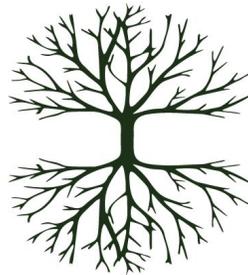


Master's Thesis  
Cultural Anthropology: Sustainable Citizenship

# The Sprouting Food Forest

Changing the narrative of what it means to do  
research, engage with the forest and its  
creatures, and be human.



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# FOREWORD

My research was an exploration into the pluriverse, how it can be realized through human connections to nature. It became an overarching understanding of how co-existence and symbiosis between seemingly opposing ideologies, such as science and spirituality, can facilitate the necessary transformations within our worldviews, lifestyles, education, and attitudes towards nature, as well as an acceptance that our own ways of world-making are not universal. My own recognition that learning about ecological systems, plants, and animals can require the activation of our rational, subjective, creative, and spiritual modalities has been instrumental in devising my research topic and guiding my fieldwork process. Learning about the natural world through the perspective of biology and environmental sciences has provided me with an important framework through which I perceived nature. It stipulated that living organisms could be studied as objects, material manifestations of life that could be observed, quantified, and reproduced using the same universal laws of physics and chemistry. Immeasurable through these methods of learning was the human-nature relationship, the consideration of how human positionality and modes of thinking and being in the world, our ontology, can influence the knowledge that is produced about it. Although still interested in the scientific method and the objective factual knowledge that can be instrumental in propagating healthy ecologies and nature conservation, I felt that something powerful could emerge if we allow science to merge with the unquantifiable qualities of human existence – the emotions, energetics, and spiritual dimensions to our living world. In such a way, non-human life gains an identity, a lens through which it could be understood, taken care for, and learned from. After completing my biology bachelors' program, I ended up enrolling in a cultural anthropology masters, where there was more room to explore and study the complexity of what it means to have relationship between humans and nature. Suddenly, the elements of human positionality could circle their way into the topics of research about the natural world. It gave room to understand that our own anthropocentrism cannot be overlooked in how we produce knowledge over non-human life. Additionally, it provided the space to explore new relationships between our inner worlds and those of other life forms, with the overarching understanding that we are part of an ecological system, composed of humans, living and non-living matter, as well as different modalities of consciousness.



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## Introduction

Imagine talking to a plant. It might seem absurd, unprofessional, laughable, and completely misaligned to the modern worldviews of what nature is. The awareness between the plant and the human is seemingly one-sided (Hartigan 2019; Myers 2008). Does the plant see us in the same way we see them? Is it aware of our presence? By asking these questions, one embarks on the journey of ‘decolonizing their imagination’ (Myers 2018), through which modernity’s separation between humans and nature can be challenged by accepting that we, as humans, do not possess any ultimate truth of the world. We are actors in the creation of multiple truths, multiples ways of being, multiple conceptions of the universe – we are a part of the pluriverse (Escobar 2018; Kothari et al. 2019; Querejazu 2016).

In this thesis, understandings of the pluriverse will be construed through explorations of food forests in the Netherlands. Arturo Escobar’s (2018) ‘pluriverse’ introduces the existence of many worlds, made possible through interconnections between the human, natural and spiritual dimensions that invite new ontologies of being into conversation (Escobar 2018). These ontologies draw upon indigenous relational worldviews that link natural, social, and spiritual worlds (Querejazu 2016). Thus, designs for the pluriverse function through the decolonization of thoughts and perceptions of the world, an invitation of indigenous and other marginalized voices, their ontologies, and their worldviews into our own (De la Cadena 2010).

This dimension of world-making is a deviation from the formations made conventional within the processes of Western modernity, which are rooted in rationality of thought and built upon centuries of imperialism, colonization, and the diffusion of uncontested values that place technology, productivity, and science above all (Escobar 2018; De La Cadena 2010). Endeavors into ontological pluralism are explorations of interventions that place limits upon industrial production in favor of convivial innovation, or the creation of an ontological-political field that disassembles the current dualisms classifying Western modernity (Büscher & Fletcher 2019; Stone 1988). Within this research, food forests will be examined as such interventions within Netherlands.

Food forests revealed themselves as spaces wherein alternative ontologies can be explored. They are spaces where humans make direct contact with the land through rewilding landscapes to promote habitable ecosystems for humans and other species (De Groot & Veen 2017). Besides being a promising alternative to industrial agriculture, food forests act as spaces through which different modalities of being emerge through people’s physical, spiritual, and social relations to land. These modalities of being are translated to the understandings of the pluriverse, a step towards transgressing modernity’s dualisms, divisions, and predispositions on nature and culture. While operating within the Dutch neoliberal order, food forests invite new ontologies of being, towards a “politics for an other civilization that respects, and builds on, the interconnectedness of all life, based on a spirituality of the Earth, and that nourishes community because it acknowledges that love and emotion are important elements of knowledge and of all of life” (Escobar 2018, 12). Building upon these concepts, the main research question of this thesis is as follows:

How are the processes of Western modernity challenged and negotiated through the transgression of dualist ontologies within food forests in the Netherlands?

In sum, the processes of modernity will be used as a framework to examine how food forests come to contest them and be used as spaces through which human-nature relations can be restructured towards a more pluriversal ontology. The importance of this research lies in imagining new realities where humans can find re-integration with the Earth by inviting new ontologies of being into practice. These practices can formulate new understandings of ‘sustainability’ that reconfigure the relation between humans and nature, one that is not rooted upon domination and exploitation of our planet.

## Ethics & Positionality

There are several considerations that are important to address and engage with throughout this research. While working with concepts such as the pluriverse, new ontologies, and structural orders such as neoliberalism, the themes of decoloniality emerge as a framework to reimagining human-nature relations. Decoloniality serves as a movement towards enabling this multiplicity, relying on multiple ways of knowing, understanding, and being in the world. However, as stated by Tuck and Yang (2012), decoloniality is not a metaphor. It is of importance to be vigilant about the use of this term, recognizing that “decolonization is not a swappable term for other things we want to do to improve our societies.” (Tuck & Yang 2012, 3). For these reasons, I will not be using the term ‘decolonization’ to describe the processes I have witnessed through my research of de-objectifying nature within food forests. I cannot suffice the claim that food forests contribute to the decolonizing the relationship between humans and nature, yet within this research, food forests will be examined as spaces that operate under different ontologies that challenge nature/culture dualisms and exploitative practices that have strong neocolonial ties.

Additionally, whilst writing about non-dualistic modes of being that transgress the notions of Western modernity, I am aware how my own positionality can reinforce these processes by my own conceptions and predispositions. For example, when classifying Western modernity as a leading frame for my research, I am aware that such generalizations can impose further hegemonic truths of a world that is far more complex and nuanced. There is no monolithic understanding of modernity, and the West’s attribution to this era is classified by socio-economic orders that are perceivable, but by no means universal. Therefore, I will be referring to the ‘processes of modernity’, rather than using the term modernity as a stand-alone conception of reality.

Lastly, I would like to reflect upon my own abilities to apply concepts such as the pluriverse, decoloniality and transgressions of modernity to the food forest scene in the Netherlands. Exploring philosophical and ontological conceptions through fieldwork is difficult, and my own analysis and positionality greatly influenced the outcomes of the research. It is important to be mindful that the explorations of this research are embedded within my own analyses, experiences, and perceptions, and that these can very well differ from the ones of the people I have worked with during my research.

## Research Methodology

Within this research, seven food forests comprised the main location for explorations into the pluriverse. All these research locations were located in the Netherlands. The food forests studied included the *Droevendaal* and *Voedselrijk* food forests in Wageningen, *EcoVredeGaard* in Arnhem, *Eemvallei* food forest in Almere, *Voedselbos Lekkerlandgoed* in Utrecht, *De Lange Ransuil* in Langeveen and *De Pleez* in Nijmegen. The diversity of food forest types created space for a holistic analysis of the food forest movement in the Netherlands and the various similarities and difference that exist within the different food forestry projects. It similarly allowed for the multiplicity of stakeholder viewpoints on how food forests foster multitude of relations between humans and nature.

My own involvement and participation in these food forest projects allowed for an auto-ethnographic approach that placed me within these systems in similar ways as my research participants – through embodied, sensorial experiences that were instrumental in experiencing the emotions, feelings, and relationships among human and non-human subjects (Denshire 2017).

The fieldwork process took place in the Netherlands between February and May 2022. During this time, I reached out to several food forests and engaged with several gatekeepers who have invited me to take part in various activities within the food forest that further developed my relationship to the spaces and the people involved within them. These activities included planting and working days, during which I learned how to plant trees, lay hedges, inoculate fungi, weave baskets, care for horses, identify bird calls, use manure to fertilize the soil, harvest edible plants, and more. Participating in these activities helped me gain rapport with food forest communities across the nation, which allowed me to carry out my research using several qualitative research methodologies.

The themes of this research were explored using several different anthropological methods – participant observation, semi-structured interviews, and a focus group workshop. Participant observation was used to study the daily activities of participants that are involved in food forest project developments and activities. Participation involved volunteering, engaging, and communicating with participants and joining daily tasks and activities in the food forest, as well as social events. This method was integral to understanding and framing my research question based upon what I observed. This method was used to study the daily realities, events, interactions, and engagements of research participants (Musante & De Walt 2010). It was used to understand the nature of phenomena using qualitative research methods such as informal interviewing, observation, and an active engagement of the researcher, which is followed by noting and recording the collected data into ‘fieldnotes’ to be used for subsequent data analysis and interpretation (Musante & De Walt 2010).

Participant observation was similarly used to formulate question sets for the subsequent semi-structured interviews conducted with research participants. I carried out semi-structured interviews with 18 individuals, either one-on-one or in a group setting (if it was a family or a couple). The interviews served to examine how human participants perceive, make sense, and value their involvement within food forests (Hammersley & Atkinson 2007). They were asked questions that center around their personal relations to the ecological landscapes, what their inner politics told them about the human role within them, what types of emotions/thoughts/behaviors they experienced when being in this environment, etc. The questions focused on the *micropolitics* of participants to better

understand what psycho-cultural shifts food forests are driven by or facilitate (Bennett 2010). The questions in the interview were asked to determine what values of food forest systems human participants found important, and how they perceived food forests representative of a pluriverse – a world where science, spirituality, interconnectivity, and multiple realities can co-exist.

By interviewing participants who took on different roles within food forests, I explored how a diverse range of worldviews could promote the involvement of people in these initiatives, and how these intersubjectivities could exist in collaboration. Similarly, the interviews could be used to further understand the areas of conflict through which different worldviews challenged one another, stood in opposition, and questioned the negotiations of a pluriverse (Hammersley & Atkinson 2007).

Lastly, my research culminated in the implementation of an organized focus group with my research participants. A group focus group serves as an ethnographic method that generates qualitative data on collective and individual perceptions, and the meanings behind them on a range of topics (Mishra 2016). The topics that arose through my involvement in the food forest projects and during interviews left me with the desire to provide my participants with a space where they could express their experiences through a creative workshop. The themes of emotionality, spirituality, embodiment, subjectivity and relationality were persistent throughout the research and oftentimes participants felt difficulty in expressing themselves through words. For this reason, the focus group provided research participants with an outlet through which these themes could emerge using different modalities of thought and expression (Mishra 2016), a quality that aligns with the notions of a pluriverse.

The focus group took place at the Thuishaven food forest in Zeewolde, with the participation of 11 people, during which several exercises took place to connect participants with the food forest. Following these exercises, participants were offered time to express their placement within the food forest movement, and how this movement translates into the bigger societal picture. This was done through guided meditations, questions, and the use of art to create 3D installations of these relationships. An exhibition of these installations took place during which each participant could elaborate on their creations. The outcomes of this method were a significant addition to the research and served as a complementary method that aided me in implementing different forms of expression to answer the research question.

The triangulation between the data collected from interviews and the focus group revealed many underlying themes of human experience that expanded beyond the findings that were observable in the ‘field’. Thus, the combination of these methods was integral to solidifying the outcomes of this research exploration.

## Structure

The structure of this thesis is composed of two parts. Part I will consist of two contextual sections that will set the framework on what food forests are, and how they can be understood as agricultural systems that present an alternative to industrial agriculture. The first section will examine food forests as local interventions within the Dutch neoliberal order and how they are being shaped by these parameters. In the second section of, I will examine how food forests can facilitate a

civilizational transition away from Western capitalist modernity towards the pluriverse, according to the framework of Arturo Escobar (2021).

In Part II of this thesis, I will further explore the understandings of the pluriverse through three sections. The first section will contextualize the understanding and origin of modernity, and how the food forest movement challenges these understandings. In the second section, the qualities of science and rationality as attributes of Western modernity will be discussed and contemplated through the lens of the pluriverse, where other modes of understanding the natural world are invited into practice. In the last section of Part II, will discuss how institutions and education in the Netherlands can construct the duality and hyper-separation between humans and nature, and how food forests can facilitate new approaches towards education through the development of ecoliteracy programs.



