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Publication Date

2022

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

Santa Barbara

Cracks in the Concrete: Urban Multispecies Justice at the Isla Vista Food Forest

A Thesis submitted in partial satisfaction of the
requirements for the degree Master of Arts
in Sociology

by

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December 2022

ACKNOWLEDGEMENTS

This work is a collaborative work. It is shot through with others' minds and intelligences, written by reflection on interactions and by interaction of reflections—with very special humans as well as with land, plants, and beings of great diversity.

I acknowledge the Chumash people who are the historical and traditional stewards of the Anisq'Oyo land, currently called Isla Vista, where this work is based. I am grateful for the opportunity to contribute to the reparation of the ecology of the land about which I write.

I thank David Pellow, chair of my committee, for taking my project and me under his sophisticated wing of struggles and thought for socio-ecological justice, and for the lively guidance to my thinking. I thank John Foran, co-chair, for enthusiastically embracing my ideas, welcoming me to Santa Barbara, and offering his unsparing support to me and to the food forest that is the heart of this work. I thank Summer Gray for the insight and inspiration from her unique way to think, sensible and elaborate, which I hope this thesis echoes. I thank Liz Carlisle, who enriched my work and life with her blend of intellectual sharpness and intimacy with the land and its caretakers. I thank Kevin Anderson for the encouragement and alliance to think with theory, instilling me with his interest in and commitment to critical thought. Besides this wonderful committee, I am appreciative of the generous support and guidance I received from many other faculty members and departmental staff.

I am deeply grateful to Tony Barbero, “king of the forest,” as I call him, for his participation in this research, and for the knowledge and love he continuously invests to give ground to the Isla Vista Food Forest—home of our collaboration, our friendship, and

numerous fruits, butterflies and visions we have collected there together. I am grateful to Ash Valenti and Katie Murray, co-founders of the food forest, for their dedication to plants and communities, at the food forest and elsewhere, constantly working to expand justice, and for all I learned from them. I thank Amanda Andersen, Elvia Cruz, and Neal Singh for their partnership and intelligence offered to the food forest. I smile with gratitude as I name Lizzy Privitera and Kelsey Dowdy, dear friends, distinct minds, partners in food foresting, and collaborators in doing research worldwide as we seek to advance socio-ecological justice while having lots of fun.

I am grateful to all other humans, institutions, pollinators, fungi, worms, and beings of all sorts who at some point contributed to the sustenance of the Isla Vista Food Forest.

I want to thank my beloved family, my mom Avital, my dad Pablo, my brother Tom, my aunt Galia, my relatives, and my chosen sister Vanessa for solid, consistent love and support. I thank all my good friends for the joy and wisdom they bring me so that I am able to overcome challenges and share celebration.

I am thankful for the privilege of receiving a Fulbright fellowship to undertake this work. This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES) – Finance Code 001.

Within such an abundant network I am able to offer this work as a part of my commitment to community, reciprocity and complementarity within the web of life.

ABSTRACT

Cracks in the Concrete: Urban Multispecies Justice at the Isla Vista Food Forest (CA)

by

Noa Cykman

This work discusses urban food forests as an emergent solution for ecological and social challenges faced in a time of climate crisis, particularly in the context of cities. The study is based on participatory action and ethnographic research of the Isla Vista Food Forest, in Santa Barbara (California, US). A food forest is a traditional agricultural practice that mimics a natural forestial ecosystem, producing food for humans while favoring multiple life forms and enhancing the ecosystem as a whole. Prior research has suggested that food forests are a sustainable, beneficial practice within urban areas. However, this emergent literature is yet to explore in more detail how these initiatives mobilize, and how they may re-signify, cities' social and ecological relationships. Relying on fieldwork and on an interdisciplinary theoretical framework around multispecies studies, I look into how human and more-than-human relationships are built within the context of community action for the establishment of an urban food forest. As an organizer with the IV Food Forest, I demonstrate firsthand experience with the maintenance of a food forest in terms of social collaborations, development of ecological knowledge and sensitivity, and mundane challenges in operating in urban space. As a central import, the IV Food Forest points in the

direction of an ecological city that, beyond “sustainable,” is multispecies and regenerative. The study contributes to the fields of relational, urban, and environmental sociology from a multispecies perspective, as well as to the discussions in environmental humanities and urban planning.

TABLE OF CONTENTS

I. Introduction	1
II. Concrete, Cracks, and Plants	4
A. Concrete Problems: Cities for Humans	6
B. Cracks in the Concrete: The Juncture of the Anthropocene	9
C. Plants Through the Cracks: Food Forests and the Multispecies City	13
III. Methodology	18
IV. Results: Into the Isla Vista Food Forest	23
A. A Brief Overview of Isla Vista’s Socio-Historical and Ecological Context	24
B. Isla Vista Food Forest: Aiming at Urban Multispecies Justice	27
C. Becoming with the Forest: An Ethnography of Belonging	35
V. Concluding Remarks	52
References.....	57

LIST OF FIGURES

Figure 1. Location of the Isla Vista Food Forest: Isla Vista, Santa Barbara County, California, USA	25
Figure 2. During a volunteer day, a group of students is planting a <i>Ceanothus (California lilcas</i> , a native shrub).....	29
Figure 3. Narrow-leaf milkweed meadow and a Monarch butterfly at the IV Food Forest...	39
Figure 4. January 2021, land of the food forest before it started	49
Figure 5. June 2022, Welcome to the food forest.	49
Figure 6. On the right, sample of soil from the food forest. On the left, sample of adjacent soil.....	51

I. Introduction

We are not in the world; we become with the world.

—Gilles Deleuze & Félix Guattari

Within an escalating climate crisis and continuous urbanization, measures to achieve ecologically regenerative cities are urgent. Urban farms, and urban agroecology in particular, including food forests, are among the responses rising since the 2000s. More than just food, urban agroecology brings nature—biodiversity, ecological succession, regeneration of soil, and other ecological benefits—into what has been conceived as exclusively human: the city.¹ Therefore, these socio-ecological practices are relevant cases to problematize conventional divisions of culture/nature and city/countryside that have shaped Western thought and history, and demonstrate possibilities for overcoming them. As those divisions have contributed to the fragmentation of ecological webs, causing ongoing harm to life and its conditions, overcoming them is necessary in order to heal these wounds.²

In this work, I will discuss the potentials and challenges of a particular case in Isla Vista (IV), California, where an agroecological food forest is being planted. The project is carried out by the Isla Vista Food Forest collective, a student and community-led project that emerged out of the Eco Vista collective, in collaboration with the Isla Vista Recreation and

¹ Thinkers from classic Greek philosophers to iconic urbanist Jane Jacobs have spoken of cities as destined to human ends (Alagona 2022).

² The modern form of these binaries has established a sense of negative difference and hierarchy between the poles, forming a central structure to the modern form of multiple oppressions, including that of nature (Plumwood 2003).

Parks District (IVRPD), an institution in charge of managing the local public green spaces. The Isla Vista Food Forest is a pilot and innovative initiative, with kindred experiences around the world.³ The research is based on ethnographic and participatory-action research carried out through the course of eighteen months (May 2021 to October 2022).

I became involved with the Isla Vista Food Forest in May 2021 as a volunteer, and became the leading organizer of its activities in August 2021 (coordinating the core group, promoting monthly volunteer days, mediating communication with the local authority and other organizations, and other tasks). Through fieldwork combined with sociological and interdisciplinary theoretical frameworks, I seek to answer the questions: How and why are humans and multispecies actors collaborating at the food forest in Isla Vista? How do these human and multispecies connections get established, what challenges to they encounter, and why are they important for the regeneration of urban ecosystems? As leading questions: Who are the actors collaborating to plant the food forest? How are human relationships and organizations mobilized for the promotion of ecosystemic relationships (e.g. contracts, affect, trust, legislation, etc.)? What more-than-human collaborations are mobilized?

I aim to follow the emergence of an urban food forest by documenting my own experiences in shaping and being shaped by that project, looking at how synergies and tensions take shape, among human communities and beyond humans. With this, my

³ The growing spread of urban food forests across the globe since the 2000s resembles a rhizome network. They have reached all continents, sharing similar motivations, achievements, challenges, and objectives, even if they have particularities of history and structure, and are not directly connected with each other. I have personally visited and interviewed leaders of the Picasso Food Forest (Parma, Italy), Parco Nord (Milano, Italy), Cascinet Food Forest (Milano, Italy), Campolide Food Forest (Lisbon, Portugal), Tel Aviv Food Forest (Israel), and Kiryat Ono Food Forest (Israel).

intention is to document a concrete alternative that strives to build a positive response to the climate and ecological crises. In this research, I find the motivations and the main obstacles that people face in seeking to create multispecies sustainable cities, as well as build the literature on agroecology and thereby contribute to the solutions that will help prefigure and manifest socio-ecological justice.⁴ I argue that urban food forests offer a model of an inclusive, complex, and multifunctional solution for current social and ecological challenges; they are sustained by a combination of different social sectors, and point toward an eco-city built by multispecies agency.

In what follows, I: 1) weave a review of relevant literature connecting cities, multispecies justice, and food forests, based on relational urban sociology and environmental humanities; 2) present the methodology and the case; 3) narrate the case of the Isla Vista Food Forest, based on a “multispecies auto-ethnography” and complementary interviews; 4) reflect on the accomplishments, challenges, and potentials perceived at the Isla Vista Food Forest.

⁴ Socio-ecological justice reflects the interconnectedness of all living things, including humans, and the equal right of all to live without ecological destruction (Yaka 2019). I will refer to this concept as inclusive of climate justice, food justice, and multispecies justice.

II. Concrete, Cracks, and Plants

In order to rethink the dominant structures of human life towards regenerative ways of life, it is necessary to problematize assumptions related to the binaries that have kept, on a conceptual level as well as on a pragmatic level, humans apart from nature, and forests outside of cities. This abstract detachment fails to recognize human-ecosystem interdependence and biophysical limits, thus hindering the development of appropriate responses to the problems that the fragmentation of those webs has caused. Discussions on multispecies entanglements and more-than-human ethics have been rising in neighboring disciplines, such as anthropology, geography, and philosophy, yet remain underexplored in the sociological field. This absence echoes the antithetical position of society to nature in the origins of the discipline (Catton and Dunlap 1980; Macnaghten and Urry 1995).

