: for instance, Uttarakhand High Court granted the river Ganges and Yamuna the status of the "legal persons" and appointed trustees to protect them against pollution.

With plants, it is a little more complicated. Apes and animals have sentience, rivers and valleys are big and notable in how they sustain a web of life - they also tend to stick around. How can plants, and especially annual deciduous plants growing around people that mostly cannot distinguish them from one another, be considered subjects?

Plant diversity is core to human survival. Genetically diverse plants are less susceptible to diseases and viruses; they can offer more nutritional value (for instance, rare minerals) and play a role in modulating immune response and allergies (streamlining wheat to just a few varieties and shifting the diet to wheat grain at the expense of other historical grains, such as millet, spelt, amaranth, and khorasan wheat, are among the reasons for the rise in gluten intolerance). Plant diversity is at odds with intensive farming techniques, which deplete soil and poison insects, including bees. While up to a third of fertile soil on Earth, capable of producing food, is acutely degraded, the use of pesticides and insecticides that contain neonicotinoids destroy bee colonies. Neonicotinoids are banned in EU, but even at my allotment, Roundup (weed killer) is widely used. Roundup contains glyphosate that depletes bacteria in bees' gut, making them susceptible to diseases. Apparently up to 60% of wholemeal bread in the UK contains glyphosate.

Plants are intertwined with insects, soil and the web of fungi and bacteria that make the soil fertile and the insects healthy. Japanese farmer and the author of "doing nothing" farming approach Masanobu Fukuoka makes a list of specialists that would be required to understand the phenomenon of thousands of spider webs appearing on rice stubble and grasses, as if covering them with silk, in autumn mornings: agricultural technicians, scientists of all sorts, entomologists, philosophers, men of religion, artists and poets.⁶ This formidable parliament of voices emphasises the complexity of interrelations and a certain impossibility of separating things out.

Here, one can clearly see that while there is effort to be put into constructing an understanding of animals and humans as deeply implicated in inseparable webs of life, destabilising the idea of human subjecthood and animal individuality as explained above, the plants are readily there, always implicated in systems, always a multiplicity. Thinking about plants requires effort to go the other way around - extricating them from the web of life to see them as persons, as subjects. Natalie Jeremijenko's *Tree X Office* environmental civic action project (2015) was a collaboration with a tree to

⁶ Masanobu Fukuoka, *The One-Straw Revolution*, Mapusa, Goa: Other India Press, 1992, pp.25-33.

construct a human working space in a park in East London.⁷ Jeremijenko explored the ways in which a tree could “earn” income by provision of its services to humans and have ways of spending it that would benefit it. Here the tree is a subject, managing its own communication channels as facilitated by the artist, and having legal interests and capacities, including monetary ones. This is, in the words of the artist, a “corporate personhood”. Current advances in biology also offer terms such as plant intelligence or cognition and plant sensing and communication to describe new discoveries in observed interactions amongst plants, between plants and other species, and plant responses to the environment. This work also expands, although very differently, the notion of subjecthood away from self-consciousness and those with a nervous system, a certain animal speciesism, and towards information extraction, problem-solving, memory, communication and signalling, both within the plant and between plants. Barbara McClintock, Anthony Trewavas, František Baluška, Francis Hallé, among other biologists, use the term “plant intelligence” to talk about plant behaviour: for instance, in relation to the abstractive relation to the roots through which the plant gains information about itself and the environment. Plants can “understand” their circumstances, perceiving and responding to cues and adapt to future challenges. Plants exhibit “memory”, changing their behaviours on the basis of their previous experiences or those of their parents. Plants communicate with other plants, with mutualists (another co-evolved species) and with herbivores. Plant neurobiology sees plants as entities capable of complex information processing where communication takes place between processes within every plant, who responds to insights by coordinated change in behaviour. Plants exhibit many behaviours similar to those of the animals, despite having no nervous system.

The conceptual tendency to destabilise subjecthood (number 1 in my argument) can be and is radically supplemented by extending the status of subjecthood (number 2). In fact, there is not really a contradiction between destabilising the notion of the subject to emphasise relationality and granting subjecthood to relational systems and their components. As the idea of the subject is undermined by demonstrating its porousness, symbiotic existence and radical dependency on the environment, the notion of subjecthood is extended to species populations and environmental systems as wholes. When the environment is not considered merely a mediation between humans, and ecocide stops being formulated exclusively through harm to other humans, enacted through the environment, natural species populations can be defended as subjects. They do not have to be human-like subjects, but systems of subjects with own needs or systemic subjects. This is the current view of the legal development of the rights of nature, which saw such cases as recognition of legal personhood of Te Urewera forest in New Zealand, among other victories.