Food forest mood board, photographs taken by Nikita Bharat



Focus group meeting at Voedselbos Thuishaven, 24.04.2022

# PART I

## FOOD FORESTS – A SPROUT WITHIN MODERNITY

This is my perception of what is going on in the food forest world. You can see some low-lying grasses here, some shrubs and some bigger trees. It's all coming up. And I've put my seed of hope here at the end where the food forest reaches climax. What you see around, is a long difficult path of all this energy, all this stuff going on, all these things happening. All this chaos. Surrounding this small, tiny food forest. And this is a pattern we see all over the world now. And I feel that the next step is recognizing that around this chaos we need to make peace with the earth, and we need to make peace with ourselves. Therefore, I have – sadness, happiness, fear, and anger and finally, nature. These are the five domains in which we need to make peace and recognize that it is part of who we are. And only then when all of this is taken away, we can end up in the center and in the food forest.

[Focus group, Julian, 24.04.2022]



Figure 1. *Julian's 3D installation*. Photo by Nikita Bharat, 24.04.2022

In Part I of this thesis, the contextual frame to understanding the food forest will be set. The opening vignette is a transcript from Julian, a young food forest project coordinator I met at the Droevendaal food forest. Julian is a facilitator in the Ecoliteracy program at the food forest. His enchanting and warm personality made him a wonderful teacher to both children and adults. Besides this, he possessed vast amounts of knowledge of forest ecologies, specializing in urban planning and greening cities. Spending time with him in the food forest was extremely enjoyable. He shared so many stories, of the forest critters, of his experiences working with kids, of how he got involved in the food forest movement. Julian has also attended my research focus group. He used his 3D visualization to describe his own feelings, experiences, and views on the food forest movement in the Netherlands, of which he is a pioneer. The excerpt reveals the complexity of the food forest movement and how challenging it can be to embark on the journey of creating a such a space in the Netherlands.

Throughout my research, I got to know many others with various paths within Dutch food forestry. The people I have worked with have discovered many challenges and obstacles when promoting an alternative agricultural system that doesn't always fall under the workings of a neoliberal economy.

In this Part, the food forest will be understood through two chapters. The first chapter will establish how the food forest exists within historical and current conjunctures of global agriculture and neoliberalism, and how these relations constituted my research framework. The second chapter will segue into how food forests can facilitate transitions into a pluriversal civilization, which will be further explored in Part II of this thesis.

# Chapter 1

## Understanding Food Forests

### 1.1 Food and Food Forests

For centuries, food production has been one of the most visible manifestations of human relationships towards their environment (Stock et al. 2015). When looking at the time-period between 1900 and 2000, transformations in food production have been a major force that altered our planet's landscapes and climate (McKittrick 2015).

The human population has grown from 1.7 billion to 6 billion, creating a sharp increase in demand for agricultural land-use (McKittrick 2015). Agricultural reform became a product of rapid industrialization and urbanization through the discovery of fossil fuels as a source of energy, replacing the age-old practices of farming that relied on human labour, non-automated machinery, and small-scale, localized farming (Altieri 1998; McKittrick 2015). Cheap fossil fuels have paved the way for the mechanization of planting, cultivating, and harvesting crops and the associated technology has propagated the mass-production of crops for humans and livestock (Altieri 1998). Subsequently, the human-induced control over land and water-use for agricultural production has had great impacts on our ecologies and climate (Stock et al. 2015).

In the Netherlands, which has one of the highest percentages of agricultural land in Europe, the intensification of agriculture had vast impacts upon nature and landscapes (Hams 1987). For instance, achieving this growth spurt in food production has relied on greatly simplifying ecological processes into monocultures of grains and crops, which yielded a high reliance on synthetically produced fertilizers and pesticides to ensure efficient and high-yielding outputs (Altieri 1998; McKittrick 2015; Stock et al. 2015). The vast diminishment of biodiversity is highly associated with the onset of monocultures of plant species that generate desired outputs for human consumption, eliminating other species of plants and animals that could have inhabited the land (Altieri 1998).

Through these developments in food production, the relationship between humans and land has been greatly transformed through a large separation between ourselves and the food we consume (Du Bois & Mintz 2002). Farmers declined in numbers through the rapid automation of farming practices and the general reduction of rural areas where farming proved to be a viable sustenance strategy (McKittrick 2015). Instead, our food systems started resembling other industries that implemented simplification, bureaucratization, and efficiency to yield maximum product for the cheapest price (Altieri 1998). In addition, globalization altered the patterns and scales of food production, replacing localized food systems with large-scale, industrial farms that export foods across the planet (Busch 2010; Traill 1997). This ability to fully regulate the transportation, availability, and production of food allowed humans to further propagate the ideal that “nature is entirely under the control of human desire” (Naylor 2000), a notion that will be fundamentally contested through the ideals of food forestry.

Food forestry in the Netherlands is a relatively new phenomenon, but for centuries, it has been a time-tested practice in many countries across the globe (Tewari & Dagar 2017; Nair 1993). Food production is not the sole goal of food forestry, thereby standing in opposition of modern industrial agriculture (Albrecht & Wiek 2020). Instead, it promotes the cultivation of human-made forest-like ecosystems that follow natural ecological processes, are free from heavy machinery, and are home to a diverse range of plant and animal species (Albrecht & Wiek 2020).

Otherwise known as *voedselbossen* in the Netherlands, food forests function by imitating natural ecosystems that operate under circular, regenerative processes without the use of outsourced inputs such as fertilizers or other chemical additives, relying on natural biodiversity to build resilience within the ecosystem (De Groot & Veen 2017). Relying on the principles of agroforestry, food forests have prompted a movement towards new directions in agriculture that serve to counteract the ecological devastation associated with modern industrial agriculture (Albrecht & Wiek 2020; Horrigan et al. 2002)). As such, they oppose the environmental damage caused by industrial farming through manifold ways. For instance, there have been numerous studies and publications on the environmental benefits of food forestry, including carbon sequestration, biodiversity conservation, soil enrichment, and improved air and water quality (Albrecht & Wiek 2020; Jose 2009). The careful design of a food forest is foregrounded in promoting high levels of biodiversity (De Groot & Veen 2017). Combining the growth of trees, shrubs, and agricultural species into an ecosystem that sources food for human consumption, as well as other animals is a key feature of agroforestry (Nair 1993).

In this manner, humans hold a space within the ecosystem the same way other species do, contributing to creating a habitat and sustenance for all life that depends on it rather than acting as the dominant extractor.

For instance, during my fieldwork I met Maura, a Dutch middle-aged woman who has bought a piece of land in an existing forest to turn into a food forest. I met her through connections with a different food forest in the city, and she quickly invited me to join her weekly working days with other volunteers. I found her a fascinating individual. She travelled to many parts of the world, including Russia, to learn about and practice agroforestry. She was very direct, saying she did not want people in the food forest who did not share her values of the space. I felt very honored to be accepted by her and allowed to take part in the creation of the magical landscape. She told me more about her intentions for the place. She was used to giving a tour of the land to new volunteers to give them an idea of what her vision for the place is and invite them to contribute. She told me it took her a while to start inviting newcomers into the space, that she felt she needed time to feel the space out for herself and understand what the right approach would be in starting a food forest. She was diligent in deciding what species to plant, and how to cultivate healthy soil conditions for the species planted – “we need to create a lot of homes here. New homes for birds, for insects or mammals or amphibians, for all the soil life and all the non-visible creatures” [fieldnotes, informal conversation with Maura, 22.02.2022]. During the tour and our conversations, it became clear that creating homes for non-human life and returning the land back to nature was an important goal for Maura that she also found important to pass on to all volunteers she worked with.

The creation of homes for non-human species raises important questions on how the role of humans emerges in the context of a food forest. As a human-made system, a food forest continues to

allow humans to take on an active role in its design, creation, and maintenance (De Groot & Veen 2017). However, they have become agricultural systems through which the ideologies of human control over nature face contestation.

I met Robert through my connections in the food forest network in the Netherlands. He is a board member of the *Voedselbosbouw Stichting* (Food Forestry Foundation in the Netherlands) and was very influential to my research. The foundation is responsible for designing new food forests through the development and dissemination of relevant knowledge and skills related to agroforestry. When I first met Robert, I was hesitant in bringing up themes of the pluriverse, of new modes of being, of emotionality as a tool to connect to nature. As a member of a foundation, I expected him to be very practically oriented about questions regarding the food forest. However, he quickly proved me wrong and expressed his struggles in having to always comply to rational, practical knowledge surrounding food forestry. I found him to be very emotionally literate, aware of the cultural restrictions towards new modalities of being in the world and of the exploitative position that humans have within ecological landscapes. The notion of humans needing to reimagine what it means to possess ‘control’ over nature came up in our conversation:

The industrial culture is being characterized by a sense of control over nature, but the opposite is the case because we don't control nature at all, or to a certain extent, but never entirely. But once you start to integrate nature in the story about agriculture, then you can gain control while making your story more complex. The acknowledgement of complexity allows you to improve your control without the illusion of having total control.

[Interview, Robert, 29.04.2022]

This interview excerpt demonstrates the importance of repositioning the idea that humans can, in any shape or form, *control* nature.

While the fundamentals of industrial agriculture are founded upon human dominance and control over the abundance of desirable species and the extermination of unwanted ones, food forestry actively celebrates the abundance of all species, recognizing that biodiversity and interspecies relations are favorable measurements of ecological value (Albrecht & Wiek 2020). Through my conversation with Robert, I understood that to enable interspecies flourishing, it is important to let go of the desire for control and acknowledge the complexity of multispecies assemblages that exist in natural ecosystems. He told me that many new food forest farmers struggle in letting go of the need to constantly *do* something in the food forest. He tells them to let go of that urge for control, to let nature take care of itself, and carefully aid it by observing and learning from it.

A similar thought was shared by Eva, Robert's acquaintance who I met through my volunteer work at the *Eemvallei* food forest project in Almere (a food forest project of *Voedselbosbouw Stichting*), which she coordinated. She also joined my focus group, and has revealed in her story the struggle that is experienced in letting go of the presumptions that humans possess the abilities to determine what is best for the food forest to flourish. Through her artwork, she explained:



Figure 2. *Eva's 3D installation*. Photo by Nikita Bharat, 24.04.2022

“It is a polyculture that we have in the food forest and if we don't do anything, nature does it by itself and we are here to float around a bit as humans. We don't have to do anything, and things will still turn out like this. But we are humans, and we want to influence things. It's about seeing the magic of what is already happening, and feeling the shame of trying to do something that nature is far better at than I am.”

[Focus group, Eva, 24.04.2022]

As such, decentering the human as the main actors within food forests, nature, or their general position within the world is being actively challenged through their participation within food forest projects. Human ‘hyper-separation’ from other species is practiced through transgressing the notions of human exceptionalism, recognizing that the knowledge we possess is not the hegemonic truth, and that other-than-human species possess the abilities to shape and drive the development of human and non-human spaces alike (Pacini-Ketchabaw et al. 2016).

In this chapter, food forests were introduced as alternative agricultural systems in the Netherlands, but their development continues to be shaped by various socio-economic processes. In the following section, food forests will be examined within the neoliberal context, which will further expand the understandings of how these ‘contact zones (see Ogden et al. 2013) challenge the nature/culture divides and the current ontologies of modernity.

## 1.2 Food forests within the Dutch Neoliberal Order

Understanding the role of the food forestry movement within the national neoliberal trends in the Netherlands has been an important framework for my research to understand these systems as part of larger global processes. The previously described global trends of industrializing the agricultural sector was similarly observed in the Netherlands in the 1950s, as labour costs and land prices grew and farmers were pushed to scale up towards large-scale agricultural production (Oosterbaan & Kuiters 2009). The emerging consequences of the industrial agricultural sector soon enough prompted explorations towards alternative farming strategies, such as agroforestry.

The formal identification of food forest initiatives in the Netherlands has been recent. The first food forest in the Netherlands was established in 2009 in Groesbeek. It started out as a 2.5-hectare area that has grown into a productive food forest since its establishment, with harvests supplying food to several restaurants and shops, as well as visitors. Since then, hundreds of food forest projects have popped up across the nation, initiated by enthusiasts, professionals, researchers, scientists, and farmers.

The intensification of the agricultural sector and the accompanying negative ecological consequences has been the main driver of food forest initiatives within my research. For instance, *Voedselbos Thuis haven*, a food forest in Zeewolde where I hosted my research focus group, was an initiative of a former dairy farmer who has opted to change careers the directions of food forestry and biodynamic farming. This choice meant moving towards practices within agriculture that foster ecological integrity, species biodiversity, nature-inclusive farming, as well as cultural dimensions of reconnecting to nature for mindfulness.

I also got to know a family initiative in Nijmegen, that decided to transform a piece of land within an agricultural region into a food forest for the purpose of alleviating the abundance of monocultures in the area. The family of three – two parents, Selene and Adrian, and their daughter, Lea – had invited many friends, neighbors, and other volunteers to join them in this goal. During one of the seasonal planting days at their food forest, I took part in a group discussion during the lunch break on how connections could be established with the village and the farmers in a way that illustrates the positive impact of having food forests within the area, which the family has found an important component in the development of their project. However, Selene, the mother and wife in the family trio discussed the inability of comparing food forests to mass-scale agriculture – “you shouldn't compare traditional agriculture to a food forest because your goals are different than producing maximum yield in the shortest amount of time” [Interview, Selene, 04.04.2022].