Sociology as a science emerged along with the rise of industrial capitalism in Europe and North America in the nineteenth century, heavily influenced by human exceptionalism (Macnaghten and Urry 1995). Émile Durkheim's intention to carve sociology as a distinct "social" realm came out of an antithetical separation from the natural sciences and their objects of study, i.e. nature and its entities, leaving the latter a marginal, if not invisible, place as an object in social theory. Sociology thus specialized in the study of modern societies as a sphere independent from non-human existences and ecological interconnectedness.

Since the 1980's, a paradigmatic shift has increased sociology's interest in ecological matters, and the field now nests diverse theories on society-nature relations (e.g.

environmental sociology, posthumanism, political ecology, ecofeminism, etc.)⁵, however the calls for a paradigm that would account for human-ecosystem interdependence (Pellow and Brehm 2013) and an ecological sociology (Goldman and Schurman 2000) remain largely unfulfilled (Kasper 2016). Studies on regenerative agriculture and urban farming are expanding in parallel, and bridges between these practices and those theories are still emergent. Therefore I will engage with the environmental humanities and qualitative social sciences, particularly drawing on critical theories of the Anthropocene and posthumanist theories of multispecies relationships.

Critical theories of the Anthropocene point out that the unfolding anthropogenic ecological crises are a cause for revising dualist conceptions that think of humans as separate from nature, and looking into the integrated realities they reveal (Anna Tsing et al. 2017; de la Cadena 2019; Chakrabarty 2009). Critical posthumanism, including multispecies frameworks, attend to the inextricable imbrications of multiple life forms and livelihoods that co-constitute human life and sociality (Braidotti 2019; Haraway 2008, 2016). Reading urban food forests through theories that blur the human/nature dichotomy, I intend to

⁵ Also Gabriel Tarde (2015[1983]), at the origins of the sociological discipline, proposed a “universal sociology” as an alternative to Durkheim’s “anthropocentric prejudices” that finally won and established the field’s paradigm. In Tarde’s “universal sociology” the universe is understood as a continuum in which humans, nature, and things are ontologically connected. Society should thus be analyzed without differentiating humans from the rest of the entities that populate the universe. From such perspective, any association between any forms of beings could be considered a “social relationship.” The very concept of society is enlarged or dissolved: while for Durkheim social facts are specific to human society, for Tarde grossly any phenomenon in nature, whether including or humans or not, could be thought of as a social fact. While Durkheim sought objectivity and studied social facts as things, Tarde saw everyone and everything as subjects. The return of Tarde’s contribution has been strengthened as a part of relational sociology, especially by the Action-Network Theory developed by Bruno Latour (2007), and post-structuralist strands of thought.

participate in overcoming the historical isolation of humans in the sociological field, rarely depicted as inhabitants of a planet and members of an ecosystem. Moving towards an ecological paradigm in sociology may help to better assess the pressing climate and ecological crises, and to investigate and support possible solutions.

A. Concrete Problems: Cities for Humans

The Metropolis strives to reach a mythical point where the world is completely fabricated by man⁶, so that it absolutely coincides with his desires. The Metropolis is an addictive machine, from which there is no escape, unless it offers that too... Through this pervasiveness, its existence has become like the Nature it has replaced: taken for granted, almost invisible, certainly indescribable.

—Rem Koolhaas

Cities are the hotspot of the future: they nest the largest portion of humans on Earth, and are responsible for an accentuated concentration of activities contributing to the climate crisis, including 70% of the world's greenhouse gases emissions, and two thirds of the world's energy consumption (UN 2015). Urbanization is currently one of the primary drivers of biodiversity loss around the world (IPBES 2019). Planetary urbanization is a central characteristic of the twenty-first century, and of what has been prospectively called an “urban millennium” (Angelo and Wachsmuth 2015)—with significant losses and dangers associated with ecological damage. Broadly,

Sustaining the well-being of urban populations requires a constant and growing stream of natural resources imported from rural areas, as well as the natural areas required to process the waste that cities generate. Ecological footprint analyses document that this may require non-urban land hundreds of times larger than the area of the city itself. (Clark and Nicholas 2013:2).

⁶ Presumably relatable to the gender this word specifies.

Historically, urban planning has striven for the implementation of a territory ruled by human technological mastery, to which nature is simply raw material (Houston et al. 2018). The theories that sustain mainstream urban planning are undergirded by an “urban exceptionalism,” a symptom of ontological human exceptionalism (Houston et al. 2018), which denies ecological connectivity, multispecies entanglements, and the co-production of urban worlds.

Facing escalating risks and losses associated with climatic and ecological crises, scientists and governmental institutions agree that cities must be geared towards becoming sustainable ecosystems. The United Nations Environment Program (UNEP), for instance, declared that “The key to sustainability lies in the concept of ‘green cities’ or ‘eco cities’” (UNEP, 2012). “If more than half of the world is now urban, hopes for its future must rest on the shoulders of the green, sustainable city,” say Angelo and Wachsmuth (2014:372). According to Angelo and Wachsmuth (2014), developing more convincing and robust sustainable city models has been one of the most significant intellectual challenges and research endeavors for decades. Sustainable urbanism and “eco-cities” have been a focus of policymakers and various fields of knowledge since the 1980s (Angelo and Wachsmuth 2020), and the concept of “smart cities” or “climate-smart cities” has been called the “new paradigm” of intelligent urban development and sustainable socio-economic growth (Neirrotti et al. 2014:3).⁷ In the 1990s, the agenda of urban sustainability began to gain traction in the international community, following Agenda 21 (Deelstra and Girardet 2000).

⁷ According to these strands, compact city and eco-city are the most prevalent models of sustainable city (Neirrotti et al. 2014).

The ways towards “sustainability” are, however, divided. The contemporary widespread attempts at developing “sustainable cities” and “smart cities” are hegemonically oriented by an institutional emphasis on growth and efficiency, rather than by equitable and eco-sensitive goals (Houston et al. 2018). In the context of neoliberal forms of governance these methods of risk management normally collapse uneven geographies and eco-social complexity into bench-marks and technical fixes (Rogers 2013), reflecting the anthropocentric culture in which they arise—the modern paradigm of human exceptionalism and progress as technological mastery (Missirolli 2022; Plumwood 2003).

Even in urban planning that considers ecological connectivities, proposals often fall into a “paradox of management” that privileges human “command and control” rather than adaptive practices grounded in the recognition of multispecies entanglements (Garrard and Bekessy 2014). According to Houston et al. (2016:260), “The discursive segregation of social and ecological concerns from the environmental/economic imperatives of the climate change crisis impede action toward sustainable and just urban futures.”

A “sustainable” city therefore may not suffice for a target. Instead, an inhabitable world calls for *regenerative* cities produced by and for multispecies communities, in order to actively contribute towards ecological prosperity for bioculturally diverse populations.⁸ “On a planet where urban life is driving planetary change and is conditioned by it, re-enchanting

⁸ *Regeneration* can be broadly defined as centering life in practices and decisions in order to repair, recover, and further build the interconnectedness of human society and the ecology, relying on reverence, respect, and compassion (Hawken 2021), and connecting these regenerative practices to the struggle for human liberation (Carlisle 2022). Urban regeneration, specifically, is concerned with advancing the resolution of urban problems (social, economic, ecological, material, etc.) in a comprehensive and integrative way (Roberts 2000), however actual policies are often limited by anthropocentric and technocratic perspectives, as above-mentioned.

urban connectivities through multispecies relationships is a vital component of refiguring rights to the city and finding ethical, just and inclusive forms of urban planning.” (Houston et al. 2016:197). Rather than “a territory of enlightened human value and technological mastery,” a just and inclusive city should include fauna and flora as part of its life and spirit, “as vital to ideals of what the city ought to be and as lively and sentient participants in the co-production and planning of urban spaces” (Houston et al. 2016:192). That means changing the ways in which humans perceive and relate to other beings—animals, plants, rivers, non-organic, etc. “We are after all but one species among many inhabiting diverse urban worlds ... and any presumed exclusive human ‘right to the city’ and the biosphere is increasingly untenable” (Houston et al. 2018:191).

B. Cracks in the Concrete: The Juncture of the Anthropocene

The contradictory lesson of the Anthropocene, an era of human influence, is the realization of the multiagency world in which humanity belongs: one impacts and is impacted by myriad others (Anna Tsing et al. 2017; de la Cadena 2019; Chakrabarty 2009).

As critical theories of the Anthropocene note, this era poses a limit to the dualist understandings of human-nature relationships, particularly those relationships that perpetuate the idea of human separation from the complex biophysical worlds that we inhabit (Davison 2015; Paolo Missirolli 2022). Ecological sensitivity becomes an urgent need and a political priority. What responses to the climate crisis can we develop from a standpoint that is not modern, progressist, and technocratic, but decolonial, inclusive, and integrative?

Houston et al. (2018:198) call for urban planners and scholars interested in place making to “think carefully and critically about who speaks for (and with) the nonhuman,” and suggest multispecies entanglements and becoming-world as characteristics of the Anthropocene to orient fruitful directions for theory and planning. Becoming-world is a posthuman form of ethical and political interaction that considers the positivity of difference and the productivity of encounter (Braidotti 2013). In other words, it is about collaboration across heterogeneity, and both the inevitability and the richness of it.

Relatedly, Houston et al. (2016) advocate for counter-hegemonic praxes that enable us to transform our engagement with the climate crisis from a cosmopolitical perspective, i.e. one in which more-than-human relations, stories, politics, and practices, as constellations of diverse inhabitations, “connect to destabilize the hegemony of technocratic responses to climate change” (Houston et al. 2016:261). In line with such critiques, recent research on the material and ethical-political dimensions of the (co)production of “urban natures” and “urban political ecologies” has challenged the nature/culture dualism that marks urban spatial orderings, arguing instead for modes of urban politics, governance and practice that extend beyond the human (Braun 2005; Heynen, Kaika, and Swyngedouw 2006; Houston et al. 2018).