However, the question still remains, whether it's enough to recognise species, and especially plant species' subjecthood rights, modelled on the human rights, where the uniqueness of whole non-human species or cross-species environments is modelled on the uniqueness of each individual human. Why such discrimination between animals and non-animals? Individual animals can and have been recognised as “legal persons”. By treating non-animals as a bundle, do we not push the problem of exploitation further down the chain of being? Coccia writes that one cannot separate

⁷ See, for instance, <http://www.digiart21.org/art/treexoffice>

the plant, “physically or metaphysically”, from the world surrounding them.⁸ Such statements are puzzling. I can dig out the plant and put in the post. And I am writing about the plants right now, separating them out metaphysically. Shouldn't we be considering the world as composed of subjects through and through, in a Whiteheadian way? Unnecessarily chopping down one single cherry tree or pulling out one hollyhock doesn't endanger their species but can still be quite devastating; callousness and neglect should not be excused.

Plants require more thinking. Are plants always a population, a species, a collective? Isn't there a danger lurking there - of treating them like a “mass”, a medium for human incontinence, disregarding what's in front of you because there are always more? What can make a plant a subject and should it be subjectified?

The ontological status of plants is a shifting one. Plants are a kind of things, but as they consume carbon dioxide and produce oxygen, they are also the condition for all kinds of things. They are beings and the environment, life and the condition of life. They are implicated in cycles of life with intensity unmatched by animals and they form relationships with fungi and bacteria in the soil, with which they share their ontological quarrels, and with which they form an extended organism. Work on how bacteria and fungi swap nutrients between soil and the trees' roots, such as famous “Wood Wide Web” line of work⁹ and cultural theorists' work on soil, such as that by Maria Puig de la Bellacasa¹⁰, explore and confirm what indigenous and traditional practices of working with soil knew and supported: live soil and the enormity and unknowability of mutual implicatedness.

Plants are both independent species, thriving wherever they can, and cooperative instruments of violence. Artist Maria Thereza Alvez has a long history of working with the plants, including the project *To See the Forest Standing* (2017), which documents the practices of forest agents in Brazil against, among other, the devastating effects of eucalyptus trees planting, which make the soil acidic and leads to the die-off of the rainforest. Her project *Seeds of Change* (1999-ongoing) is an investigation of the “ballast flora” of port cities, whose focus is imperialism, colonialism, and the question of what constitutes “the native” today.¹¹ The colonial use of plants and the history of sugar cane and cotton species as foundational to slavery cannot be forgotten. I only grasped the scale and violence of the world's colonial project when watching a BBC documentary about the world gardens. The crew was filming in New Zealand, driving past pastures and road edge vegetation that looked distinctly European. They then arrived at a nature reserve, a reconstruction of the original flora, unique and distinct from the habitual European plants. The *entirety* of New Zealand flora is the result of colonisation. Not only human populations were wiped out during colonisation, but the entire green environment, the immense backdrop was irretrievably destroyed. Imagine travelling the world to see the same

⁸ Emanuele Coccia, *The Life of Plants. A Metaphysics of Mixture*, London: Polity Press, 2019, p.5.

⁹ Manuela Giovannetti, Luciano Avio, Paola Fortuna, Elisa Pellegrino, Cristiana Sbrana, Patrizia Strani, "At the Root of the Wood Wide Web". *Plant Signaling & Behavior*. 1: 1–5 (2006).

¹⁰ Maria Puig de la Bellacasa, *Matters of Care, Speculative Ethics in More Than Human Worlds*, Minneapolis: University of Minnesota Press, 2017.

¹¹ <http://www.mariatherezaalves.org/works/seeds-of-change?c=47>

everywhere. English roses in California and English cottage gardens in South Africa implicate plants in such-like socio-political past and present. Here plants both disobey and obey the humans too well.

Plants are paradoxical. This spring, I have planted the seeds of borage, *Borago officinalis*, a plant with beautiful blue flowers and prickly leaves of cucumber flavour. It grew to a good size and I've frozen some of its flowers in the ice cubes a few days ago. Borage was widely used since antiquity and spread throughout Europe by the Romans. It has many medicinal uses and is part of culinary traditions of Italy (where in Liguria it is known as *borragine* and used as a filling in ravioli), Spain and Germany (where, in Frankfurt, it forms part of green sauce). It produces large amounts of nectar, attracting bees, and is a staple of permaculture gardens. As I attempted chewing on its prickly leaves, I read that borage contained Pyrrolizidine alkaloids, which are liver-toxic and can potentially cause liver cancer. A classical pharmakon, poison and cure, this cunning plant is ambivalent, engaging in the art of war of its own design.

This investigation leaves more questions open than answered. In shifting the attention to symbiosis, interrelations, and ecologies, is there a political danger, a loss of the opportunity to use the current legal systems and their formulations to defend the various inhabitants of the Earth, as urgently as needed? Are subjecthood and personhood parts of an unfortunate legacy and are thus to be abandoned, or are they to be reclaimed in a way attuned to porous boundaries, interdependencies and mutual respect? Is it possible to conceptualise a subjecthood or personhood in relation to the plant? And is it important to do so? Is there a difference between the world full of subjects and the world of interconnected ecologies? My interactions with the subjects of kefir and borage predispose me to a certain line of thinking, but I wouldn't require that others follow me. In fact, I've got to attend to my sour cream-making bacteria; they seem to have their own ideas on how to proceed in their milk-based life.