Although the placement of food forests in opposition to industrial agriculture is inevitable in their development, it is still not widely observed in practice. Most food forests in the Netherlands are still young, not exceeding the age of thirteen years, and most of which remain within the span of one to six years old. It takes about six years for a food forest to become productive, and as such the current food forest scheme doesn't yet pose as a real substitute to feeding the nation.

The ability of food forests to fit within the neoliberal economic and political context of the Netherlands is an important consideration in understanding what challenges the movement faces, as well as how it can serve as a form of resistance to the global order of food production within 'Western

modernity', which De La Cadena and Blaser (2018) describes as an era through which structural modes of coloniality continue to dominate social, economic, and cultural contexts through principles such as reliance on rational knowledge, technological innovation, economic growth, and individualism.

These contexts are upheld by institutions that dictate the access to knowledge and power, perpetuating structures of inequality and violence (De La Cadena & Blaser 2018). The natural world is interpreted through the lens of science to suffice populations with food, resources, and energy (Stengers 2018). These processes have been constructive to the onset of 'scientific imperialism', through which such modes of knowledge production come to dominate over other sources of knowledge that are oftentimes practiced by indigenous cultures in the non-West (Stengers 2018). Such ontological marginalizations create spaces where the multiplicity of worlds is denied through constructions of subjects (often humans) and objects (often non-humans), rooted in anthropocentric assumptions that only humans possess the abilities to produce, use, and act upon knowledge (De La Cadena & Blaser 2018).

Food forests are spaces where other forms of knowledge and practices can be explored amongst human communities. However, these explorations were constantly linked to the systemic constraints that shaped these engagements in practice. Many of my research participants were critical of the current socio-political order in the Netherlands, the cultural dimensions that value individualism, competition and productivity, and the power of institutions that contribute to upholding these ideologies. For example, Maura has lived in several countries including Russia and Portugal for longer periods of time, and has expressed her discontent in being entangled in societal and cultural values in the Netherlands that oppose to her own ideals:

Now I'm back in the Netherlands and I feel how individualistic Dutch people are. Generally they're not such community-minded people. There are some who are trying their very best by putting so much effort into starting up collective housing, collective gardening projects, whatever you name it. There is energy wanting to go there. But it's so radically different from the economical principles, the policies, the regulations, so it's very hard. I see a lot of people who have the tendency to either give up or go abroad.

[Interview, Maura, 08.03.2022]

The socio-economic order in the Netherlands not only causes internal discontent for people like Maura, but also poses many challenges to the proliferation of food forestry in the nation. The low profitability of food forests projects due to limited subsidization and the lack of financial incentives for ecological protection, is one of the main limitations that prevent agroforestry systems from gaining recognition and momentum in Europe (Sollen-Norrlin et al. 2020).

Many individuals I worked with started their own food forest initiatives out of personal desire, and many of them have discussed the inability to rely on this form of work to financially sustain them. Most of these individuals relied on financial support from the government (COVID-19 subsidies), on other employment unrelated to their involvement in the food forest or are simply comfortable living a low-income lifestyle.

For example, I met a couple – Gijs and Emma – through my involvement in the *EcoVredeGaard* food forest in Arnhem. The couple lived a simple life. They had a simple car, simple clothes and did

not need much more. By getting to know them I found that they did not desire more and found more happiness in helping people in need and creating spaces in the Netherlands where people could reconnect back to nature. Emma was born in Suriname, and even though it was over 50 years ago since she lived there, she still remembers her childhood years as times she could play in the beautiful forest filled with trees that were thousands of years old. At a young age she moved to Amsterdam, a city with little nature comparable to what she was used to, but she continued to hold on to the powerful connection she knew was possible – “the connection with nature living in Amsterdam was very difficult for me. Not to have the presence of my home with me because the forest was energetic and my home. Because it was my aura. It was inside my system. It was outside my system. It was everywhere for me” [Interview, Emma, 13.04.2022].

The presence of his ‘aura’ stimulated the initiative of creating a food forest in the Netherlands, where these experiences could be shared with people who are not exposed to nature on such profound levels. However, there continues to be a misalignment with these goals and aspirations and Dutch neoliberalism that favors profitable business ideas.

This was exhibited through Emma’s frustration when speaking about the contextual limitations of her environment to enabling her desire to invest time and energy into her food forest. She told me she only has one day in the week that she can spend in her food forest, that it is her momentary getaway from ordinary life upon which she depends on to make a living. Their office was a government-lent warehouse that was stocked with old furniture, toys, books, and other needless items. Both Emma and Gijs talked about wanting a better space, more recognition, more funding for their foundation. These observations reflect the tensions that arise between the realization of food forests as a viable agricultural system within a society that values profitability, efficiency, and cheapness for all products, including food (Patel & Moore 2018).

New farming strategies such as food forests can be seen through an entrepreneurial lens of striving for maximizing profit regardless of context and thus practicing neoliberal autonomy, whereas practicing *actual* autonomy can offer a reconsideration of what values we adhere to and be perceived as a mode of resistance against neoliberal understandings (Stock et al. 2014). I have encountered forms of both these types of autonomy. Some food forest projects that operate under institutions such as universities or NGOs have showed that operating within the neoliberal order can be a realistic way forward for agroforestry to triumph in the Netherlands.

I met James, a food forest project coordinator and forest ecology graduate who has been researching how the value of food forests can be communicated under the structures of economic business models. He has expressed that food forests should be more than just a hobby and must be economically viable to illustrate their value within society, and that denying this reality contributes to the romanticization of food forests as an attainable farming strategy. He explained:

I became more realistic that we are living in a system that is based around money. The economic system, every value system that we have, sense of justice, every sense of order is imaginary and it's not real. Objectively it's not true, but in practice it's our reality. So you can say I'm disagreeing with business models. But then yeah, what are you going to do then?

[Interview, James, 01.01.2022]

A conflict of interest arises between implementing food forest projects and fitting them within the economic system in the Netherlands, demonstrated by some of my interlocutors who have kept their initiatives as their personal 'playgrounds'. While defying placing their food forests into marketable terms, they also do not actively resist them, but instead keep them as 'hobbies' that they enjoy in their free time.

There is a doubtless interest and fascination for food forestry in the Netherlands across a variety of different stakeholders – members of foundations and institutions, students, volunteers, etc. Among those who have more experience tackling the tensions between striving for holistic ideals and facing the challenges of industrial modernity, there seems to be an overarching narrative of over-romanticizing the food forest movement, which leads to emotional distress for many food foresters (as could be interpreted through the vignette at the beginning of this chapter).

My own interest in food forests as a research subject had me encounter forms of resistance from food forest pioneers in contributing to the production of more knowledge and attention towards food forests. Many of them described the generation of 'hype' over food forests that misleads interested individuals into following the path that is full of missteps, challenges, failures, and contradictions with the current economic system. An emphasis on *actual* autonomy through resisting the paradigms of capitalist values associated with nature and food production can provide a corrective to the over-romanticization of alternative food collectives (Stock et al. 2014). As of now, the food forest movement is struggling in transgressing the efforts for neoliberal autonomy towards *actual* autonomy, leaving many individuals and collectives struggling to gain recognition of the value that food forests create within a Dutch society that favor opposing ideals.

For current and future food foresters, some seem to operate under the principles of neoliberalism, demonstrating how food forests can work as a business model that can successfully monetize its output and value and thus financially sustain them, while others choose to remain separate from such narratives, and operate from 'outside' the neoliberal order, even if that means living a precarious lifestyle. However, there seems to be a trajectory among which many food forest projects see themselves adhering to that align with the concept of *actual* autonomy – practices that free collectives from “dependencies and inequalities caused by the structures of neoliberal accumulation” (Stock et al. 2014, 413).

Food forestry opens possibilities for the re-localization of food production, a resurgence of the commons and collective living, and the decommodification of nature, all of which act as counteractive measures against dependencies on neoliberal, industrial food systems. These movements have shown potential in reframing 'civilization' as we know it, serving as the necessary political and ontological foundation for transitions towards a pluriversal existence (Escobar 2021), which will be the topic of the following chapter.

# Chapter 2

## Food Forests: Towards A New Civilization

The Netherlands is a prime example of the displays of civilization dominance, defined by the “measure of economic and political unification and technoscientific progress” (Escobar 2021, 2) Together with many Western nations, it holds a particular place within the geopolitical sphere of influence by constructing the fundamental premises about development, economic growth, and the production of rational knowledge over topics like climate change (Parks & Roberts 2009). These constructions formulate questions of ontological origin. Modernity can be characterized by capitalist and patriarchal ontologies dominated by societal hierarchies, exploitation, appropriation, control, and violence (Escobar 2021). In its nature, the domination of such ontologies overpowers the prospects of any other modalities of being. It has relied on war, enslavement, genocide, and occupations of territory since 1492, when the overpowering colonial forces engulfed the globe (Tuck & Yang 2012).

The failures associated with this discourse has become apparent through ecological and cultural devastations that elicited occupations of Indigenous lands, world wars, mass extinctions and the prospects of climatic and ecological collapse (Myers 2018). Prompted by these manifestations, there have been numerous calls for civilizational change and transitioning towards a more sustainable, equitable society (Kotz 2002). Movements such as degrowth, return of the commons, re-localization have been prominently resisting the current hegemonic world order (Kotz 2002).

New imaginaries that transcend those characteristic of capitalist development, economic growth, science, competition and individuality have the potential to reconstruct civilization towards an equitable space where humans do not act as the dominant creators of worlds. Instead, they incorporate the understandings of relationality – or the “radical interdependence as a way of understanding life that sharply differs from the dominant dualistic ontology of the modern” (Escobar 2021, 3) – into their worldviews.

The interconnectedness of all life is a simple way to understand the ontologies that favor relationality and transgress the ones of duality between humans and the rest of the natural world. These dualities are formulated through several dominant separations – human and non-human, mind and body, nature and culture, matter and spirit, the list goes on (Escobar 2018). The overarching narrative is that humans are ‘separate’ and therefore are presented with access to power over others, such as non-humans. Food forests can be viewed as spaces where these predicaments can be reformulated through the practice of recognizing non-human life as integral members of ecosystems upon whom we depend on. This theme has been voiced by Maura during a semi-structured interview:

I think we need to start to understand, or not just understand with our heads, our minds, and our logic, but really *experience*. With every cell of our being that we are an inherent part of this living ecosystem on this living planet, and we better make sure we keep it alive. Because we're totally dependent on it and it's not just a commodity or a service to us.

[Interview, Maura, 08.03.2022]

While some of the people I have worked with brought up the notions of interconnectedness, dependency and relationality during our interviews, these themes mostly came up through the embodied expressions of these feelings and associations during my research focus group. Below is a transcript of the ‘story’ that served as an explanation to the installation that was created Tom, an individual I met on my first day of fieldwork.

My first encounter with Tom was a pleasant surprise. He is a professor of organic agriculture at a Dutch university and is also the co-founder of the food forest project that I visited that day. After a long day of planting on a cold day in February, he offered me a cup of tea and we got to talking. I told him about my research and it immediately sparked his interest. He told me there needs to be more interdisciplinary research on food forests, that academia can be distorting in reducing and oversimplifying the wonders of nature. He spoke about the food forest with so much heartfelt emotion, an urge to change the narrative of education that relies on quantifiable knowledge. I found Tom to be one of my most important interlocutors, who has invited me to dive further into the topics of human-nature interdependency, the value of love and care towards non-humans, and the structural barriers of educational institutions.

His participation in my focus group gave him an opportunity to express his experiences and worldviews through beautiful and touching creations:

“You asked which location I felt most attached to, and there was this cross, and there was this thought and how it related to mankind, which was there, dead, and I am alive. And this was the first cycle that I experienced very clearly and strongly. At the same time, I thought there are so many cycles, and of course we know about a lot of them. But on this spot, I felt all the energy of these cycles, and this was represented with the dandelions. You can see the flowering one, and the one finished with flowering and with seeds already, and this is when the seeds are there, they are like flags that make the wind visible. And the wind is also a cycle that goes through your hair, or through the trees and it turns back. I felt it there very strongly, this is the Alfalfa of today and of last year, and they connect. And all of this is connected to the big cycle of life. Here I put a woodchip because I think trees are very important to the cycle.

We live in a very polarized world, that's why I made a strong separation between the colors. The green represents the earth, and the whole square is green, the red represents the people and blue represents the permaculture principles – earth care, people care, fair share. And we are in the center. Then I put the whole thing on the earth outside. Then I have the sun, which was a small ball at first, but I lost it. And the sun is the biggest thing, the whole thing circulates according to the sun. So again, that is a cycle.

I think it is very necessary to realize that it is very polarized and that there is a strong distinction between the earth and the people. And how we as people deal with this whole earth. And that is the first step to understand that it is all cyclic and interconnected and integrated in everything.

I put the humankind in the center because we are responsible for everything. Although we are a small part, we still have the responsibility to take better care for everything.”