In the social sciences, post-structuralist and decolonial strands of thought taking part in the more-than-human turn offer new vocabularies and methodologies to look into the complex compositions of societies and of cities, which assemble multiple species, natural forces, objects, discourse, and more. Bruno Latour (2007), building on the sociological strand initiated by Gabriel Tarde (considered defeated by Émile Durkheim at the foundation

of sociology as a discipline) developed the Action-Network Theory (ANT) to attend to the non-human and more-than-human elements of social life. Latour's approach considers the inherently hybrid nature of reality, i.e., with no effective separation between subjects and objects—even without an actual inherent existence of each pole as such, despite this separation being used as a presupposition in modern science.

Isabelle Stengers proposed the concept of “cosmopolitics” (to which Houston et al. [2016] refer) to extend the realm of politics beyond a limited citizenry of polis, instead including everyone and everything in the cosmos (citizen, non-citizen; human, non-human; conscious, nonconscious), leaving “no-one unaffected” (Stengers 2005: 1002) and inviting us to “think in the presence of.” Donna Haraway (2016) invites multispecies justice, “oddkin,” and hot compost piles as figures for fruitfully dealing with the present; ways to “stay with the trouble” by being truly present, “not as a vanishing pivot between awful or edenic pasts and apocalyptic or salvific futures, but as mortal critters entwined in myriad unfurnished configurations of places, times, matters, meanings” (Haraway 2016:1).

Likewise, Anna Tsing et al. (2017) ponder the ghosts and monsters haunting the Anthropocene, “a time when survival teeters on a question stirring in the marrow of the Earth's bones” (Anna Tsing et al. 2017:12), and call us to “to pay better attention to overlaid arrangements of human and nonhuman living spaces” (Tsing et al., 2017:1), in order to escape the growing deviance that forgetfulness and progress combine to generate. As a last example, Eduardo Kohn (2013) learned with the Amazonian Runa people the path of the forest as the locus to expand human thought and communication. The forest invites humans

to commune with nature, suggesting the Earth and its multiple realms—other animals, plants, spirits, dreams—as a seed for a (more-than-)human future.

These strands of thought have influenced the history and current state of relational sociology, and other sociological subfields (Pyyhtinen 2016; Sampson 2019; Tarde 2015). Some scholars in urban sociology have started to use these perspectives as bases for thinking of cities as socio-natural phenomena (Angelo and Wachsmuth 2020), and places made by and for networks or *assemblages* of multiple beings, beyond humans—which impacts both theoretical and methodological undertakings (Fariás and Bender 2009; Franklin 2017).

The field of Urban Political Ecology, as a neo-Marxian lens to the analysis of urban environmental change, has worked to destabilize the city/nature conceptual division by combining ecological thinking, political economy, urban studies, and critical social and cultural theory (Gandy 2022). This field also hosts more-than-human thinkers who give other beings (microbes, water, etc.) particular attention (Tzaninis et al. 2021). Taking more-than-human agents seriously, Gandy (2022:27) notes that “although the Lefebvrian ‘right to the city’ has been elaborated within political ecology to encompass the ‘right to nature’, we hear little about the ‘right of nature’ to the city.”

These bodies of theory align with Indigenous cosmovisions and decolonial theory in as much as they seek to converge subject and object, human and nature, and even past and future, into blended multiplicities.

As Bryan Kamaoli Kuwada said, referring to Hawaiian futurism:

Maybe restoring traditional agricultural sites and practices sound like nothing more than our stubborn Stone Age beliefs. Yet why must our futures only be filled with sleek spaceships, terraforming new planets, and people vacuum-sealed from having any connection to the land? No one ever saw the Jetsons working in a lo‘i [abundant

terraced patches]. No one ever saw the Jetsons even breathing fresh air outside of a dome. (Kuwada, 2016, n/p).

C. Plants Through the Cracks: Food Forests and the Multispecies City

In 2021, the largest overwintering population of monarch butterflies in the East Bay, and the fifth in California, was found in the middle of a city. The establishment of the Gill Tract Community Farm in Berkeley, following the “Occupy the Farm” movement that took place in 2012, safeguarded urban land for agriculture. Trading plans of corporative development for agroecological farming, the city became nest to the concentration of a native species whose population had declined in 99% in the previous forty years.⁹ Like Berkeley, many cities across the world are hosting experiences of socio-ecological regeneration through agroecology, many of which are under-documented.

The late 2000s marked a rise in the proliferation of initiatives of urban agriculture, as well as institutional support for it as a means to address both social issues and ecological challenges posed by the climate crisis (Clark and Nicholas 2013).¹⁰ Urban agroecology, and urban food forests, specifically, are even newer in the scene (albeit anciently rooted). Media attention and academic interest to them has grown particularly since the 2010s (Bukowski, 2018).

⁹ Gill Tract Farm and Xerces Society. *Monarchs At Gill Tract Community Farm*. Available at: <https://www.gilltractfarm.org/save-the-monarchs>. Retrieved on August 4, 2022.

¹⁰ The Food and Agriculture Organization (FAO) published several reports in the 2000s recommending policies for urban agriculture as a means to address social issues such as poverty and food insecurity, as well as ecological challenges posed by the climate crisis. Urban agriculture is currently promoted as a resilience-enhancing strategy by the FAO, World Bank, European Union, World Meteorological Organization, World Health Organization (WHO), and U.S. Department of Agriculture (USDA).

Agriculture has been a part of most urban life across history and around the world (Salbitano et al., 2019), however the West outsourced food production to peripheral lands during the industrial period, creating the urban/rural divide (Lovell 2010). As a result of industrialization and urbanization, contemporary urban agriculture struggles with degraded soils and poor ecological conditions (Alvarez-Campos and Evanylo 2019). Some scholars argue that the most beneficial approach to urban agriculture in this context is one of strong multifunctionality, which considers productive and non-productive aspects, and attends to social, cultural, and environmental elements (Lovell 2010; Wilson 2007).¹¹

Agroecology is a paradigm of food production that embeds multifunctionality, and takes a step further in considering political agendas and commitments for justice across the whole chain of food production—for humans as well as for lands, waters, plants, animals, insects, etc., the integrated community that forms an ecosystem (Shiva 2016; Steenbock 2011; Wezel et al. 2009). The agroecological paradigm unites agronomic and ecological sciences, farming practices, and political movements for Indigenous sovereignty, food sovereignty, feminism, landless workers' rights, and climate resilience and justice.

Food forests are a specific agricultural system, most consistently used under the agroecological paradigm, characterized by the planning and management of a forestial ecosystem (multilayered canopies, high biodiversity, nutrient cycling, etc.) foreseeing the

¹¹ On the governmental level, the European Union's plan for green infrastructure, for example, pays attention to multifunctional farming since 2013. "A typical example of a multifunctional Green Infrastructure area would be one that is capable of combining farming, forestry, housing, as well as tourism and recreational activities in the same space whilst at the same time keeping our freshwater systems clean, our air healthy and our wildlife safe" (7). Available at: http://recbratislava.sk/wp-content/uploads/2020/02/Green-Infrastructure_A5_EN_upr3.pdf. Retrieved 30 October, 2022.

production of food for humans, as well as benefits for other species, and for the ecosystem.¹² They promote beneficial effects to ecological sustainability and to (more-than-human) communities' resilience and health (Gama-Rodrigues 2006; Schafer, Lysák, and Henriksen 2019).

While modern industrial agriculture strives for a complete domestication of the landscape, agroecology, agroforestry, and food forests are based on Indigenous knowledge of food production that works in collaboration with, and in favor of, the ecosystem, hence rejecting the dualism between human and nature. These “invisible agricultures” (Steenbock 2011) have been historically neglected and repressed by the west (Altieri 1995), and are now reemerging as viable alternatives to hegemonic industrial agriculture in both rural and urban settings.

Failure to recognize the Indigenous roots of these practices and knowledge is noticeable in the scholarly literature (for example, the multiple articles on urban food forest published in the editorial on “Urban Food Forestry: current state and future perspectives” [Urban Forestry & Urban Greening, 2019] are silent about the origins of food forestry). Besides this, the language often reproduces the dualist and hierarchical view between humans and nature in terms like “resources” and “ecosystem services.” These signal a relationship in which the ecosystem is at the service of humans, obscuring the reciprocity that is culturally present in Indigenous communities, as well as practically necessary. For these reasons, Indigenous and peasant knowledge in the city and responsible decolonial theory must grow together.

¹² Agroecological agroforestry regenerates ecosystems by catalyzing ecological processes such as succession and nutrient cycling, therefore increasing biodiversity, building soil, restoring hydrological systems, sequestering carbon, creating microclimates with reduced temperature, and more (Deelstra and Girardet 2000; Steenbock 2011).

The introduction of practices of agroecology and food forestry in cities is demonstrating the potential to mitigate the effects of the climate crisis while building socio-ecological justice (Colinas, Bush, and Manaugh 2019; Clark and Nicholas 2013; Riolo 2019; Salbitano et al. 2019). Their benefits combine ecological and agricultural elements with important cultural, social, and educational shifts of awareness, perception, and participation in the local ecosystem. The emerging literature indicates the capacity of these projects to augment food supply and food sovereignty in communities (Clark and Nicholas 2013), however this potential is thus far mostly undeveloped (possibly due to the young age of many urban food forests). More noticeably, these initiatives foster a sense of community, sense of place, and connection with nature (Bukowski 2018).

Community food forests are part of a cultural transition and represent local efforts to build abundance and share opportunity. Even more important, they can contribute to meaningful personal, civic, and ecological stewardship that often is lacking in our lightning-fast, digitally driven, consumerist lifestyles. (Bukowski 2018:52).

Urban agroecology and urban political agroecology are emerging concepts, following these emergent initiatives in cities (Pimbert 2017). There are ongoing debates on the ecological, social, political, economic and geographical meanings that they may assume. From a theoretical perspective, these initiatives offer a singular vantage point to observe modern dualisms of human/nature, city/countryside, and private/public, and how they may be destabilized and transformed. In regenerative urban agriculture, it is possible to observe the ways in which the multiple associations that foster life function in them as (or move toward becoming) a multispecies commons. The entanglements of food sovereignty, community resilience, and ecological balance; of multiple social sectors; and of humans and

many other life-forms are a crucial point in the agroecological struggle toward socio-ecological justice.

III. Methodology

This study is based on ethnographic data from eighteen months of involvement in the Isla Vista Food Forest as an activist—as a volunteer (five months) and as a coordinator (thirteen months)—, and complementary interviews with Tony Barbero, designer and co-founder of the project. Ethnography is a well-established method for studying social practices, taking into consideration the important critiques to its colonial history, and updates to its practice (Behar 2003), such as a dialectical engagement with theory (Willis and Trondman 2000). I combine participatory-action research, multispecies ethnography, and auto-ethnography.

Participatory-action research, or action research, has been defined in various ways, revolving around the idea that the practice and purpose of research are connected with human purposes and a participatory view (Bradbury and Reason 2003; Löfman, Pelkonen, and Pietilä 2004; Ozanne and Saatcioglu 2008; Whyte 1989). Bradbury and Reason (2003) define it as a non-traditional research method done with rather than on people, to address significant problems and develop new ways of seeing and interpreting the world. It emerges out of real concerns of people and communities, and seeks to connect action and reflection. Ozanne and Saatcioglu (2008) contend that participatory-action research has an emancipatory interest.

Multispecies ethnography is a novel methodology influenced by the more-than-human or animal turn in the social sciences (Dowling, Lloyd, and Suchet-Pearson 2017; Kirksey and Helmreich 2010; Ogden, Hall, and Tanita 2013). In the intent to address limitations associated with human exceptionalism in research, this approach sees multiple beings and

living organisms as subjects, rather than objects, in the process of world-making, and considers their lives to be as political and biographical as human lives (Kirksey and Helmreich 2010). It has been explored predominantly in the fields of anthropology and geography, and calls for inter or transdisciplinarity as it brings together objects formerly attributed to separate disciplines. The application of this methodology ranges from nuanced analyzes of the more-than-human through conventional qualitative methods, to non-conventional and non-representational methodological innovations (Dowling and Lloyd, 2017). Bringing this tool to sociology can help integrate more-than-human agency and ecological interconnectedness into sociological thinking.

Auto-ethnography is an ethnographic approach in which I, the researcher, will speak in the first person about my personal experiences to look into their social and cultural aspects (Denshire 2014; Ellis and Adams 2020; Holt 2003). This method proposes that introspective and subjective accounts make a part of data and a basis for theoretical reflection. It has been used in several fields, including sociology, and is kin to feminist and decolonial epistemologies that challenge conventional scientific “objectivity,” and, instead, recognize the blurred lines between subject and object as a positive and productive departure point for research (Denshire 2014; Haraway 2020; Harding 1995; Sultana 2007).

Without claiming a “view from nowhere” (Haraway 2020) my reports are loyal reflections of the place from where I speak—as a human, an activist, a woman, a South American (from Brazil), and a white privileged person. Among other privileges, I have, alongside the project, the contradictory and unsettling access to unceded Chumash land of central coastal California as the territory hosting our project.

To be writing this, I acknowledge the privileges I have had being raised with economic and racial advantages, access to formal education, and experiences of connection and intimacy with nature in my hometown, in travels, and in relationships with Indigenous and plant teachers. I also recognize it is a position of power to be researching and speaking in the name of UC Santa Barbara: despite its attachment to complicated histories of settler-colonialism and socio-economic exclusions, this university stands at a peak in the topography of the global geopolitics of knowledge; a place whose voices are listened. I am fortunate to have financial and operational support to be in this place.

Uniting guidelines offered by auto-ethnography, multispecies ethnography, participation-action research, and decolonial and feminist epistemologies, I approach what could be called a multispecies auto-ethnography of an urban forest.

The ethnographic data on the Isla Vista Food Forest resulting from engagement in the project as a researcher, as well as a core member and organizer of the project's activities, is based on approximately 180 hours of activities, including the organization of ten volunteer days, six educational activities, fourteen meetings with representatives of the IVRPD, five meetings with other members of the Food Forest's organizational team, and approximately twenty hours spent at the Food Forest by myself or with other people in an independent manner, to water plants, put new plants in the ground, or merely to be present with the plants and the land, observing them. The ethnography has a multispecies aspect as it considers more-than-human elements of the food forest, including soil, native/non-native plant species, animals, weather, water, etc.

The IV Food Forest was conceived in 2019 by Tony Barbero, alongside the Eco Vista collective, a student-community based initiative, and the Isla Vista Recreation and Parks District (IVRPD), the local authority in charge of parks. I joined the project in May, 2021, as a volunteer, and in August of the same year I became responsible for the communication with the RPD, with the community of volunteers, and with the organization of monthly volunteer days. My positionality involves the role of mediator between the groups of Eco Vista and IVRPD, handling collaborations as well as conflicts and tensions.

To complement this data, I explored the motivations behind the Food Forest project and its visions for the future by interviewing and meeting with Tony Barbero, who conceived the project and planned the food forest from its ecological/agroforestral point of view. Upon approval by UCSB's Institutional Review Board, we completed three interviews of approximately one hour each, in addition to many, many hours of informal conversation. One of the interviews was held at an early stage of my involvement in the project (May 2021), while the two others were held on the occasion of two online conferences, in partnership with Elisa Privitera as a co-researcher and interviewer (Barbero, Cykman and Privitera 2022; Cykman and Privitera 2021). I transcribed interviews with a computer word processor (otter.ai) and analyzed them through the identification of themes.

Interviews covered topics such as the purpose and history of the project; the nature of the collaborating actors, groups, and stakeholders (autonomous collectives, local authorities, non-profit organizations, universities, volunteers, etc.); points of agreement and points of tension among the groups; the structures of the core group of organizers and of the wider community (frequency of meetings, time dedicated to the project, communication strategies,

etc.); ecological conditions of the project (original and current conditions of soil, availability of water, species included, biodiversity, changes witnessed across time); main achievements of the project, main challenges, and visions for the future of the project and for scaling up similar initiatives.

This work was conceived with the intent of transposing the sociological eye beyond the margins of what is specifically human. As a target and a challenge, it defies my human, sociologically-trained eye, as I seek to open it to what I am not used nor trained to see, or to focus on. I have to accept my exaggerated anthropocentrism in this preliminary exercise, within the confines of my ecological knowledge. In the future, I hope to enact further ecocentrism by expanding my knowledge of ecological processes and further understanding the wider world in which we humans are operating and acting.

IV. Results: Into the Isla Vista Food Forest

This chapter is comprised of three parts: first, a contextualization of Isla Vista, the place where the food forest takes place; then, two ethnographic blocks: the first, more technical, the second, more personal (with mutual resonances). The ethnography seeks to address the research questions: How and why are humans and multispecies actors collaborating at the food forest in Isla Vista? How do these human and multispecies connections get established, what challenges to they encounter, and why are they important for the regeneration of urban ecosystems?

The main findings are that urban food forests provide an inclusive, complex environment for humans and agriculture alike. Involvement with an urban food forest promotes the building of conscious, intentional, and mutually beneficial relationships between people, land, and the multiple beings and organisms present. Community members are able to begin sustainably planting food that supports the community and benefits the local ecology, through establishing collaborations across difference—intra-human as well as more-than-human, with the tensions and challenges that these encounters imply. Members find meaning in creating local impact and change in response to global problems related to the climate crisis. According to degrees and forms of involvement, members may develop a sense of place and a sense of belonging.

These results suggest that when humans can collaborate on an ecological project, they may find commonalities that tie them to one another and to the more-than-human in the place they live, contributing to the creation of positive, community-based and nature-based responses to pressing social and ecological problems. Moreover, it sustains a positive

understanding of difference, seen as internal, intensive, and productive, rather than external and exclusive. This aligns with a shift from a colonial relationship to people and land (based on binary and hierarchical otherness) to decolonial, feminist and inclusive communities.

A. A Brief Overview of Isla Vista's Socio-Historical and Ecological Context

The Isla Vista Food Forest is located on a small area nestled on ancestral and unceded Chumash land¹³, now Estero Park, one of the public parks in Isla Vista. Isla Vista is a college town characterized by the proximity to the campus of the University of Santa Barbara California (UCSB) (Figure 1). It is a relevant place from an ecological point of view for its sandy beaches, tide pools, biodiverse wildlife, and more. In the Late Holocene, the Chumash people's primary sources of nourishment included much of the marine life found within the tide pools along this coast (Braje et al. 2011). In 2017, among UCSB students nearly half of the population was food insecure (UC Global Food Initiative 2017); on the other hand, damaged ecosystems host increasing numbers of restoration projects (UCSB Santa Barbara Restoration Project Data Base). To regenerate ecosystems while making them a source of nourishment is therefore a key initiative.

¹³ The Chumash are a Native American people of the central and southern coastal regions of California whose population and culture have been jeopardized and reduced by colonialism over the centuries.



Figure 1. Location of the Isla Vista Food Forest: Isla Vista, Santa Barbara County, California, USA. Source: Isla Vista Master Plan, adapted by Elisa Privitera.

Isla Vista currently has one of the highest population densities in the US, as a one square-mile community of approximately 15,700 people, the majority of whom are college students attending UCSB. More than seventy percent of the population lives below the poverty line,¹⁴ and there is a significant community of houseless people. The foundation of UCSB participated in the process of privatization of most of the land in the area, and an intense urbanization for speculative purposes connected to rentals for students. Thirty percent of the land is paved, and ninety-six percent of the population are renters (Lodise 2019). Due to huge demand for housing and the consequential high rent prices, students share rooms, live in caravans or cars, or even experience periods of homelessness (UC Global Food Initiative 2017). The intense socio-economic gaps in Californian society are aggravated by the rise of extreme weather (including uncontrolled fires, drought, and

¹⁴ Data USA, 2020. Available at: <https://datausa.io/profile/geo/isla-vista-ca/>. Retrieved on March 10, 2022.

floods).

Local authorities and civil society movements have historically sought to tackle these issues. In 1972, the Isla Vista Recreation and Parks District (IVRPD) was established with the mission of preserving the remaining green spaces. It oversees the maintenance, conservation, and fruition of Isla Vista's parks system, which consists of 25 parks and roughly 55 acres of open space.¹⁵ Civil society also played a crucial role in generating movements, protests, and self-organized proposals to improve the IV community over time. Access to fresh food is a central topic: projects such as Food Not Bombs, open to everyone, and the Food Bank, open to UCSB students, aim at alleviating this issue. Eco Vista is a student and community-based initiative which has the peculiarity of merging the topics of climate and environmental justice with local action rooted in IV. Eco Vista¹⁶ started in 2017 from conversations by UCSB professor John Foran and students Jessica Alvarez Parfrey and Valentina Cabrera. Over time, it attracted dozens of members and promoted different projects, such as a community plan, a proposal for an Isla Vista Green New Deal, and the initiative of the food forest.