[Focus group, Tom, 24.04.2022]



Figure 3. *Tom's 3D installation*. Photo by Nikita Bharat, 24.04.2022

Tom's experience of facing and sensing the countless cycles that existed within the food forest we were at in Zeewolde, Netherlands, demonstrated the openings for new ontologies of being where the separation between the human and nature was experienced as less distinct through the recognition of cyclical orders that are all around us and that we ourselves are part of. However, these experiences continued to exist within the recognizable polarizations of the world that he felt immersed in, causing a clash between his inner experience and his environment. What would it require for a civilizational transformation to occur that could hold these experiences in place?

According to Arturo Escobar (2021), a civilizational transition can occur across six axes: the re-communalization of social life; the re-localization of social, economic, and cultural activities; the strengthening of local autonomies; the de-patriarchization and de-racialization of social relations; the reintegration with the Earth; and the construction of meshworks among transformative alternatives. In this chapter, three of these strategies will be examined in the context of food forestry in the Netherlands to determine how the movement can facilitate a civilizational transition away from neoliberal societal dynamics.

## 5.1 Re-communalization of social life

Historically, the human experience in providing for oneself and each other has been largely communal and cooperative (Boyd & Richerson 2006). With the spread of neoliberalism, the role of individuality began to dominate over the understandings of living collectively, in communities (Adams et al. 2019). Individuals were framed as integral actors within globalized markets that were spoiled with countless choices and freedom. These conditions took away much of what was communal – public spaces, public housing, kinship ties and the collective sense of belonging to place and land (Adams et al. 2019). For Escobar (2021), the re-communalization of social life revolves not only around human sociality, but the “interconnectedness that is rooted on a re-woven fabric of life that is more collective and integrated with the entire span of the non-human” (Escobar 2021, 8-9). The interconnectedness encompasses the human, non-human, as well as the immaterial, spiritual worlds. The understandings that we are entangled to everything that is alive, everything that surrounds us, is a reconceptualization of kinship that returns us into connection with the meshwork of assemblages that we, as humans, depend on (Escobar 2021).

Food forests are facilitating the convergence of humans with non-human beings that sustain and co-create the landscape together (Tewari & Dagar 2017). I found that the food forest invites the involvement of many people, bringing in those that are looking for connection, fulfillment, and contribution to a new inclusive ecology between humans and nature. The act of participating in the creation of a food forest asks for direct involvement with local landscapes through collective engagement. Every food forest I visited expressed these fundamentals through the various activities the re-connected people to each other and to the land.

For example, at the *Eemvallei* food forest in Almere, the group of volunteers that joined the planting days all contributed to the given area by collectively planting over 1000 trees. After the planting day, many stuck around for a campfire, snacks, and drinks, during which I got to know more about where people came from, and what brought them here. One volunteer, a young adult name Bob, told me more about his intentions for the day. He explained that he worked for the *gemeente* (municipality) in Amsterdam in the sustainability and energy transition department. He enjoyed traveling, mountain biking, and hiking in his free time, which he did not have much time for these days. He found out about the planting day at the *Eemvallei* food forest through the internet and decided that this is how he would like to spend his weekend. He wanted to get back to being in nature, doing practical work and connecting to new people. He brought a friend, Bas, who I later found out was his date. He thought this planting day was a great idea for a first date. Surprised at first, I soon recognized that a day like today did bring about new forms of connections with both friends and strangers.

Many of the planting days I attended invited these forms of engagement among people. I felt that people were gathering for a purpose, while being tied to a collective goal that fosters a respective relationship towards nature. People were curious about the food forest, asking questions about what plant species we are planting, what role they play within the ecosystem, how they should be planted, etc. I experienced genuine care for the spaces we were in, the appreciation of all other non-human life that inhabited it, and the reciprocal connection to other humans. These were the manifestations of re-

communalizing social life, through which I conceived how food forests can facilitate the re-grouping of people into communal projects that redefine the qualities of sociality.

## 5.2 Re-localization of social, economic, and cultural activities

De-localization has been a fundamental component of neoliberal expansion and globalization (Kotz 2002). The production chains of many resources and products have expanded across continents with the rapid technological progression within the transportation sector that redefined the definitions of what 'local' means (Kotz 2002). Today, local could mean produced in the same nation or state, or even on the same continent. The understandings of re-localizing in Escobar's (2021) understanding reflects the reclamation of local land by native communities, a response of many peoples who have been displaced throughout the slave trades, refugee crises, and involuntary migrations that have been enacted through the exploitative practices such as logging in forests, large-scale mining, soy and oil plantations, and the extraction of fossil fuels. The accessibility of consuming goods that are produced in distant parts of the world that offer cheap opportunities for human labour, land, and little environmental policy have further reinstated geopolitical inequalities and dependencies between nations of the global West and the global South (Patel & Moore 2018). The notion that any product is within grasp has fueled extreme waves of consumerism across many nations that further exacerbate the extraction of resources for products that continue to exploit our planet and people.

Re-localization entails a resistance to the current globalized world. While many economic, social, and cultural benefits exist within the working of globalization, this systematic order has proven to have abundantly many downsides (Kotz 2002). When it comes to food, Escobar highlights the transformation of our food systems as one of the most pressing concerns of our time:

Regaining our rootedness in the local means relocating life-essential activities back in the places where we live to the extent possible. Food is one of the most crucial arenas, and it is also where a lot of communalitarian innovation is occurring in many world regions. Food sovereignty, agroecology, seed saving, commons, slow food, and urban gardens are instances of this renewed turn back to the local; at their best, these innovations also break with patriarchal, racist, and capitalist ways of living. Though taking place at the local and regional levels, these and similar initiatives might foster transformations of national and international food production systems. They could lead to a renewed understanding of the value of commonly held land, and to re-weaving ties that once flourished between cities and the surrounding countryside.

[Escobar (2021), 10]

Food forests are a prime example of 'communalitarian innovation', where food autonomy can be practiced through the creation of localized commons that center around nature-inclusive agriculture. While some of the food forests that I researched were private spaces, most of them were public, open to visitors from nearby and from afar.

The *Eemvallei* food forest in Almere is one of the largest food forest projects in the Netherlands and is a part of the *Maak Oostervold* (Make Oostervold) initiative. *Maak Oostervold* is an urban initiative where nature, city, and agriculture weave together in the creation of a citizen-designed region. The

design and construction of houses, roads, nature areas, and access to utilities is the task of residents of the area who are invited to co-create their own living environment according to their collective values and desires. The project is a unique development in the Netherlands, where most often citizens need to adhere to state-sanctioned guidelines and restrictions when it comes to building both private and public infrastructures.

When speaking to Eva, the project coordinator of one of the planting days at the food forest, we spoke about how *Eemvallei* could become a food forest where residents of Oosterzwoed can harvest their own fruits and vegetables, make use of the green recreational areas, and even sell harvest surplus at local markets for a collective income. I also spoke to a current resident in the area, who explained that they see a bigger picture of this project that facilitates the larger re-connection to nature for both recreation and as a source of food. The project can be viewed as an active reclamation of social, economic, and cultural activities, of which the food forest is an important component.

Another project of the Food Forestry Foundation is the Schijndel food forest, a two-part forest of 20 hectares that has also been set into motion. I have visited this food forest together with Robert, the board member of the foundation, who helped me grasp the vision and the process of establishing such projects:

The question is how to scale up food forestry in Dutch agriculture? It's much more complex and you have to play chess on a lot of chess boards. You must be able to convince policymakers and politicians on the one hand and on the other hand, you must be strategic in your cooperation with businesses and/or with NGO's. And you have to acquire budgets for the program that is practical and you have to focus on the realization of planting trees. You should have a pragmatic strategy because in the end, when you succeed in realizing these food forests in big numbers and on a serious scale, then you have created a very nice and wonderful ecosystem that is full of wonders. If you succeed, then you have created nothing less than a small miracle. And of course, there can be more to wish for, but it's in itself already a miracle that it is actually successful within this hostile environment.

[Interview, Robert, 29.04.2022]

Since both projects are only a few years old, their success is yet to be determined. However, when participating in planting days and talking to several of the project coordinators, I felt that there was a lot of hope for the future of food forests in the Netherlands. Their potential in creating common spaces for cultural, social, and economic activities has been a glimmer of hope for envisioning how these spaces could play an important role in re-localizing the food supply chains in the Netherlands.

### 5.3 The reintegration with the Earth

Human re-integration with the Earth requires a shift across many paradigms of thought and experience (Myers 2018). It is difficult to explicitly state what this shift entails and how it can be achieved, but it is an integral step towards transition within the modern Western secular civilization, with many sources of knowledge, wisdom and practices that are to learn from (Escobar 2021). The integration with Earth, Gaia, is oftentimes experienced and practiced within Indigenous cultures that have deep ancestral connections to their land (Myers 2018).

Arturo Escobar (2021) draws the takeaways of rekindling with the Earth from the Nasa indigenous peoples of Northern Cauca, Colombia, who recognize that if capitalism continues to exploit our planet and perpetuate further ecological and climatic imbalance, we are all at risk of life. We are the earth. This conscious embodiment of recognizing Gaia (Mother Earth) as a living, breathing, aware source of energy and divinity of which we are part of and who is part of us is a requisite to her liberation.

The conceptions of kinship with the Earth, with plants, with the soil, with everything that has life was a challenging conception to observe and interpret. My own understanding of what this kinship could look like is highly limited to my own upbringing and conditioning. I have never had roots to land, never learned how to cultivate my own resources, how to practice reciprocal relationships with plants, or how to recognize them as sentient subjects. While deeply drawing from the knowledge and wisdom of Indigenous peoples, Escobar's conceptions of reintegration with the Earth greatly speaks to the topic of my research, albeit with required vigilance in applying these understandings to peoples living in the Netherlands, who do not hold Indigenous identities. Emma, an aged woman born in Suriname (a former Dutch colony) who has relocated to the Netherlands at a very young age, has shared her experiences during an interview:

What I am trying to do when I'm in connection with nature is to feel the essence of a plant. So this is my exercise, because if I don't do that then I have lost it. So I'm trying to reconnect with that part again. Not to just know their names because that is just a little part of it, but to feel the essence of a plant and what it needs to grow and to be happy and to work together with other plants.

[Interview, Emma, 13.04.2022]

During our conversation, I felt the longing and sadness of being immersed in an environment that has little awareness of how to relate to plants and view them as non-human peoples, possessing intelligence, autonomy, and forms of consciousness. While many of the people I have worked with mentioned their cognition of how interconnected we are with plants, animals, and the Earth, I observed a lot of emotions of sadness among participants in finding the methods to embody this awareness. There seemed to be a disconnect between the cognitive awareness of these human-nature relations, and their actual practice. One of my focus group participants, Anne, expressed this through her art installation during my focus group:



Figure 4. *Anne's 3D installation*. Photo by Nikita Bharat, 24.04.2022

“I began by thinking more about human-nature relations and how I personally feel in that space, and I was kind of playing with the themes in my head of both connection and disconnection. And feeling both a part and not apart, and all these juxtaposed themes. I was trying to show that for me there is a lot of magic and there is this sort of intertwined connection to this magic, but you can feel it or not feel it or practice it or not practice it. And to me being in a food forest, that’s a practice of this magic and it’s something that is always there but something more of a practice of it rather than something passive. So, it is also about engagement for me. I think there is so much there and so much that I don't have the words for, but mostly I thought about what it means to care about these things and what it means to practice connection. And more of the idea of kinship and connection, and how that for me at least feels like it is always there but doesn't always feel like I am embodying that.”

[Focus group, Anne, 24.04.2022]

Food forests seem to be spaces where people can experience the *magic* of species interrelations. Escobar notes that “that new paradigms of relation between humans and the Earth find unexpected inspiration in nonhuman living beings, including, notably, fungi, forests, plants, and sacred plants and in cultures and ontologies that have lived with the strong awareness that the Earth is alive, such as animistic and other indigenous peoples’ ontologies” (Escobar 2021, 13). The food forest is an inviting space where such inspirations can be sourced from. I found that many of the people I have worked with possessed a lot of knowledge of plants, mycorrhizae networks, and root systems among trees and found this knowledge as a source of inspiration for experiencing the said *magic* of the forest. However, this source of knowledge often relied on cognition and science, rather than the actual embodiment

and practice of such conceptions, even though the desire and longing for this connection was apparent amongst many.

The reintegration with the Earth might require further developments in conceiving our connections to nature, ones that invite different ways of knowing and existing within the world. Within the highly academic, functional, and neoliberal system society in the Netherlands, our perception of nature is dictated predominantly by science and logic. In the second part of this thesis, I will examine how food forests can dictate new pluralities of knowledge, experience and practices that foster new paradigms of connection and integration with the Earth.

## PART II

### FROM UNIVERSE TO PLURIVERSE: FOOD FORESTS AS THE MYCELIUM TOWARDS NEW WAYS OF BEING

The winter in the Netherlands has been wet, with little snow but lots of precipitation. Beginning my fieldwork in the early months of February and March meant spending many days outdoors in the cold. I have gone through a turmoil of emotions – anger from being in constant discomfort, guilt for not being able to appreciate the diversity of weather patterns, excitement for how much more I will enjoy the days outdoors once the warmer months arrive. And today made the excitement more real. It was a warm day in March, and I was outside in the food forest with one of my interlocutors. What was initially a semi-structured interview turned into an experience of storytelling and show-and-tell. Tom, a lecturer of permaculture, agroforestry and organic farming at a Dutch research university quickly stood up and led me to a corner of the one-hectare food forest we were in and picked up a small hollow stick from the ground, something I would have identified as simple debris on the ground floor.

“See this stick? It is a fallen branch of a Blackthorn shrub. It’s hollow inside. And it is the only place where the Brown Hairstreak butterfly, a rare species that is on the IUCN red list, can lay their eggs.”

He walked over a few steps to the right and picked a leaf from the floor, pointing to a thin layer of sap-like liquid on its surface, almost unseen to the bare eye.

“These are the leaves of the oak tree. They exudate sugars, what we know as honeydew, when aphids feed on them. The same butterfly feeds on this. So, now the butterfly has a place to lay eggs and has a source of food. It can thrive in this system, and we would have had no idea if we didn’t pay attention to these connections. There are over 10,000 types of these relations here. Like here!”

Instantly he led me closer to the pond, next to which there was a young black alder tree. The alder has nodules in its roots where it forms a mutualistic relationship with Frankia bacteria that can take  $N_2$  (nitrogen) from the air and convert it into  $NO_3^-$  (nitrate), the useable form of this nutrient compound for plants. The same nodules in the root are connected to the hyphae of mycelium, the networks of fungi connecting to the tree roots in the soil. The nitrate is distributed by the mycelium to the Blackthorn shrub that houses the eggs of the Brown Hairstreak butterfly we saw earlier.

“All of it is connected. It is part of the big network inside the soil. It’s all one body. And we are part of the system because we decide which shrubs to plant, but we rely on the system to generate nutrients for all the other species. Our role is to respect it and not to manage it. It’s like a paradise, everything was there, we just need to harvest and enjoy, and love it.”

His gentle voice and sparkling eyes emanated the awe and adoration he felt towards each little nook in the food forest. His extensive knowledge fueled his fascination towards the processes of nature, which I could feel translated into his deep care for this place. Comprehending all these interactions

between plants, bacteria, fungi, and insects during our conversation made me realize how human abilities to love and be mesmerized by these connections can aid these systems and propagate endless new networks and relationships for flourishing.

“We can only protect the things which we also love. That is what students and children learn here in the food forest.”

[Interaction, Tom, 10.03.2022]

The situation described above might serve as an illustration of how I perceived the pluriverse through my explorations into the food forest. Particularly, the weaving of science, emotionality, and relationality through Tom’s engagement with the landscape. In this part of the thesis, the pluriverse as a concept will be demystified further through the lens of food forests in the Netherlands.

In the first section, I will discuss how the pluriverse encompasses the ideas and practices that challenge Western modernity. In the following section, I will explore how these fundamentals invite contestations towards the scientific discourse that became the prominent manifestation of modernistic values founded upon rational and objective attitudes towards the world. In the last section, I will discuss how the understandings of the pluriverse can lead to new developments in education and call for reform within our institutions.

# Chapter 3

## Challenging Modernity

The pluriverse entails an evolution into the future, but similarly so into the past, to times preceding the heavy industrialization of most parts of the world that led to the capitalist order today (Escobar 2018; Querejazu 2016). It invites a world where different understandings of the world exist together, incommensurable from one another (Querejazu 2016). The pluriverse articulates a world that transgresses the idea that we all live according to one universal realism (Escobar 2018; Kothari et al. 2019). Rather than a world built on the principles of modernity, it is a *world where many worlds fit*<sup>1</sup>.

The modern predicament is an entanglement of social and political orders, such as nation states, cultures, race, class, as well as economic orders that are predominated by neoliberal economies spreading across the globe and mandating the systems and institutions that dictate the values of economic progress, productivity, and development (Kothari et al. 2019). How has this neoliberal ideology infiltrated our existence, our modes of thinking, our relationality to the living world or towards the cultures that do not live according to these configurations of modern predicaments that characterize the global North?

The crises we face associated with such civilizational models are unprecedented. They are crises of vast ecological magnitude that are interlinked with social crises of poverty, inequality, and marginalization (Myers 2018). The marginalization that occurs through the lens of modernity is not only imposed upon social groups and cultures, but upon entire ontologies of being (Escobar 2018). Particularly, ontological marginalization of indigenous worldviews and knowledge has been a predominant and oppressive forms of violence ascribed by Western modernity (Querejazu 2016). Cosmovision of the Buddhists, Andean and Daoist teach us about fundamental differences between Western modernity and other epistemologies of world-making, rooted in relationality among the natural/social/spiritual laws that oppose social dichotomies of the global North, such as the dualism and compartmentalization of nature/culture, mind/body/, reason/emotion, etc. (Kothari et al. 2019).

The pluriverse entails that multiple ontologies can exist simultaneously, and as such are incommensurable (Querejazu 2016). A pluriverse not only means accepting differences but also recognizing that there are multiple realities that exist together, rather than multiple perspectives upon one universal truth (Conway & Singh 2011). Through acknowledging the pluriverse, one can divert away from our own anthropocentrism in what we believe of our world and recognize that our own subjectivity and perception is merely one ontology (De La Cadena 2010). We are living in a world that is situated within our own minds when instead it is to be perceived and interpreted through different subjectivities, not all of which are human, and all of which are valid (De La Cadena 2010).

Such thinking can challenge the core attributes of modernity that are engrained in our geopolitical configurations of order, such as the notions of a nation states, sovereignty, politics, and socio-cultural norms. Expanding our perception of non-human identities can redefine our ideas of sociality to include the enabled freedom of living plants, animals, and other organisms that require

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<sup>1</sup> Reference to the words of the Zapatistas of the Chiapas, Mexico.

certain environments to prosper. This entails a paradigm shift of accepting non-human life as subjects rather than objects and structuring our societies in a way that benefits the plurality of life forms on earth (Latour 2004; Myers 2018; Simons 2017).

The neoliberal development rhetoric of extractive and market-based globalization that has been set in the 1970s in efforts to redesign the global financial market and political order after the war period (Harvey 2005). However, the exploitative, extractivism and growth-oriented modes of existence have been deeply rooted in centuries of colonial history between the Western settlers and the global South (Harvey 2005). The new order propagated a further development in the relations between humans and nature, with the tendencies of humans to commodify nature into monetized product goods such as food, energy, and resources (McCarthy & Prudham 2004).

Movements towards pluriversal ontologies require transgressions of modernity that link societal and epistemological transitions. While neoliberalism can be seen as a driver of modernity's flaws, there are fundamental epistemologies that shape these orders, such as the hyper-separation between humans and nature (Pacini-Ketchabaw et al. 2016).

### 3.1 From Hyper-Separation to Relationality

The epistemological consequences of neoliberal reforms have fostered the objectification of nature and a hyper-separation between humans and non-humans (Myers 2018; Pacini-Ketchabaw et al. 2016). Food forests have sparked curiosity across hundreds of Dutch residents over how this relationship can be transformed through alternative farming strategies that do not rely on extractive modalities of control over other-than-human species. Part II of this thesis will exemplify the ways through which human emotionality and spirituality can foster a reconstruction of current Western ontologies that operate under paradigms of rationality, science, and modernistic objectivity – towards a pluriverse.

According to Blaser (2013), modernity can be classified through three basic assumptions: the separation between nature and culture, anthropocentrism, and the linearity of time. The origins of this line of thinking can be traced back to the period of the Enlightenment in the 17<sup>th</sup> and 18<sup>th</sup> centuries, classified by the scientific revolution and the separation between church and state (Zafirovski 2011). The effects of this historical time on modern society can be understood through the reconfigurations between man and nature.

The Enlightenment period has observed the replacement of God with man, putting him at center of the universe and the voice of reason that has the tools, such as science, to make sense of the world and dominate it (Querejazu 2016). This explicitly draws a separation from man and nature, implying that reality can be observed from afar, that humans do not necessarily exist as part of that reality, and can therefore objectively study and control it as the only rational and autonomous life form (Latour 2009; Zafirovski 2011). Such lines of thinking centered around separation predispose society to numerous dichotomies that propelled further separation between man and nature, mind and body, object and subject, developed and undeveloped, and other dualisms (Querejazu 2016).

Repositioning our ways of being in the world away from the rational, industrial, and functionalist configurations means recognizing the *relational* and nondualist dimensions of life, where

multitude ways of being, learning, and knowing are recognized and celebrated (Escobar 2018). These are the understandings of a pluriverse.

When it comes to science and reason, understandings of the pluriverse can highlight the shortcomings of modernity's tools of world-making. A food forest prospers as an assemblage of different actors, those that are human and non-human. The experience of reality differs for different groups of people, individuals, as well as other species, and so is the knowledge that we gain from these experiences (Querejazu 2016). These experiences are therefore situated within historical and contextual conjectures and embedded within different ways of knowing that do not all rely on objective reasoning (Haraway 1988; Nakata 2002).

Implementing these conceptions into our world means transforming our dominant tools of world-making, such as science, to encompass multitude ways of being in the world. In the context of food forests in the Netherlands, these tools are predominantly accepted by researchers and institutions that shape their development. However, there is an expressed need for a more holistic approach that challenges the way we are conditioned to *do science*.

# Chapter 4

## On How to *Do Science*

Food forests are complex ecological systems, that differ from traditional industrial agriculture in their most basic nature, as was discussed in Part I. During my research, I have engaged in discussions and witnessed in practice the ways through which applications of scientific knowledge within food forests required new approaches in how to *do science*. The post-Enlightenment era and rationalization of culture and Western society has led to the development of the scientific method (Zafirovski 2011), characterized by the step-by-step method of identifying a research question, developing a hypothesis, conducting a series of quantifiable experiments, stating the results, and discussing the outcomes of the research. Starting with the very first step, the scientific method requires rethinking when examined through the lens of food forestry research.

One of the overarching findings presented in this chapter reveals that food forestry entails a different relationship between the researcher and the food forest. This will be examined across two sections – one on the reliance on science within the food forestry movement, and the second on the transition towards implementing the *head, hands* and *heart* within scientific research.

### 4.1 Objective and Rational Knowledge

Within the food forest movement in the Netherlands, the reliance on science and rationality is still persistent in communicating the value of food forest ecologies. Several organizations operating across the country, such as *Voedsel uit het Bos* (Food from the Forest), 4 Returns, Green Deal Food Forests and *Stichting Voedselbosbouw* (Food Forestry Foundation) operate through producing scientific knowledge and data to document and stimulate the progression of food forest projects using citizen science, monitoring systems, and creating databases for information storage. The use of scientific research is instrumental to the success of food forestry projects.

During a working day at the Droevendaal food forest in Wageningen, I witnessed how the extensive knowledge of plant species and cultivars (a plant type bred for specific traits as a variation of the original) is used to determine the design and layout of a young food forest. James, my interlocutor who co-founded and developed the food forest in Droevendaal has shared a vast amount of knowledge that he has spent years accumulating through following the Forest Ecology and Forest Management master's at Wageningen University. His specialty included producing an open-source plant database outlining each one's characteristics through a description of their functions, environmental conditions, successional gradients, ontogenetic variations, and harvest rates to inform the decision-making process of how to design a functional and productive food forest in the Netherlands.

This knowledge and expertise was directly implemented in the food forest we were planting that day. The instructions on which plant species to plant, where to plant it, and how far apart from each other was communicated to the volunteers that day, including myself, to ensure the future growth of a biodiverse, productive, and edible food forest. This was the case in several other food forests I

worked at, including the Eemvallei food forest, a large food forest of 30 hectares that has a succinct design and planting plan. Conversations with project leaders revealed that a few planting schemes have ended in failure due to the lack of knowledge and experience on successful food forest design. Several planted segments of tree samplings have died soon after planting, which put even more pressure on getting the ecological fundamentals right the second time.

The design of a food forest has several recognizable components – a production line is the main food-bearing section of a food forest which often contains fruit and nut trees, a supporting line that supports the productive plants by activating the soil (these plants usually grow fast, produce lots of mulch, and fix nitrogen), an herb layer that secures ground cover and provides weed control. After several years, the food forest might also see more shrubs, perennials, and root plants. Every food forest I visited had these functional sites or had plans for them. The access to botanical and ecological knowledge from food forest owners came from different sources, but every food forest I visited had relied on expert knowledge either directly or indirectly.

*Lekkerlandgoed* was a food forest in Utrecht, an initiative of two biologists who had plenty of expertise on growing edible plants and creating productive ecological systems. It was also the most productive amongst the food forests I have visited throughout my fieldwork. The *EcoVredeGaard* food forest in Arnhem had their own ecological consultant who gave them advice and guidance in how to design their food forest. The family food forest in Nijmegen had several food forest scientists design their food forest and guide their planting days. It can be widely accepted that no food forest can exist without scientific knowledge over the most basic ecological principles of agroforestry.