From ecological, economic, social, and political points of view IV is a prime example of the contradictions brought about by processes of injustice, urbanization, gentrification, and climate crisis. For these reasons, the Isla Vista Food Forest represents a meaningful case for urban and environmental sociology, as it seeks food and social justice while improving the ecological quality of public urban space.

¹⁵ Isla Vista Recreation and Parks District. Available at: <http://www.ivparks.org/>. Retrieved on October 10, 2022.

¹⁶ Eco Vista Community. Available at: <https://ecovistacommunity.com/>. Retrieved on June 8, 2022.

B. Isla Vista Food Forest: Aiming at Urban Multispecies Justice

A passerby crossing Estero Park in January 2021 would most likely not have noticed that small corner of land covered by scarce gray grass. A visitor in January 2022 could find blackberries, plums, kale, lemon balm, basil, sage, other edible and medicinal herbs, many young fruit trees and shrubs, mushrooms, birds, spiders, flowers—a colorful, plentiful community taking place. In the course of a year, over 50 plant species were planted on urban public land by a community of volunteers, with the support of the local authorities.

The Isla Vista Food Forest was conceived in 2019 by Tony Barbero, alongside the Eco Vista collective, a student and community-based initiative, with support from the Isla Vista Recreation and Parks District (IVRPD), the local authority in charge of parks.¹⁷ Tony is an agroecologist and community activist who graduated in Sociology at the UCSB, and later specialized in drought tolerant regenerative agriculture (Barbero interview 2021). He planned the food forest in terms of its ecological design, and projections of food supply capacity.

The land was ceded by the IVRPD, after a year of conversations and negotiations that took place in 2019, extended by a year of challenges presented by the Covid-19 pandemic in 2020 (preceding my entry into the project). According to Tony (Barbero interview 2022), the RPD initially resisted the idea, but finally agreed as community members systematically joined the RPD's open boards meetings to demand it. The RPD was concerned with their short and overburdened staff, and Eco Vista committed to take the lead of maintaining the project. Additionally, Tony Barbero reads the reaction as a fear of the unknown, and a

¹⁷ <https://ecovistacommunity.com/food-forest/>.

skepticism due to previous failures of similar undertakings. In his words:

People are really reluctant to try new things, because we've seen a lot of the long-term people who have been here for decades have seen projects like this happen and fail. And they think why should we ever try anything, but it's also those people who are not really impacted by hunger or other stuff like that. So I don't know, I think food is a life or death thing. Fresh access to fresh, clean, organic food is a life or death thing for a lot of people, not to be overdramatic. But it is a problem in this town. The only real healthy place to get food is the food cooperative, which, I love them, but they're prohibitively expensive for so many people. So here you can come and get tons of different fresh fruits and vegetables for free. And within 5 or 10 years should be literal tons is what I'm projecting, hoping (Barbero interview 2021).

Eco Vista took the lead of about ten volunteer days (with numbers ranging between five and ten participants) since January 2021 to complete an initial stage of the food forest. As of 2022, a community of volunteers continues to do the work of planting and tending the place on monthly work days, and a smaller group is in charge of organizing and leading the activities (Figure 2). The purchase of the plants and materials, and the planning and installation of the irrigation system are joint efforts between Eco Vista (later Isla Vista Food Forest Collective) and the IVRPD.

The soil, as is common in urban territories, was deteriorated. According to the IVRPD, the land of the food forest was previously a road. The dirt is thus mixed with pieces of asphalt that were buried. When digging holes for the plants, in about 6 inches deep there would be found rocks. A rototill provided by the IVRPD was helpful to get the soil ready to be planted on, however not all plants survived, and a process of trial, error, and continuous soil building was needed until the food forest had a young ecosystem established. Some trees still struggle, and some plants die. To deal with soil and rocks requires work.



Figure 2. During a volunteer day, a group of students is planting a Ceanothus (*California lilac*, a native shrub). Source: picture granted by Eco Vista.

The long-term vision is of free access to fresh food in a public space, and raising a forest in the city, aiming to contribute to food security and to ecological regeneration in the community. “How can we do ecosystem restoration, and couple that with feeding people?” Barbero (interview 2021) asks rhetorically. “You know, you’re fighting hunger, you’re fighting climate change, you’re fighting this great extinction all at once. And it’s relatively easy to do. Planting a tree isn’t that expensive,” says Barbero (interview 2021). Ideally, Barbero believes, the human-designed ecosystem would become an edible territory that requires little human maintenance within a number of years. In this case, Barbero expects that in 5 to 10 years it will require minimal intervention, i.e. monthly irrigation checkup, (organic) fertilization a few times a year, and weeding. “Now that things are on drip

irrigation, there's not too much to really do on a day to day basis other than small tweaks" (Barbero interview 2021).

The question of whether a community expects a food forest to become independent is open to debate: while ecosystems naturally reach more stability once they are more mature (reaching "climax," another debatable concept), and this is convenient in that it reduces the intensity of required maintenance, on the other hand we may think of this food forest as a long-lasting multispecies community based on relationships of reciprocity and care, humans included (Pardini 2020; Perfecto, Vandermeer, and Wright 2009). In this sense, people would continue to care for the land, for the place and for other species in the same way as they will continue to receive and to benefit from the ones they are benefitting. At some point, the forest does not require anymore the human intensive care that a baby or a child does, but a network of mutual care and reciprocal relationships, like a healthy adult or community. Personally, I feel like I assumed a responsibility in contributing to raise this complex entity until it is stable and balanced, as if I adopted a living child, which in some ways I did.

Of course, there are material limitations of time and resources that allow a community to offer more or less attention to a garden or a forest, especially as long as the work is volunteer-based. One of the prime challenges of the project, according to Barbero and other members, is the volunteer basis of the project, and the constrictions for what people have available to dedicate to it. Projecting better visions into the future, Barbero suggests that a universal jobs program should be created around the creation of initiatives such as food forests, to tackle food insecurity and loss of habitat of wild species, jointly. Despite the

argument for mostly self-sustained ecosystems providing food, he also expresses the demand for formal jobs to tend to them. In a related contradiction, there is both a resistance against state and local authorities, and the expectation that they will provide such job opportunities and other resources.

In the IV Food Forest, opportunities and challenges have emerged from the collaboration between civil society and the local authority. Some challenges include the limitations regarding ownership, intervention, and management of the space (e.g. use of water, infrastructure, and tools.), as these are under the IVRPD's jurisdiction. However, the agency has been mostly supportive of the project, and shares interest and initiatives related to fostering community engagement and to the consolidation of the food forest.

Relationships between autonomous initiatives and state authorities are often tense: in this case, the collective has libertarian/anarchist political orientation, which poses a direct conflict with the idea of reliance on a state.¹⁸ However, the IVRPD may be seen as a middle-ground, formally linked to and representative of the state, at the same time as it is community-based and community-led, with only members of the neighborhood being eligible to its board, and board meeting open to all (this trace that was fundamental to the initial approval of the food forest, due to the repeated expression of support by community members in those meetings). As such, the collaboration between the autonomous collective and the state authority may be shaping a hybrid and new form of governance, in a connection shifting from typically tense and antagonizing interests and politics to a collaboration towards community improvement through shared and agreed upon interests

¹⁸ Jill Harrison (2022) discusses the complicated and contradictory, yet occasionally productive, relationships between movements for environmental justice and the state.

between those sectors.

Another challenge of the IV Food Forest refers to the ephemeral nature of the IV community, composed mainly of students, and an even more rapid recycling rhythm of volunteers joining work days. Although most volunteers, if not all, express the desire to return in the future, and provide their contact information to remain connected, the vast majority attend only a single event. This may be due to a variety of reasons, one of them being the communication systems utilized by the group. Social media platforms such as GroupMe and Signal have brought low engagement; Instagram posts often attract volunteers and newcomers; email lists seem to be effective, however the shortage of team members does not always allow for a proper communication system. It is also a challenge to further engage volunteers as more active members of the organization of the project.

Social media may present limitations associated with the social context that it allows and produces: one of distant and uncommitted engagement, unreflective of the proximity and liveliness that real encounters produce. Perhaps a constant, fixed schedule of encounters (e.g. every Saturday, or every first Sunday of the month, etc.), rather than case-by-case plans and communication, would allow for a different kind of engagement, and lead to a different, hopefully more solid sense of belonging and community, less dependent on the digital world. Similar experiences elsewhere indicate this. Kiryat Ono Food Forest, in Israel, for example, counts on WhatsApp groups and a Facebook page, but also on a consistent schedule in which different activities are offered by different people (mostly parents) to the community (children or families) on fixed weekdays, such that the food forest is constantly inhabited, a part of people's routines, and generative of new, growingly deep community

bonds.

A food forest needs community participation not only in terms of planting and tending, but also in terms of harvesting, visiting, and enjoying a shared space. While the IV Food Forest has been successful in engaging UCSB students in work days and educational activities, the inclusion of Latinx families (and the neighboring permanent population in general) is a gap to be bridged. Once the stable community of IV is involved, including neighbors of the park, it may be possible to constitute a greater sense of community around the food forest. Another future challenge is to understand how to scale this experience out into other neglected or otherwise available corners of IV so as to convert more areas into flourishing and productive gardens, and to establish further networks and partnerships to expand the experience in other locations.

The unfolding establishment of partnerships indicates a positive feedback loop between the strengthening of social bonds and of ecological bonds. In October 2022, the IV Food Forest started collaborations with UCSB's Edible Campus Program (ECP) and the Isla Vista Composting Collective (IVCC), which are promising partnerships able to provide the food forest with volunteers and staff to offer more of the care it needs on a regular basis (manual watering once or twice a week; adding compost and mulch every few weeks). As these social connections take place, a more solid social web allows for a more consistent tending to the ecological web. Starting December 2022, an ECP volunteer was assigned to water the food forest twice a week, allowing us to plant more vegetables and younger plants that require frequent attention. On that month's volunteer day, the IVCC delivered six buckets of ready compost, made from the neighborhood's food scraps, bringing the nutrients full circle

to nourish back the land so it can once again better nourish people and other beings.