The access to this knowledge is readily available in the Netherlands through food forestry courses, workshops, tours, and symposiums that are offered by many experts within the field. Simultaneously, principles of science contradicted the workings of food forests systems in practice. For example, while we are used to asking the ecological questions and seeing if the reality can testify to them, food forests and their reliance on natural processes, freedom of existence, and the interactions among thousands of living species, ask us to watch and observe, and *then* ask the questions based on what the food forest reveals to us, rather than presumptuously deciding which questions are to be asked. This deductive form of research can limit our own ability to study the nature of complex phenomena, like food forest, by reducing it to the components we would like to observe (Haraway 1998).

Scientific research across food forests is still novel. Although it is heavily utilized across food forest organization such as *Voedselbosbouw*, *Voedsel uit het Bos* (Food from the Forest), and *4Returns*, the attempts to conduct food forestry research within neutral organizations and institutions continued to be a challenge. At the same time, there is room for new developments on how to implement research practices within food forests through the integration of relational forms of knowledge, which will be the topic of the following section.

## 4.2 Integrating the *Head, Hands, and Heart*

I was in contact with many students of Wageningen University & Research who were interested in carrying out scientific research at the food forest. It is there where I first heard the phrase

*head, hands and heart*. Many had difficulties finding a supervisor for their research thesis topics, as the scope of research significantly deviated from traditional protocols. The main divergence concerned the ability to conduct research in complexity, to return to fundamental science – the approach of pursuing knowledge in the purest forms to comprehend matters we cannot yet explain (Calvert 2006). There is a need for exploratory science, whereas university settings are opted for output-based research questions with a clear outcome in mind. One of my interlocutors, Julian, who is heavily involved in the Droevendaal food forest project, has expressed his frustration with the lack of space within the university to ask those exploratory questions, to innovate new research methods that don't rely on predetermined questions –“the real innovation is that you must have a different mindset, and when you have a different mindset then you also get completely different research questions. And then you can develop a new alternative” [Interview, Julian, 17.03.2022].

An advantage of the scientific method is the universality of research findings, the ability to apply them in comparable contexts to gain the same result. However, applying this algorithm of universality is can be viewed a practice of reductionism, whereby complex and interconnected ecological orders are negotiated into several mechanical counterparts (Haraway 1998). Food forests challenge this narrative by questioning the interchangeable qualities of scientific knowledge. The mindset towards scientific knowledge and rationality has been constantly questioned and challenged through people's practices, thoughts, and imaginations for the future of food forests they associated with.

An important finding of doing multi-sited research is that no food forest system is the same, or even similar, making it impossible to apply knowledge from one system to another. This challenges the already formed systems of informational exchange that exist within the Netherlands in relation to agroforestry. The ability to see non-humans as subjects possessing forms of agency and abilities for interaction rather than objects of science is invocative to new cosmologies of human-nature relations based on reciprocity and inclusivity (Latour 2004; Myers 2018). The objectification and reduction of living, complex ecological systems through attempting to universalize their qualities is a limiting factor to their prosperity. In such ways, the reliance on science can be seen as a disadvantage, which is something that I discussed with Julian:

The moment you try to copy paste [that] into your system, oftentimes you'll see it doesn't work for it, because every situation is so different. So there's something missing there. Something fundamental we're missing. The right pair of glasses to look at these vegetations. I think that there are things in the food forest that science could help explain, but there are also things where science has no role and that's another part of this ideology. It becomes even more complex now because we really want to believe that science can help us with everything here. But I am starting to doubt that more and more. We keep saying there needs to be a new kind of science. But what if that new kind of science is no science?

[Interview, Julian, 17.03.2022]

The alternatives to the objectification of nature through science have emerged within my food forest explorations. Whilst the majority of individuals I have worked with have been to a larger extent acquainted to the disciplines of forest ecology, plant biology, or permaculture studies, otherwise classified as disciplines within the hard sciences, the themes of emotion, subjectivity, creativity and

spirituality have been prominent within many conversations and interactions. These tendencies were interpreted as having transformative qualities under which Western modern thinking was challenged through the manifestations of knowledge as not only being rational, but having affective properties that encompassed emotionality and mysticism (De La Cadena 2010; Querejazu 2016).

When engaging with research participants through interviews and during my focus group, the themes of experiential and embodied learning, relationality and emotional connections to nature surfaced through vulnerable and intimate conversations. The relationality between inner processes within human consciousness and how it translates into the relationship people form with nature was an important topic for exploration. Emma, from *EcoVredeGaard*, has beautifully expressed these processes during our conversation:

There is an emotional connection, and in society most of the time they try to disconnect the emotional aspect. But maybe it would be better if we integrate it in education. You need to build up an emotional connection. That's a basic line I recognize and always look for myself. The feeling you can experience because of the beauty of plants of all sorts of herbs, the animals that are all living, the feeling of fresh air in the early morning. It's a sort of inner process where you experience the greatness.

[Interview, Emma, 13.04.2022]

Human abilities to appreciate nature and its perceived greatness is not a new phenomenon (Soga & Gaston, 2016). However, the ability to do so within a professional academic domain and incorporate these modalities of thought and experience within scientific disciplines have been marginal.

My engagements with researchers, professors, and members of foundations who are expected to rely on logic and rationality as foundations to their position have revealed that the subjective understandings and interpretations of reality were oftentimes interlinked with the objective scientific method. For example, it was interesting to see how these themes emerged through my conversations with academic professors, like Tom, who hold an important stance within scientific research institutions.

Tom has been able to grasp the shortcomings of the strictly scientific approach towards knowledge production. He told me about his teachings of learning the value of using the *head*, *hands*, and *heart* within education. He described this holistic learning method as important towards developing an emotional and reciprocal relationship with non-human life, nature, and the food forest (the use of the heart). While at the same time learning by doing and taking on an active role in the growth of the ecosystem by planting trees, taking care of the soil, designing the landscape (the use of the hands). And lastly, the already accepted processes of producing knowledge through cognition of scientific and natural processes (the use of the head).

Having the chance to speak to several of his students, I found that this philosophy has reached many and had significant value within the food forest in Droevendaal and its development as a research location which defied the rationalistic approaches set forth by the university. Tom explained:

That's what we are taught at the university. The objective. And that has resulted in a lot of knowledge, yes, but it denies you having a subjective relationship with your animal or your plant as

your research subject. That subjective way of doing research also tells you a lot about your topic of research. Maybe as much as the objective way. But that is ignored.

[Interview, Tom, 10.03.2022]

Having access and recognition of such subjectivity in research could be a paradigm shift in what science means to us. As is explained in the quote above, there is a desire within food forest research to design an inclusive scientific method that relies on diverse ways of knowing, the integration of knowledge, practice, and attitude, otherwise described by Tom as the incorporation of your *head, hands, and heart*.

In the following section, these integrations will be examined through the lens of alternative modes of education, such as the development of ecoliteracy programs.

# Chapter 5

## Institutions, Education, and Ecoliteracy

What would the integration of different modalities of learning require of our institutions, our society, and our cultural values? Being in contact with several food forest that are heavily tied to institutions such as universities, research centers and foundations, the systemic levels of constraint in imagining a pluriverse became imminent through my research. The value that is placed on objectivity within our knowledge-generating institutions has been a big challenge for food forest researchers and pioneers, which speaks to their abilities to recognize that knowledge is ‘socially-constructed’, embedded within systems that hold power (Latour 2004). I found a high level of awareness among professors and university employees of how limiting institutions can be to the prosperity of agroforestry in all its forms in the Netherlands. An excerpt from an interview with Robert, the board member of *Voedselbosbouw Stichting* (Food Forest Foundation Netherlands) discussed the need to shape his thinking to align to pragmatic, functionalist models:

In a position like mine, trying to promote food forestry within the context of modern agriculture as in the Netherlands and while feeling a lot of love for nature, you have to be a little bit schizophrenic. You have to be able to to exclude your associations or your emotions a little to survive. I'm quite sensitive sometimes to all kinds of fears and also opinions and etc, but at the same time I can't allow myself to feel those emotions fully all the time, because I won't survive for a week. I have to take a little distance to that. I really try to play the game to a certain extent that they want you to play. And this is the game of the numbers, the calculations, with the reduction of added value to a limited amount of measurable parameters. And yeah, that's the story about food forestry and I am actually quite good at that. I spend a lot of time constructing facts and figures in such a way that it would be attractive for modernists. And at the same time, I want to break out.

[Interview, Robert, 29.04.2022]

The excerpt discloses how certain mode of cognition and expression are favored within the spaces that surround the agroforestry movement in the Netherlands, without which the entire movement could stagnate. However, on a personal level, members of such spaces often feel restricted in accessing and expressing themselves using the tools of the whole human experience – the ability for cognition, emotion, and sensation.

For example, one experience stands out to me in a food forest in Wageningen that I visited every week as a volunteer. This food forest was part of an already established protected forested area in the region. Every week there was a new task at hand – planting new tree samplings, laying out walking paths with wood debris, inoculating fungi into logs, dispersing lava rocks as a soil additive, while other days we spend large parts of the afternoon just lying in the sun or having long lunches together with other volunteers and the owner of the food forest. On one of these days, we had to do some replanting of trees. We spend a lot of time walking through the forest, looking for the trees that needed to be moved. At one point we reached a space within the forest that was shaped as a circle with some empty space in the middle and surrounded by trees on all sides. Maura, the owner of this

food forest has mentioned that this space held some immaterial, energetic value to her when she first explored this area. She has performed a ritual, a *systemic family constellation*<sup>2</sup>, through which her partner embodied the role of the forest spirit and was asked for permission for them to make use of the land. After walking into the space with just the three of us that day, we had an urge to *feel* the presence of the forest. We took about ten minutes of silence to find a space where we could do so. The experience revealed to me the power of inner connectivity that was present among my informer and the food forest, and how amongst all the practical and objective engagements in creating this system, there is also a space for experiences that transcend rational, functionalist behaviors. Julian expressed these ideas during one of our interviews:

This idea of a mentality shift. You tap into your experiential learning, your relational learning, your spirituality. You tap into your emotions, things that can't be rationally explained. To be amazed and in awe and mystified and to just look at the magnificence. It's so much more. It's so much more than any science can understand.

[Interview, Julian, 17.03.2022]

The articulations of such profound and inexplicable experiences were common in my conversations with participants, suggesting that engagements with food forests foster imaginations of a pluriverse, where the dualism of emotion/reason is overcome through *complementarity*, where “opposites complete each other and become whole, one does and cannot exist without the other, only in complementarity an entity becomes total” (Querejazu 2016, 9). Thus, science becomes *one* tool to generate knowledge about the world rather than the dominant one, calling into question the principles of education that shape the ways we produce knowledge. Inspirations for new forms of education for both children and adults are ever-present among numerous academic programs, as well as through personal choices that parents make for their children’s education. Such examples illustrate how food forests can defy reductionist principles towards relational learning and ecoliteracy.

## 5.1 Ecoliteracy

Ecoliteracy has been acquired by human civilizations in the pre-scientific era when relying on knowledge about your natural environment – how to secure food, water, and shelter – was essential to one’s survival (Goleman et al. 2012; Hempel 2014). A vast amount of that experiential knowledge has been lost, as modern cultures learned to use science and technology to secure the abundance of resources through ever-growing markets of products that can be bought to sustain livelihoods. In addition, urbanization, and the rapid diminishing of rural areas where humans live in connection to nature have prompted a prominent disconnection from it, and less motivation to learn from it and protect it (Goleman et al. 2012). Connection to nature can be reignited through ecoliteracy, which calls for a new approach to learning about the natural world incorporating both scientific and visceral learning, otherwise understood as learning beyond the intellect (Hempel 2014).

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<sup>2</sup> A therapeutic exercise that draws upon existential phenomenology by asking participants to represent members of the system to sense out unrecognized dynamics and generational struggles within participants. See <https://journals.sagepub.com/doi/10.1177/1066480706287279>

Ecological literacy is defined as the ability to understand the natural systems that make life on Earth possible by understanding the principles of organization of ecological communities and using those principles to create sustainable human communities (Hempel 2014). This is achieved through active participation in the natural world. It similarly calls for a deep understanding of the soul, of human emotionality as a tool for connection, and the spiritual relations to our environments, all of which can be viewed through the lens of pluriversal existence, or the incorporation of different modes of perceiving and making sense of the world.

Ecoliteracy is often attained through local, place-based knowledge of environments that is a blend of both ecological and emotional intelligence (Assadourian 2017). As was exhibited in the opening vignette of Part II of this thesis, the simple idea of human love towards nature can be the key to developing the desire to protect it. Thus, creating ecoliterate communities can be an integral step towards aiding environmental governance through promoting embodied and cognitive understandings of global interdependency, reciprocity and care between humans and non-humans (Hempel 2014).

Ecoliteracy holds deep respect for the authority of science but recognizes that there are other ways of knowing that can be enlightening in developing a more integrated, holistic approach towards learning about our natural environments, our connections to other living beings, and the intricate cycles that regulate our planet's ability to create life-supporting conditions for millions of species (McBride et al. 2013).

Other ways of knowing can tap into the experiential and emotional dimensions through which one's ability to comprehend the urgency of environmental protection is grounded upon embodied, felt experience, rather than relying on cognitive knowledge of this urgency (Assadourian 2017; Goleman et al. 2012; Hempel 2014). This is arguably a crucial step towards motivating changes in human behavior and enlisting a sense of urgency upon which one can act upon (Goleman et al. 2012). Thus, ecoliteracy presumes that the generation of more 'knowledge' over environmental challenges is not the solution to implementing behavioral and societal changes to tackle these challenges. There is not a knowledge deficit, but rather a *behavior* deficit (Hempel 2014). The gap between acquired knowledge and action is grounded in the ways we acquire knowledge, oftentimes keeping it as an objective realization of facts, rather than the emotional engagement with this knowledge and the urgency it calls for (Goleman et al. 2012).

My research explored two examples of ecoliteracy education among children, which will be explored in the following two sections.

### 5.1.1 Droevendaal Ecoliteracy Program

The Ecoliteracy Program at the Droevendaal food forest has revealed what ecoliteracy can look like in practice and in relation to food forests. It has been realized for several years, but still undergoing further development in its design. It was a project co-created by students and employees from Wageningen University & Research as a program of alternative education for Dutch primary school students. The food forest is the main classroom for the program, acting as an effective space to conduct a multidisciplinary experience and inquiry-based, relational, embodied learning through the

active engagement with nature, culture, and food. The direct outdoor experience is an important tool for ecoliteracy education, where students are invited to actively participate in their natural environment, learn from it and engage with it directly, rather than from within a classroom. During 'lessons', students learn about the complexity of ecological connections within the food forest and learn how to exist within them. There is an emphasis on community building in relation to the local landscape and its embeddedness with larger food systems and society. Creativity is encouraged through various activities that engage students with each other, their teachers, and the landscape (McBride et al. 2013).

I got to know a fellow student of Wageningen University named Sascha, who wrote her thesis on implementing Ecoliteracy courses in Dutch primary schools. She is also involved in the Ecoliteracy program at the Droevendaal food forest. During our interview, we discussed how this program looks like, and what exercises are carried out to serve the goals of implementing experiential education and nature awareness among youngsters:

Students are asked to reflect on what nature means to them. With the facilitators, they follow a route that allows them to re-live the evolution of the Earth, examining the role of humans in this evolution. They explore tools such as fire, what it means to humans in the past and today, and what importance it holds in natural ecosystems. Following this, students envision the food forest ecosystem as a spiderweb full of connections and relationships between different species. They choose a 'creature' that they represent and think of the relationships that it has with other non-humans and people. They embark on an adventure, where they encounter different plants and animals. By scavenging the forest with facilitators, they learn to identify plants that are edible or poisonous to humans and learn how they create homes for insects or animals. In the realm of animals, they learn how to have less of an impact on the environment so that there is space for non-human animals. This is achieved through explorations with the senses. Students are blindfolded and asked to listen to the forest sounds, touch the plants and debris they find on the forest floor and even taste the edible plants that grow there. The use of senses helps students find a way of learning that goes beyond the cognitive understanding of their surrounding environment.

[Interview, Sascha, 01.04.2022]

The exercises mentioned by Sascha have illustrated how ecoliteracy can foster new relationships between young children and nature that practice reciprocity, care, and connection as their grounding principles. Connection is achieved through the active engagement with the natural surrounding using the senses, and knowledge of the functions of different plants and animals is acquired through direct encounters with non-human species (McBride et al. 2013). These encounters serve to develop the sense of care for diverse species and the awareness of their role within an interconnected and alive ecosystem, of which humans are also a part. Although it can be a difficult and arduous process to embark upon Ecoliteracy programs for children, the facilitators of this program have continued to invest their time and energy into serving this purpose.

### 5.1.2 Ecoliteracy in De Lange Ransuil

Ecoliteracy can also be practiced and taught indirectly. While the example of the Ecoliteracy course at the Droevendaal food forest has been exemplary in showing how food forests can aid human-nature awareness, I have also found other formats for such education. I was staying with a family of four for a few weeks during my fieldwork. The family had property, De Lange Ransuil, in a small town in the Netherlands next to the German border. They lived in a medium-sized house on a 10-hectare piece of land, which consisted of a horse paddock, a garden, and a young food forest.

The family welcomed me to stay with them for as long as I wished, and during my stay I got to know them on a personal level by completely immersing myself into their life. The parents, Jon and Hannah, have acquired this house several years ago to enjoy the space to grow their own food, care for their animals, and raise their children. They have two children – a five-year-old Sarah and a six-month old Alex, and Hannah's mother lived in a house adjacent to theirs. In addition to this, they had over 10 horses, a cat and kitten litter, a dog and a puppy litter, a rooster, and several chickens with newborn chicks.

The family had wished to start a food forest on their land to reconnect to nature and raise their children free from the consumptive norms and ideals of Western modernity. For this reason, they purchased a house on the countryside, started growing their own food, and withheld from the spoils of consumer societies. For example, I was lucky to be there for Sarah's birthday, when many family members and friends came over that day and brought gifts and toys for her. Later, her mother Hannah told me that she doesn't enjoy receiving many of the gifts, as they are not necessary, and promote a desire among her children to always want more. Jon was similarly concerned with the products that his children were exposed to. He would only allow wooden toys, no plastic, and most of the time preferred for children to play outside. Every day after he finished his workday, he would take Alex outside for a long walk through the landscape, into the food forest, around the lake. He was deeply inspired by the book series of Vladimir Megre called *Anastasia: The Ringing Cedars of Russia*. During my stay, he gave me a copy to read, which I found greatly illuminating in understanding the choices and practices that they employ upon the themes of child-rearing, nature connections, education and much more.

The book is about Anastasia, a Russian woman living in the Siberian taiga, who is discovered by Vladimir, the author of the book. Although it will never be known what in the story is fiction or fact, the story compels the reader to get to know Anastasia through the eyes of Megre, who is so fascinated by the life of this woman so much he decides to write a book about her and share her worldviews with the public. She lives in harmony with nature, she carries immense amounts of ancient wisdom of the world, of humanity's flaws, of the importance of pureness and love, of care and reciprocity between her and other animals and the environment, and she practices these ideals in everything she does – from child-rearing, to love, to sustenance.

While reading the book of Vladimir Megre, I discovered many parallels between the life of Anastasia and the lives of Jon and Hannah. For instance, Hannah and Charlie have decided to home-school their children, as they do not believe in the education system in the Netherlands to meet their aims in raising ecoliterate students who can expand their consciousness to embody the understandings

of human-nature interconnectivity. They wanted their children to learn from nature by being in it, rather than in a classroom. I have witnessed many manifestations of Anastasia's principles in the conversations and experiences with Jon and Hannah's family, seeing how they created a space in their home to practice ecoliteracy, of which the food forest was one source of inspiration. Below is an excerpt from the book of Vladimir Megre that illustrates Anastasia's understanding of promoting ecoliteracy among children:

The parents go with their three-year-old child to their *dacha* (summer house) and they carry with them his favorite toys to keep him busy. They should not do it. The child could be involved and preoccupied with something more interesting instead of the senseless and even harmful communication with handmade items.

First of all, you can ask him to help you. Only you should do it for real, without kidding and lisp and believe me, he will really help. If you are going to sow, ask him to hold the seeds or rake aside the ground on the bed or put a seed into a hole. While doing it try to comment on your actions explaining to him what you are doing. For example, you may do it this way: "We are going to put the seed into the hole and then cover it with earth. When the sun shines and warms the ground, the seed will get warm and start growing, it will wish to see the sun and a green sprout will come out, just like this one," and at that moment you should show him any new sprout. "If the tiny sprout gets everything it needs, it will become bigger and bigger and eventually it can grow into a tree, just like that or a smaller one. I would like it to bring us a tasty fruit and if you like it, you will enjoy eating it".

Any time when you come to your plot with your child or, in case you are staying there, in the morning when he wakes up, the first thing you should do is suggest that the child checkup whether a new sprout has come out. When you see a newly born sprout express a real joy, get happy. When you are planting tomato seedlings let your child fetch you stems one by one. If by chance he breaks any of them, take the broken one and say: "I think, this one is not going to live, it will not bring us any fruit, it is broken, but, nevertheless, let's try and we'll see. Then plant at least one broken sprout together with the healthy ones.

In a couple of days when you come to the tomato bed again, he will see the healthy stems which had become stronger and the broken one which is fading. Remind the child that it had been broken while planting. Mind, please, at that moment you should not speak to the child in a didactic tone of voice. Speak and treat him as your equal. You should realize on the level of your consciousness that in a certain way he is superior to you. For instance, he is superior in purity of thoughts. A child is an angel and if you manage to comprehend this then later on you would be able to act intuitively. No doubt, he will be the very person who will bring you happiness.

[excerpt from *Anastasia: The Ringing Cedars of Russia* (1996) by Vladimir Megre, 75-76]

The excerpt above is an example of how ecoliteracy can be envisioned. Instead of being a rigid academic program, it is a way of being that can weave into larger educational endeavors. When it comes to child-rearing, Jon and Hannah have incorporated these practices into their daily lives. Not only did they resist the use of handmade, plastic toys for their children, but they strived to educate and rear their children into ecoliterate adults by respecting the superiority and pureness of child consciousness, as described by Anastasia.

In a conversation during dinner, Hannah told me she doesn't like to use gibberish around the children – “it doesn't make sense, why confuse them even further? I always tell them the truth to their questions, and I trust and respect them enough to treat them like I would treat adults” [Informal conversation, Hannah, 22.03.2022]. They recognized the purity that comes along with childhood, and how it can serve as an inspiration for adults. In a conversation with Jon, I understood the value he places on the use of imagination and creativity to come up with solutions to societal problems. The food forest is one of those solutions that he saw fabricating into larger global transformations within agriculture but also human culture, as the food forest serves an important purpose in their family to enable a reconnection to nature.

The activities described are evidence to how education among children and adults can weave into larger understanding of ecological interdependencies and reciprocity between humans and nature. Knowledge is intertwined with embodiment and creativity, to train students to learn how to use their body, senses, and cognition to establish a vital connection to their environment and build upon the desire to protect it.

The aspirations for ecoliteracy are to translate these modes of learning into environmental governance strategies towards a new sustainability framework that connects the worlds of thought, feelings, and action (Hempel 2014). The opportunities to learn from nature through visceral, experiential learning is a promising development towards the pluriverse, where diverse modalities of being and learning are practiced alongside each other. As such, the space for cognitive, emotional, and spiritual conceptions of the world are integrated into the human experience within ecological landscapes of which they are a part of. These experiences are ongoing endeavors into the pluriverse.

## Conclusion

The scope of this thesis depicted the understandings of the pluriverse within the context of neoliberal modernity, specifically how these attributes can be interpreted within food forest systems in the Netherlands. The main question addressed in this thesis is: ‘How are the processes of Western modernity challenged and negotiated through the transgression of dualist ontologies within food forests in the Netherlands?’. To answer this question, the triangulation of empirical research from three anthropological research methods was used to support and blend with conceptual frameworks that illuminated how this question could be understood within scholarly debates on ontological pluralism, nature/culture divisions, and human-nature relations within the neoliberal order.

My involvement as a researcher and active participant in seven food forests has allowed me to grasp the intricate configurations of food forests as emerging agricultural systems in the Netherlands that upon their fundamental purpose challenge the discourse of not only industrial agriculture, but attributes of Western modernity in general. Classified by numerous dualisms and separation, modernity was placed within historical conjunctures and entanglements with neoliberal societal orders that have construed the hyper-separation between humans and nature (Myers 2018; Pacini-Ketchabaw et al. 2016), as well as the marginalization of worldviews and ontologies that exist under the notions of interconnectivity and relationality between humans and non-humans (Kothari et al. 2019; Querejazu 2016).

While food forests continue to operate under the neoliberal orders that shape their development under the parameters of rationality, science, and successful business models, the explorations into people’s inner worlds embedded within these ecological systems have revealed that there is an engagement with other modes of knowing, being and existing within nature. These modalities transgress the principles that fully rely on rational-based knowledge, scientific quantification, and universality. Instead, there is space for emotionality, spirituality, and the appreciation of nature as an extension of our own existence upon which we depend on.

These conceptions are tied to the designs of the pluriverse, through which the ontological plurality of truths, characterized by the “the existence of many worlds somehow interconnected, in other words the human world is connected to the natural world and also to the spiritual world” (Querejazu 2016, 3) is recognized and accepted. The three-fold existence of these worlds has been present within my explorations of food forest systems. The interconnectedness of the human, natural and spiritual worlds has been made apparent through the conversations, experiences, and expressions with research participants. These expressions revealed the importance of emotional connection between humans and nature and the urgency of accessing this connection for ecological literacy and adequate environmental governance that isn’t built upon extractive and exploitative practices towards nature.

The food forest movement has shown promise in reframing modern civilization based upon Escobar’s (2021) framework of the re-communalization of social life, the re-localization of social, economic, and cultural activities and the reintegration with the Earth. By exemplifying the ways through which these premises are supported through empirical research, the larger societal relevance of research into food forests is revealed.