Conversely, as the ecological webs strengthen, the social webs reciprocate. If early in the project volunteers joined upon invitation, despite not having noticed the food forest discreet park's corner, increasingly the identification of a visible, beautiful garden became a reason why some volunteers looked to join.

A final note on a distinctly important aspect is the way the food forest refers to a certain understanding of “nature,” and of the place of humans as a part of this network of agential beings. From the technical specificities of food forests as an agricultural technique, to the subjective and discursive elements present in members and volunteers' narratives, a thread maintains the motto of decentralizing the human, and working *with* the nature, or *with* the forest, as a way to engage with multiple beings and their intelligences in collaboration to produce an inhabitable and nourishing ecosystem for all. Technically, rather than straight rows as in plantation style trees, a food forest is a dispersed and polycultural forest ecosystem, explains Barbero (interview 2022). It is a permacultural approach to agroforestry.¹⁹ “You know, in 10-15 years it might be a food forest over a natural cycle. It would take hundreds of years, but what we're doing here is accelerating nature.” (Barbero interview 2022).

¹⁹ There is no consensual definition of agroforestry; it is used to describe a variety of old and widely practiced land use system that combine, spatially and/or temporally, trees with agricultural crops and/or animals” (Altieri 1995:247). Agriculture and forestry are brought together in a sustainable production system. However, it occasionally exhibits characteristics of conventional agriculture, such as alley cropping, bare soil, even pesticides, etc. Expanding on that principle, and blended with permaculture—a philosophy and assembly of practices for a human culture that may be sustainable to the point of permanence—a fully developed food forest resembles a natural forest.

Barbero (interview 2021) says “nature” is “not that useful of a word ... because it promotes a dichotomy ... But when I think of nature I just think of somewhere you go that hasn’t been completely ravaged by colonialism and capitalism ... The whole system of conservation of nature has this idea that we’re inherently destructive to the environment, which is colonial propaganda, of course. I think that the place of humans is to make the environment better through stewardship, educated stewardship, prioritizing native species and finding ways we could feed ourselves ... The false dichotomy [between nature and humanity] ... is one of the most harmful ideas of our whole civilization.”

C. Becoming with the Forest: An Ethnography of Belonging

In this section, I share my inner thoughts, experiences, and personal connections as a member, organizer, and builder of the Isla Vista Food Forest. The data demonstrates the complex ways in which personal, institutional, political, and affective elements take place in the process of establishing and tending to an urban food forest. I also reflect on how my involvement in changing the landscape also changed me.

I first joined a day of planting at the food forest on May 8, 2021. The area is small, and yet it feels meaningful: people are getting together to respond to global problems, on the local level. We were seven people digging holes, transferring soil, planting new trees, feeding them with organic fertilizer, and watering. We planted pomegranate, avocado, and pineapple sage, adding to the already present plant species such as apples, peaches, figs, rosemary, lavender, and many more. The garden looked modest: mostly small plants, on ground or understory level (except for the big fig tree), quite distant from each other. Wood chips covered the soil as mulch. Not an easy garden to spot, to eyes that recognize a garden

by organized lines of annual vegetable species coming out of bare soil. No signage either.

The place was strange to me, and I was a stranger: to the group, to the land, and to the local organisms. The arid aspect of the soil and dryness of many plants evoked the drought typical of southern California. I am not from there. I slowly learn about the land by touching it, engaging with it, and listening to people who have learned about it before me. I noticed that not having the knowledge to plant and to feed myself made me feel less human.

This is a reality of a huge percentage of human beings today—majoritarily urban dwellers and non-farmers. On one hand, it is typically human that a small group is responsible for feeding the whole society. Brazilian agronomist and agroecologist Sebastião Pinheiro (2007) notes that termites, ants, bees, rodents, and humans share this characteristic, and therefore calls these species “ultra-social” beings, and practitioners of agriculture. On the other hand, nowadays most people not only lack, and underestimate, agricultural knowledge, but also have little contact with or knowledge of the farmers who grow their food (if it isn’t from an industrial machine). In this context, I feel that I can learn how to belong by connecting with or knowing about farmers who grow my food, but I can further learn how to belong, and contribute to other’s learning and belonging, by connecting directly with the land and with the process, the beauty, the challenges, the mistakes, the surprises, the bees, the beings, the rhythm, and the joy of harvesting and eating, hopefully in a shared meal, a food I grew.

Lack of belonging may have hit members of the neighboring community too, when a few of them stole and destroyed some of the plants. A child I met on that day thought that it was done by people who had been denied a plot in the private community gardens’ plots.

Apparently they did not recognize the food forest as a common garden, to which they could have access, and in which they could take part. A challenge of belonging, of expanding belonging, as one tends to preserve that to which they belong.

I thought that important work remained to be done—to foster social processes, and to foster ecological processes. To build community and to build soil. I had myself felt welcome, enjoyed working with and around people, connecting in many non-verbal manners, and through the common goal and desire to make that happen. It was after my first day volunteering, feeling my hands and mind boil, that the impulse burst to focus my utopia and my research (along with others') on such creative and necessary ecologies. I change my mind when I touch the ground.

The Humans

Volunteers then and in the following volunteer days I joined or organized impressed me with the liveliness with which many work, a determination remarkably and visibly different from coerced work. There are usually more people interested in shovels than shovels available, and the scenes of digging are noteworthy—some will use the full weight of their bodies to jump on the shovel, pressuring it into the ground, opening space to accommodate a new plant. In opening and closing circles, volunteers have expressed their motivations related to the joy in being outdoors, working with and for nature, regenerating the ecology, establishing meaningful and positive connections with the land, and collaborating in community to create change.

July 9, 2021. Maintenance day at the food forest: Tony has returned from travels, and

called a work party. Scheduled for 11 am on Friday, we and the plants met. There were the project leaders, an undergraduate student, a young girl from the local community, and three graduate students, including me. We worked mainly mulching and weeding. Weeds absorb water that we want to direct to the trees and plants grown. Water is scarce and responsibility with its management is essential to a project that aims for climate and socio-ecological justice.

Representatives of the IVRPD stopped by. They arrived while we were taking a break and snacking on strawberries and other foods brought by the collective. The RPD representatives demonstrated enthusiasm about the project; asked the names of everyone who was there and thanked us more than once for our volunteering. RPD grounds' crew helped us to bring mulch (wood chips) that we use to cover the ground, especially around the trees, also to help maintain humidity.

The atmosphere is nice and light, people working for taste and purpose. After finishing, we sat for over an hour snacking and chatting informally. Common interests around travel, environmental issues, soil management, water, composting, etc. filled conversations. It is pleasing to see people and initiatives like this come along, opening on apparently empty space the full place of an ecosystem, raising green life and source of oxygen and food, regeneration of human intentions and organicities.

July 22, 2021. Work day: we met at 4pm, ten of us, and did a lot during three hours. We laid cardboard over the grass, and mulch over the cardboard, on an area to be planted next. The cardboards should break down in a few months, and turn into good soil for planting. We planted native narrow-leaf milkweed, the single most important host species on which

monarch butterflies, also a native species, can lay their eggs. The benefits accrued to our own human species are not as direct as with a crop plant, but essential within the complexity of the ecosystem. Besides, the plants are very welcoming, they generate beauty and joy in so many ways. When I saw the pumpkins we planted a few weeks back sprawling over the ground I immediately opened a smile. We were picking up mulch on wheelbarrows: it takes strength, it takes work, and it strengthens the body to take care of a garden. We take care of the world so that the world will take care of us. Someone had planted another milkweed: who could it be?

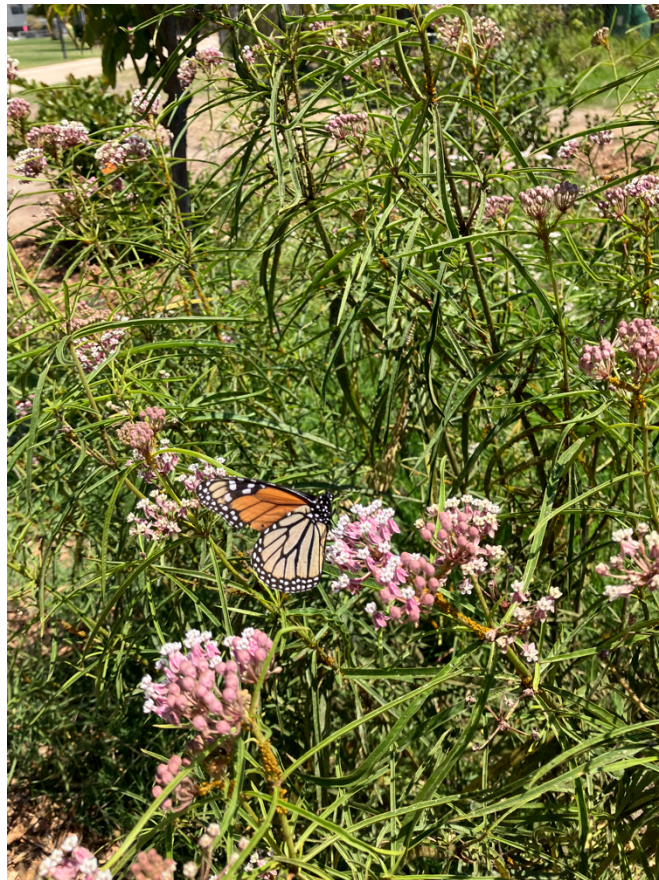


Figure 3. Narrow-leaf milkweed meadow and a Monarch butterfly at the IV Food Forest. Source: picture taken by the author.

At the end of summer 2021, we held a meeting with four members of the food forest to discuss its future steps. Tensions between the collective and the RPD had risen after a conflict around water, aggravated by other political disagreements. The hose for free access had been shut down. The RPD promised Eco Vista they would call a plumber to take care of the matter; however after several promises and weeks, they communicated that the hose was officially turned off, because they cannot leave access to water, a scarce resource, open to all passersby. This led to an explosive conflict, in which the leader of the food forest decided not to communicate or collaborate with the public authority anymore.

The project needed a mediator, and I promptly volunteered. Until that moment, I had not been able to visualize how to further contribute to the project without having practical skills in agroecology or agroforestry. However, such a project requires collaboration of various social sectors, and diverse capacities, from agricultural knowledge to public relations to social media, etc. From then on, I could be useful as a human agent to deal with human elements of the project. In October 2021 I reached out to the general manager of the IVRPD and scheduled a preliminary meeting to discuss both parties' perspectives, needs, and wants for the continuation of the project.

A “broken telephone” communication was established, in which I mediated and negotiated proposals coming from Tony and the Eco Vista collective with the RPD representatives, and led volunteer days. Agendas included what plants to plant and where, what type of path to build (which material), expectations around future volunteer days, irrigation, access to water and tools, and the organization and execution of volunteer days. The two last items were the most contentious and delicate. The RPD insisted on maintaining

tools under their jurisdiction, inaccessible to us in their absence. We would have one key to access the internal hose (of the community garden plots), ceded upon a contract, which seemed insufficient to some Eco Vista members. Finally, volunteer days could only be held in the presence of RPD staff, whose activities would include supporting us with tools, water, and snacks. At the same time, the presence of a public authority, and the obligation to sign up has generated reactions from a few members and volunteers who have felt personally coerced, and concerned about the implications for undocumented people.

Other items brought up by the RPD as agenda for discussion were: establishing a mutual agreement on record that may continue across changes in staff and project leads; ensuring that we maximize the opportunities to educate the public about the food forest (including what people can eat/cannot eat, etc.); finalizing and updating the site design, delineating plants and boundaries to the project; and planning more peer lead workshops about food forests around how private property owners can establish them. While the collective and the RPD agree on these items, they have mostly been either partially or not accomplished, which indicates the difficulties of a project based on voluntary work and limited resources.

I centralized the execution of monthly volunteer days during the following year. In the first months I mostly conducted the work according to previously received instructions (what plants to plant where, etc.) from Tony, after holding alternate meetings on site with him, then with the RPD to debrief our plans. In the summer of 2022 Tony started to join volunteer days again, smoothing the process, and easing my duty, allowing for me to take on other tasks, and maintain an overview of the work and occasional needs. On the roles

needed, a humorously zoo-based system I suggested in September 2022 included: lion: general coordination, owl: logistics regarding plants and activities planned, whale: communication (make/share flyer, send out messages); dog: hostessing (welcoming volunteers and explaining what we are working on and what they can do); butterfly: connecting with volunteers (making them feel welcome and comfortable being there) and getting their contact information on a sign-up sheet; tigress: providing snacks; and eagle: documenting the event (photos and videos). The system worked fairly well, with rotating roles, and of course subject to some improvisation and overlap.

Among the more than forty volunteers joining work days over the course of a year, at least three-quarters were students at UCSB. Reaching the local, neighboring community appears as one of the most prominent challenges. A few encounters happened during volunteer days, without, however, the neighbors joining the event. On May 8, two interactions happened with local members of the Latinx community: one with a child, another with an elderly woman, accompanied by her family.

The child joined the work enthusiastically, expressing his passion for work and disgust for video games. He stuck around for more than an hour, actively participating in digging, making use of the tools with familiarity and strength. He lives right in front of the site, so I invited him, and hoped he would continue to join in the future. He said he would like to, but he didn't have access to the internet, and did not want to accept written information on a paper, as I offered. He did not come back.

The white-haired woman chatted with us about the varieties of plants we had, and told me about her personal memories and histories in that town, neighborhood, and park. It is

getting better every time, she said. She added that it did not use to be very nice, but that now it is improving, and the food forest was a sign of that. She was playing with her grandchildren; later her son and his wife arrived. We shared the nearby picnic tables, and some snacks.

One day in June 2022, I was visiting the food forest and had a non-premeditated encounter with an RPD staff member. We chatted, and as in other times we had met there, I asked if they could open the gate for me to access the hose and water the plants (another member of the Food Forest Collective had our contract-based key). At that moment, they asked with surprise whether I didn't have a key, and to my negative answer, took off a key from the keychain saying, "take this." Feelings are key: people's connections to each other, to the place, the plants, and the project grow along with other species' growth. With that, at times, the personal supersedes the institutional. Affect and structure blend as trust is built.

Between the Land, the Plants, and I—or We

In May 2021, the soil of the food forest was thoroughly covered by mulch, as agroecology teaches. A year later, in July 2022, most of the mulch had been absorbed as organic matter, and common, "invasive" weeds were taking over. The discourse of invasive versus native species is a concern among some members of the IV Food Forest. It retells the history of colonization as an ecological process, in which species were brought by Europeans and took over space on unceded Indigenous lands. On the other hand, the warfare

metaphors do not necessarily resonate beyond the human.²⁰ This debate generates fascinating brainstorming sessions of perspectives and solutions among collective members.²¹ As is true for most matters, knowledge of nature, like nature, does not appear to be one-sided or straight-forwardly objective, in the workings of the food forest. Rather, it comes as a contingent process of construction that allows for a diversity of points of view. Ecology is a narrative. There are as many ways to plant, to prune, to water, to cultivate as there are ways to think, to be, and to eat.

Tomatoes. It was the beginning of summer, and I wanted to plant tomatoes. Tomatoes are red, sweet, nutritious, beautiful, resilient, proficuous, and make a visible, identifiable, inviting food forest. The experienced agroforester of the team was opposed to planting annual vegetable species, which demand more attention, water, and a different management than perennials. The tension arises: who has decision-making power? Who decides what to plant, what is best for the place, and what is best for the people? The challenge of establishing a democratic, horizontal project bumps into ecological power-knowledge. The agroforester claims authority by alluding to nature's authority, contending tomatoes would alter the soil's pH, require intense watering, and other factors. However, other knowledgeable farmers had different opinions. One of them sustained that we only needed to deep water the tomatoes twice, early. Two others agreed with this, as long as the plants

²⁰ Jean Comaroff (2017:30–31) writes about the warfare language and paradigm that have become popular among ecologists. “The recent worldwide preoccupation with invasive plants ... serves such a purpose, enabling a displaced, supplemental politics of demarcation, prioritization, exclusion—and also of dehumanization—especially in situations of scarcity and deterritorialization.”

²¹ For example, while one member didn't want to plant sweet mint because they considered it an invasive species, another member argued, winning the debate, that it was a much more tasty invasive than grass, therefore a good one to plant envisioning that gradual replacement.

were big enough. Tomatoes went back and forth in the Signal group of the organizers, where Tony argued about specific ecological conditions, and I argued that as an active member of the forest I wished to take part in decisions and initiatives of what to plant. Upon an unaddressed impasse, I finally decided to act. I thought at that point I was as much a part of the project and of the land as any other member, and would give tomatoes a shot, if only for the sake of autonomous learning through trial and error. The conflict dissolved without further discussion, and half of the tomato plants grew.

I called Island Seed & Feed, a local, permacultural nursery that enthusiastically donates plants to the food forest. I picked up four tomato plants, and went to meet another collective member on site, to plant them on June 1, 2022, a sunny Wednesday afternoon. I arrived first, so I grabbed the shovel, and started to dig a hole at our little corner of Estero Park. For a moment it was me, the land, the soil, the shovel, the tomato plants, and the whole surrounding city. I felt like a human being, planting, multiplying. I appreciated the opportunity to plant organic food on public land, and to have governmental support to do that. I felt a different, deeper connection to the food forest from that day onwards. The necessary practical transitions of our social systems need to be accompanied by a transition in subjective perception, for every system of power is associated with a system of knowledge (Foucault 2005; Foucault 1980). Direct experience is a powerful, if not indispensable, means to generate sensitivity and intimacy between people and the ecologies where we belong.

The fellow collective member arrived, a good friend, and planting the other three tomato plants felt like a pleasurable way to spend time together. We chatted about life, tomatoes,

collectives, humans, water, ideas, and dreams. We filled our bottles with water from the water fountain several times to give each plant a first deep, motivational bath. A couple of months later, two of the four plants were absent, and two of them were thriving and spreading tomatoes on the public grounds of the park. We don't know whether and who has harvested and eaten. I know for sure at least one living being from a different species (bird? squirrel? gopher?) ate at least half a tomato, leaving the other half on the ground as a hint for me to find.

Fig. A big fig tree is the grandparent of the garden. In 2021 the tree suffered from disease, and the figs had to be harvested on an urgent note, before isolating the tree from people's reach. A "harvest day" was organized to dispatch figs to the community. I could not taste the figs for another year, the period during which I worked to enhance the forest's conditions. In September 2022, the tree showered me with fat, purple, sweet juicy figs. The tree's gifts, in the reach of my hand (at times aided by a trunk-stool), for no immediate, formal pay or exchange, contrasts with the commodified fruits sold for high prices at markets or stores. We have held meetings under the fig tree's shade (Figure 3), and have occasionally witnessed neighbors sitting on the trunks and chatting under the grandparent's protected freshness.

Plum. I met the plum tree as a young, squalid skeleton, with a few thin branches and discreet leaves. The leaves went dry and fell off during fall 2021, leaving nothing but the light gray sketch, and in the winter 2022 I was convinced the tree was dead. Tony reassured the tree was alive. I believed him, but a different breeze of understanding touched my eyes and body when I arrived at the food forest in the beginning of spring and saw, among the dry

gray bones of the plum tree, tiny white flowers sprouting their way out. This felt like belonging. The plum tree and I had been through cycles of life and death within one same life, on distinct rhythms and with quite different scales of patience, however I understood the tree, and felt understood.

May 7, 2022. Spring. The plants look amazing. The food forest looks alive. There is a colorful wooden sign naming the place, “Welcome to the food forest.” Mushrooms appeared under the rosemary. Plums are coming, the tree has changed its face since last time I came.

August 3, 2022. Summer. Tony suggested to me we meet at the food forest sometime soon. We didn’t specify a day or time. I was awaiting his response, and went to Isla Vista area for other activities. I hadn’t been to the food forest for a while due to travels in the summer, so upon arrival to the neighborhood I felt so curious, drawn to, invited, and called by our food forest that I decided to go there first thing. It looked beautiful, peaceful, and then I spotted Tony sitting on one of the little benches under the fig’s tree, enjoying the shade. In a smooth wave of warmth I understood the meaning of “sense of place,” not in an intellectual or descriptive way, but embodied and lived.