The food forest movement in the Netherlands aspires to transform the agricultural sector, as well as the socio-cultural relationship between the human and natural world through practical implementations of economic localization and the propagation of an ecoliterate population through which principles of care and reciprocity towards nature are attained. For example, the processes and practices that were explored within this research demonstrated new approaches towards knowledge production that did not exhaustively rely on rational objectification of nature and natural processes. Instead, the active engagement of relationality and intersubjectivity between humans and non-humans was experienced by many individuals who were aware and critical of the limitations of the scientific approach and the associated institutive power that determines how knowledge production is conducted, communicated, and shared amongst many educational spaces in the Netherlands.

Thus, the food forest movement propagates new developments within the scientific approach that draws upon the demystification of non-scientific methods such as those that are based upon intuition, visceral and sensorial learning, and spiritual practice. These approaches redesign the modernistic philosophy of science in ways that oppose reductionism and invite the conceptions that natural phenomena cannot be fully understood or explained using a single approach (Haraway 1988).

Further implications would be to practice this recognition across institutions such as universities and primary school that still operate under the neoliberal rhetoric of objectifying nature within many of their disciplines. These practices have been demonstrated within this research through the implementation of Ecoliteracy programs within food forest projects in the Netherlands, revealing new directions and opportunities for redesigning education in conjuncture with the growth of agroforestry in the nation. Further development of such spaces would be the main recommendation of this research, as well as the de-mystification of different ontologies of thought and behavior that already exists within food forest projects but are not yet recognized within larger institutions and foundations.

Future research on the topic could benefit from spending prolonged times with one or more food forest over a longer fieldwork duration. I gathered more nuanced and fuller understandings of people's lives in relation to the food forest when staying with them, living in the same house, and seeing their day-to-day lives. This furthered my understanding of how pluriversal practices solidify in everyday life. Weaving ontology into ethnography is a difficult process and can require more in-depth immersion into research locations. Similarly, spending more time on location could open spaces for multispecies ethnography, where the position of non-human beings as active subjects within the food forest could be expanded upon. The active engagement and immersion into the ecological landscape would have complemented my research by amplifying the voices of non-humans through observations of their behaviors, interactions, and relations to humans (Hartigan 2019). While this was my initial approach, I quickly discovered the difficulties I faced in applying these methodologies into my research when only having limited access to food forests as research locations.

To conclude, the placement of food forests within Dutch modern culture and economy has strongly shaped their development and has continued to solidify the value of successful economic output models and quantifiable measures of success through the scientific method. At the same time, the food forest movement can contest the principles of modernity by inviting designs for a pluriverse,

where current ontologies of separation and modernism are reconfigured towards pluriversal modes of being in the world.

These attributes are characterized by the interactions between human, natural and spiritual worlds that redesign practices such as how to *do science*, how to relate emotionally to the natural world and how to reintegrate the commons into society. Thus, the food forest invites new cosmologies between the inner and outer worlds of humans and serve as a space where reintegration with the Earth could be attempted.

## Works Cited

- Adams, Glenn, Sara Estrada-Villalta, Daniel Sullivan, and Hazel Rose Markus. 2019. "The Psychology of Neoliberalism and the Neoliberalism of Psychology: Neoliberalism of Psychology." *Journal of Social Issues* 75 (1): 189–216.
- Albrecht, Stefanie, and Arnim Wiek. 2021a. "Food Forests: Their Services and Sustainability." *Journal of Agriculture, Food Systems, and Community Development*, July, 1–15.
- Altieri, Miguel A. 1998. "Ecological Impacts of Industrial Agriculture and the Possibilities for Truly Sustainable Farming." *Monthly Review* 50, no. 3: 60.
- Blaser, Mario. 2013. *Un Relato de La Globalización Desde El Chaco*. Al-Qantara. Vol. XIX. Popayán: Editorial Universidad del Cauca.
- Boyd, Robert, and Peter J Richerson. n.d. "Solving the Puzzle of Human Cooperation," 27.
- Busch, Lawrence. 2010. "Can Fairy Tales Come True? The Surprising Story of Neoliberalism and World Agriculture: Neoliberalism and World Agriculture." *Sociologia Ruralis* 50 (4): 331–51.
- Büscher, Bram, and Robert Fletcher. 2019. "Towards Convivial Conservation." *Conservation and Society* 17 (3): 283.
- Cadena, Marisol de la. 2010. "INDIGENOUS COSMOPOLITICS IN THE ANDES: Conceptual Reflections beyond 'Politics.'" *Cultural Anthropology* 25 (2): 334–70.
- Cadena, Marisol de la, and Mario Blaser, eds. 2018. *A World of Many Worlds*. Durham: Duke University Press.
- Cadena Marisol de la, Mario Blaser, and Isabelle Stengers. 2018. "THE CHALLENGE OF ONTOLOGICAL POLITICS." Chapter. In *A World of Many Worlds*. Durham: Duke University Press. 83-111
- Calvert, Jane. 2006. "What's Special about Basic Research?" *Science, Technology, & Human Values* 31 (2): 199–220.
- Conway, Janet, and Jakeet Singh. 2011. "Radical Democracy in Global Perspective: Notes from the Pluriverse." *Third World Quarterly* 32 (4): 689–706.

- Dagar, Jagdish Chander, and Vindhya Prasad Tewari, eds. 2017. *Agroforestry*. Singapore: Springer Singapore.
- Denshire, Sally. 2017. "On Auto-Ethnography," 831-846.
- Escobar, Arturo. 2018. *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*. New Ecologies for the Twenty-First Century. Durham: Duke University press.
- . 2021. "Reframing Civilization(s): From Critique to Transitions." *Globalizations*, November, 1–18.
- Goleman, Daniel, Lisa Bennett, and Zenobia Barlow. 2012. *Ecoliterate : How Educators Are Cultivating Emotional, Social, and Ecological Intelligence*. San Francisco: Jossey-Bass.
- Groot, Eva de, and Esther Veen. 2017. "Food Forests: An Upcoming," no. 33: 3.
- Hammersley, Martyn, and Paul Atkinson. 2019. *Ethnography : Principles in Practice* Fourth ed. Abingdon, Oxon: Routledge.
- Haraway, Donna. 2010a. "When Species Meet : Staying with the Trouble." *Environment and Planning D: Society and Space* 28 (1): 53–55.
- . 2015. "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin." *Environmental Humanities* 6 (1): 159–65.
- . 1988. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." 575-599.
- Hartigan, John. 2019. "Plants as Ethnographic Subjects." *Anthropology Today* 35 (2): 1–2.
- Harvey, David. 2005. "Uneven Geographical Developments." In *A Brief History of Neoliberalism*, by David Harvey. Oxford University Press.
- Hempel, M. 2014. *Ecoliteracy: Knowledge Is Not Enough*. In: *State of the World*. State of the World. Island Press, Washington, DC. [https://doi.org/10.5822/978-1-61091-542-7\\_4](https://doi.org/10.5822/978-1-61091-542-7_4)
- Horrigan, Leo, Robert S Lawrence, and Polly Walker. 2002. "How Sustainable Agriculture Can Address the Environmental and Human Health Harms of Industrial Agriculture." *Environmental Health Perspectives* 110 (5): 445–56.
- Jose, Shibu. 2009. "Agroforestry for Ecosystem Services and Environmental Benefits: An Overview." *Agroforestry Systems* 76 (1): 1–10.

- Kothari, Ashish, Ariel Salleh, Arturo Escobar, Federico Demaria, and Alberto Acosta. n.d. "Finding Pluriversal Paths," 21.
- Kotz, David M. 2002. "Globalization and Neoliberalism." *Rethinking Marxism* 14 (2): 64–79.
- Latour, Bruno. 2004a. *Politics of Nature: How to Bring the Sciences into Democracy*. Cambridge, Mass. London: Harvard University Press.
- . 2007b. *Reassembling the Social: An Introduction to Actor-Network-Theory*. 1. publ. in pbk. Clarendon Lectures in Management Studies. Oxford: Oxford Univ. Press.
- . 2009c. *Politics of Nature*. Translated by Catherine Porter. Harvard University Press.
- McBride, B. B., C. A. Brewer, A. R. Berkowitz, and W. T. Borrie. 2013. "Environmental Literacy, Ecological Literacy, Ecoliteracy: What Do We Mean and How Did We Get Here?" *Ecosphere* 4 (5): 1–20.
- McCarthy, James, and Scott Prudham. 2004. "Neoliberal Nature and the Nature of Neoliberalism." *Geoforum* 35 (3): 275–83.
- McKittrick, Meredith, and Erin Mauldin. 2015 "Industrial Agriculture." Chapter. In *A Companion to Global Environmental History*, edited by J.R. McNeill, Chichester, West Sussex, UK ; Malden, MA : Wiley Blackwell: 43–78.
- Mintz, Sidney W., and Christine M. Du Bois. 2002. "The Anthropology of Food and Eating." *Annual Review of Anthropology* 31 (1): 99–119.
- Mishra, Lokanath. 2016. "Focus Group Discussion in Qualitative Research." *TechnoLearn: An International Journal of Educational Technology* 6 (1): 1.
- DeWalt, Kathleen Musante, and Billie R DeWalt. 2011. *Participant Observation : A Guide for Fieldworkers* (version Second edition.) Second ed. Lanham, Maryland: Altamira Press, a division of Rowman & Littlefield
- Myers, Natasha. 2015. "Conversations on Plant Sensing," 32.
- . 2018. "How to Grow Liveable Worlds" *The World to Come: Art in the Age of the Anthropocene*: 53-63
- Nair, P. K. Ramachandran. 1993. *An Introduction to Agroforestry*. Dordrecht: Kluwer Acad. Publ.
- Nakata, Martin. 2002. "Indigenous Knowledge and the Cultural Interface: Underlying Issues at the Intersection of Knowledge and Information Systems." *IFLA Journal* 28 (5–6): 281–91.

- Naylor, Simon. 2000. "Spacing the Can: Empire, Modernity, and the Globalisation of Food." *Environment and Planning A: Economy and Space* 32 (9): 1625–39.
- Ogden, Laura A., Billy Hall, and Kimiko Tanita. 2013. "Animals, Plants, People, and Things: A Review of Multispecies Ethnography." *Environment and Society* 4 (1).
- Oosterbaan, A., and A. T. Kuiters. 2008. "Agroforestry in the Netherlands." In *Agroforestry in Europe*, edited by Antonio Rigueiro-Rodríguez, Jim McAdam, and Maróa Rosa Mosquera-Losada, 6:331–41. *Advances in Agroforestry*. Dordrecht: Springer Netherlands.
- Pacini-Ketchabaw, Veronica, Affrica Taylor, and Mindy Blaise. 2016a. "Decentring the Human in Multispecies Ethnographies." In *Posthuman Research Practices in Education*, edited by Carol A. Taylor and Christina Hughes, 149–67. London: Palgrave Macmillan UK.
- Parks, Bradley C, and J Timmons Roberts. 2008. "Inequality and the Global Climate Regime: Breaking the North-South Impasse." *Cambridge Review of International Affairs* 21 (4): 621–48.
- Patel, Raj, and Jason W. Moore. 2018. *A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature, and the Future of the Planet*. Carlton, Vic.: A History of the World in 7 Cheap Things.
- Querejazu, Amaya. 2016. "Encountering the Pluriverse: Looking for Alternatives in Other Worlds." *Revista Brasileira de Política Internacional* 59 (2).
- Simons, Massimiliano and Philosophy Documentation Center. 2017. "The Parliament of Things and the Anthropocene: How to Listen to 'Quasi-Objects.'" *Techné: Research in Philosophy and Technology* 21 (2): 150–74.
- Soga, Masashi, and Kevin J Gaston. 2016. "Extinction of Experience: The Loss of Human-Nature Interactions." *Frontiers in Ecology and the Environment* 14 (2): 94–101.
- Sollen-Norrlin, Maya, Bhim Bahadur Ghaley, and Naomi Laura Jane Rintoul. 2020. "Agroforestry Benefits and Challenges for Adoption in Europe and Beyond." *Sustainability* 12 (17): 7001.
- Stock, Paul V., Jérémie Forney, Steven B. Emery, and Hannah Wittman. 2014. "Neoliberal Natures on the Farm: Farmer Autonomy and Cooperation in Comparative Perspective." *Journal of Rural Studies* 36 (October): 411–22.

- Stone, Christopher D. and Center for Environmental Philosophy, The University of North Texas. 1988. "Moral Pluralism and the Course of Environmental Ethics:" *Environmental Ethics* 10 (2): 139–54.
- Trill, B. 1997. "Globalisation in the Food Industries?" *European Review of Agricultural Economics* 24 (3–4): 390–410.
- Tuck, Eve, and K Wayne Yang. n.d. "Decolonization Is Not a Metaphor," 40.
- Worldwatch Institute. 2017. *Earthed : Rethinking Education on a Changing Planet*. Edited by Erik Assadourian and Lisa Mastny. State of the World. Washington, DC: Island Press.  
<https://doi.org/10.5822/978-1-61091-843-5>.
- Zafirovski, Milan. 2011. *The Enlightenment and Its Effects on Modern Society*. New York, NY: Springer New York.