We met at, connected by, and through the place. We met each other because each of us had met the place. The place grew in me until the feeling of being home. I feel belonging and community with the plants and fruits. I had the key to water them, which I planned to do, but Tony was already on it, the hose was showering the blackberries. I saw monarch butterflies flying. In the background, behind them, to my eyes, there was alternance of flowers, plants, the asphalt grounds of the basketball court, butterfly citizens, inhabiting the same space as us, and more than that, pollinating flowers that we had planted—a feeling of

participating in the life of a butterfly. We are becoming urban nature. Then I saw bees, ladybugs, tiny shiny beetles, a community of living things moving, flying, and kissing each other. I saw the tomatoes—two big tomatoes still green, one further ahead than the other on the workings of redding—that three months ago I planted there with the vibrant commotion of growing food on public land. They were coming to life. I saw the many blackberries, ate some purple juicy ones, looked at the myriad red and pink ones not yet ripe, preparing themselves in the natural process of becoming sweet and soft to be eventually eaten by someone, probably human, maybe not. Next to the berries, peppers, onions, and other foods were coming too.

Tony and I talked about the consistent presence of butterflies, and all that beauty. I commented about the need for signs to indicate that people can harvest. Tony said he sees people harvesting every now and then.



Figure 4. January 2021, land of the food forest before it started. Source: granted by Eco Vista.



Figure 5. June 2022, Welcome to the food forest. Source: picture by the author.

Soil and/as Community

After the human-planned ecosystem is set in place—planting trees and plants, and bringing organic matter—the soil is progressively built. Builders are bacteria, mycelia, worms, ants, nematodes, fungi, and others, and their interactions with those plants. The sun, winds, and water (whether rain and fog or manually added) take part in shaping the ecosystem. As plants grow, organic matter decomposes, and the ecosystem evolves, the soil becomes richer—that is, more populated. Over time, each tree, plant, or area becomes host to a community of certain living beings. Most visibly, the place becomes host to worms, birds, and insects (butterflies, ladybugs, beetles, and more), who are key players in pollinating and spreading seed. The better established the ecosystem becomes, the more the actions of other species take place, and become visible in the appearance of “spontaneous” (to an anthropocentric eye) flora and fauna. Human agency loses importance over time as organisms increasingly pop up and collaborate in the natural cycles of death and life, tending towards ever higher diversification and complexity.

On “soil day” we carried out an experience of community-based research. Conducted by a collective member and UCSB postdoctoral soil scientist, we invited the community of volunteers to take measurements of the soil. August 28, 2022, 2 pm, a group of four collective members plus four volunteers met on site to collect samples of soil, and moved to UCSB to prepare their analysis at the lab. We followed the expert’s instructions to prepare the multiple batches of soil, moisturize them, set them in trays, weigh them, take notes, put them in the oven, and wait for the results. We took measures of carbon, nitrogen, moisture and water-holding capacity, and organic matter, comparing twelve samples of soil: three of

fruit trees (avocado, plum, fig), three of native herbs (native grasses, ceanothus, and a meadow of milkweed and yarrow), and six “control” samples from adjacent soil, apart from the food forest, similar to the initial conditions of the land when the project took place.

Results are still preliminary, but indicate improved soil conditions. Beyond scientific numbers, participants remarked on the visible differences between the beige and dusty adjacent dirt, and the food forest’s dark, lumpy, and moist soil, full of worms, pill bugs, ants, mushrooms, and others. Building bridges between research and community, laboratory and forest, science and senses, is a means to contribute to building human community, and more-than-human communities simultaneously.



Figure 6. On the right, sample of soil from the food forest. On the left, sample of adjacent soil. Source: granted by Tony Barbero, taken on Soil Day.

V. Concluding Remarks

The Isla Vista Food Forest is an on-the-ground experience of cosmopolitics seeking multispecies justice. Agriculture, and particularly agroecology, is a human activity that actively engages with soil, water, seeds, plants, and other assemblages of life-forms and elements that collaborate in the production of food. In that, it betrays the abstract dichotomy of nature and culture, and exposes the mixture. Urban agriculture intensifies the contrast, or the reconciliation, of the duality, by bringing nature into the city, into territory historically conceived as exclusively human. In a time of climate and ecological crises that modern thought, plagued by dualism, fails to address, practices of urban agriculture rooted in Indigenous ecological principles of food production are relevant and promising. Urban agroecology, including urban food forests, interrupts the urban fabric by inserting the “outsider,” i.e. the forest (from the Latin “foris,” literally “outside,” foreign), as an enclave.

The Isla Vista Food Forest is aligned with multiple autonomous, small initiatives that pop up in cities all over the world to propose concrete solutions for pressing social and ecological problems, challenging cultural habits and understandings regarding the place of humans within nature. It is one of many examples of initiatives in which a piece of land exhausted from urbanization, where were once deposited debris and garbage, progressively replacing organic matter and nutrients by toxins, now there are soil and a forest being slowly built. While it is easy to destroy (in the familiar accelerated speed of “business-as-usual”), it is harder to regenerate. The long timescale of a forest’s growth, and challenges in organization and in limited resources make it a challenge for people to establish and tend to

ecosystems. The degraded soil of Isla Vista is part of a widespread reality of urban grounds in need of healing and recovery from an industrial era. These concrete experiences are demonstrating the capacity of these practices to contribute to the regeneration of urban ecosystems by acting as catalyzers of nature, while also addressing social problems.

My investigation shows that the Isla Vista Food Forest entails a complex governance, as it unites different stake-holders, skill-sets, and forms of knowledge, requiring and fostering collaborations between different sectors of society and different capacities of power. In this initiative, the patchwork includes: 1) an independent collective, as the party that holds the necessary knowledge and skills, sustains the vision that motivates the initiative, and dedicates significant amounts of time and labor; 2) individual actors in the capacity of volunteers, and neighbors who have or develop bonds with the place; 3) local political authorities (in this case the Isla Vista Recreation and Parks District), as the party that has ownership and power over the land and other resources, with a decisive role in decision-making; 4) occasional collaborations with educational institutions for visits of students and for research, including the UC Santa Barbara, and the Wilderness Youth Project non-profit organization. Additionally, it includes interspecies politics, negotiations and collaborations. These collaborations may point to new strategies of co-involvement between private and public sectors, leading to an emergence of a multispecies commons.

From a sociological perspective, this project is bonded to a global, recent phenomenon of the spread of urban food forests, responding to large-scale problems on a micro-scale, communitarian level. As is the case for similar projects, the outcomes are, so far, more demonstrative than productive, i.e. the food supply is still minimal, and the initial motivation

for food sovereignty gets supplanted, in practice, by the educational, cultural, and communitarian aspects of the project. As Catherine Bukowski (2018:393) captured it:

The initial impulse is often to develop a community food forest to provide nutritious local food and to improve the ecological state of underutilized urban areas by turning them into beneficial green spaces. It also usually comes with an expectation that the food forest will become self-regulating. Yet, the sense of community, human relationships, and experience are some of the most important outcomes of community food forests. The idea of giving back to nature and society draws people in.

The collective, volunteers, and students involved in the project have the opportunity to reconnect with and be a part of the land, engage with a movement for change toward socio-ecological justice, and develop a sense of place and sense of community through/with nature. Some of the emergent politics that arise with this experience regard territory, autonomy, food sovereignty, land reparation, cultural affirmation, and communitarian feminism. Beyond humans, multispecies collaborations are geared in the building of soil, purifying soil, water, and air, nourishing flora and fauna.

With regards to pumping sociology beyond the boundaries of the human, an urban food forest serves as an exemplary object. Not only is it made by the engagement of humans with other forms of beings, there is no food forest if other species don't engage with it, collaborating as a society of many forms of beings. Reciprocity is recursive: as people give to the place, the place gives to the people—food, medicine, beauty, shade, calm, rest, fun, fresh air, etc. Finally, the food forest demonstrates the potential intimacy between struggles for social justice and for ecological restoration. The social and ecological realms show their co-constitutive nature.

As theorists in the social sciences and in other fields are noticing, these interdisciplinary dialogues are as fundamental as interspecies politics. “Awkward or not, these diverse organisms co-produce our urban worlds; we need not only to recognise the complex relationships between multiple organisms but also to understand ‘the human as emergent through these relations’” (Houston et al. 2018:193). Deleuze and Guattari’s (1994) description of these decentralized relationalities, or this flat ontology, speak of “becoming” as a process not of turning into something else, but dissolving into heterogeneity. Donna Haraway’s “becoming-with,” and Rosi Braidotti (2013) “becoming-world” follow this line of flight to call for the development of a “radical relational model of interaction” based on an ethics of accountability (Braidotti 2013:8). Like other dualisms, the codings of human/nonhuman dissolve—into a coding of more-than-human.

Future research on urban food forests can benefit from further exploring the status of current, contemporary initiatives, as well as looking into what may be their full potential, and how to reach it. For example, research is only imminent to assess specific figures for cities’ available agricultural lands, and on how much urban agriculture or food forests are able to produce and supply, if embodied as part of urban planning. There is more to discover and document on the unfolding of urban food forests as they make way into more established ecosystems; and how people make these projects advance, or not, in relation to their motivations. Regarding the social and political aspects, it is pertinent to maintain a critical approach looking into who is involved in these initiatives, and who benefits from them (taking into consideration, for instance, processes of “green gentrification” that in some cases reserve urban green places for a privileged elite). Similarly, the ambiguous

relationships between grass-roots initiatives and public governmental authorities deserve further attention.

There is a pressing need to transition towards regenerative cities and food systems. Who has the knowledge to do it? Who does it? It seems that: 1) “nature”—the assemblage of diverse organic and non-organic beings composing a place, 2) humans who learned how to work like and with nature, 3) people, organizations, and institutions that recognize this multispecies work and its benefits, and are willing to support it. With that, since the urban world has been imagined and made, then it can be re-imagined and re-made. The imbalance of urban ecosystems is a prominent contemporary concern, and responsive proposals are urgent. Welcoming nature into cities is a crucial determinant of the living conditions for humanity in the future.

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