

Tilting the World: Relations with non-Humans and the Future of Agriculture

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1. Introduction

The world is literally tilting, pulled off its true axis by glacial melt pouring into the oceans (Deng et al. 2021). Day by day, we are bombarded by impending Anthropocene crises with their narratives of despair and insurmountable challenges; extractivist industries and intensive agriculture, the climate emergency, mass migration, displacement and conflict arising from inequalities and poverty, all compounded by rising global population, socio-economic transformation, changes in dietary patterns, the depletion of water and land resources, and soil degradation. No wonder then that we feel the world is tilting, but, when a body tilts, it can change direction and in this article we explore how we might productively intervene in a time of ecological crisis by taking agriculture as a nodal point for human-planetary relations, and using it to guide a series of reflections on how experiments in making a living might offer potential pathways for social innovation and transformation in response to planetary crisis, as well as the grounds for conceptual and political critique of the futures we envisage.

2. Whose Planet and Whose Crisis?

The planetary crisis we currently face is the consequence of series of failures across interlocked and intersecting systems with non-linear dynamics. Understanding how human agency can intervene in these systems requires a consideration not just of the limits of human agency, but of questions of ethics, power and responsibility across new frontiers of human/non-human interactions and forms of care and solidarity (Puig de la Bellacasa, 2017; Myers, 2017). In succinct form, we can say that humans have wrought many changes on the worlds they inhabit, but they have never had to organise human societies before to regenerate the planet and the natural systems on which they depend across the breadth of the earth. Imagining the forms of change, governance, thought, power, and resource mobilisation necessary to initiate and sustain such transformations is far from easy, and it sets an unprecedented challenge for all forms of social theory right across the full range of humanities and social science disciplines. A passing acquaintance with the many discussions clamouring for global

transformations drives a set of alarming reflections about what they could really mean or entail, and who or what could be enacting their realisation.

Understanding social change is the purview of the social sciences but transfiguring and redesigning how societies relate to the biosphere is of a quite different order of magnitude. Specific outcomes such as carbon reduction, biodiversity conservation, liveable cities, reduced plastic in oceans are all fundamental, but only if they form part of a wider set of transformations designed to remake the relations between humans and the natural world. Critics generally see this as unproblematic, arguing that humans have always transformed their relationship to nature, grown new crops, developed new medicines, worked out how to imitate life itself and so on. Yet, this misses the crucial point that technological innovation will not be enough to bring about the transformations we require, the enabling necessities for which reside in the realms of ethics, governance, imagination, and social innovation. In these spheres of human life, we at once encounter issues of diversity and conflict with their multifarious links to social justice and self-determination.

Whole system change is a planetary challenge in more ways than one because it must of necessity press upon the question of what it means to live well with others, and whether and how it is possible to live well with them. These others are not simply other humans, but non-humans, as well as other materials, objects and potentialities that form the constitutive elements of all our environments. Our 'reciprocal capture' by our many others (Stengers, 2010) is not only a form of embedded, co-constitutive embodiment (Haraway, 2015), but a necessary politics and an ethics (Moore, 2012, 2014). Indigenous environmental activists have long articulated the earth as a living being that humanity must respect and nurture, and recent legal and constitutional changes have begun to demand recognition of the rights of non-human others (de la Cadena, 2015a, 2015b; Moore, 2012; Szerszynski, 2016; Walsh, 2018; Wilson and Lee, 2019). The incorporation of non-human others and aspects of the natural world into ethical frameworks necessitates an expansion of the ethical imaginations for most of the world's populations, affecting both their scope and character.

Yet, this is not simply a matter of taking account of local cultural views, but rather of the incorporation of distinctive new versions of the non-human into the self-other relation, with all that this entails for definitions of the social, sociality and politics (de la Cadena, 2015a, 2015b; Moore, 2012). Such a refashioning of the ethical imagination is simultaneously radical and very familiar. Many intellectual movements, religious beliefs, and popular ideas across the world and through history have found connection, inspiration, and solace in the notion of humanity embedded in a wider fundament. Often such ideas reprise and reflect each other, while remaining diverse in content, intent and consequence, and the familiarity

of echoed thoughts and orientations may go some way to explain the avid embrace of calls for reformed human/nature relations underpinning contemporary environmental and climate change politics. It is a feature of social life that our most intimate self-other relationships are energised by visions of the world outside them, just as our connections with international capitalism, global warming and planetary boundaries take form within the specifics of work, sex, food, and leisure (Moore, 2020). We understand this intuitively when we think of how many are inspired by the climate emergency to become vegan and simultaneously change their relationship to their own bodies and to that of the planet. It is evident then that when we speak of the ethical imagination – the many framing devices we have for understanding and experiencing self-other relations – it is never just a matter of the local and the cultural. It is also equally apparent that the ethical imagination develops and changes as a response to certain historical challenges (Moore, 2011), and is therefore fully engaged in how we envision planetary regeneration and socially just futures.

New ethical sensibilities are empowering alter-globalisation movements and climate activism, stretching notions of care and relationality to confront long established forms of violence and exclusion as evidenced in the Black Lives Matter protests and the powerful demands for restitution and recognition in the face of the exclusion and dispossession of indigenous peoples (Crook et al. 2018). A manifest demand to ‘defamiliarize’ and ‘deterritorialize’ our mental habits (Braidotti, 2017, p. 89, 2019, p. 77) draws a clear link between the hierarchical, oppositional and domineering classifications of the human and non-human (Neimanis et al. 2015, TallBear, 2015), and the brutal violence of systemic exclusion and dispossession (Yusoff, 2019; Wynter, 2003). Lack of recognition coupled with ideological suppositions about human societies and their progress makes for long histories of exploitation, dispossession, and political and economic marginalisation. The desire for non-violent and less destructive relationships with the planet and all other earthlings (human and non-human) (Haraway, 2016) requires a definitive move away from masculinist, instrumental and productivist modes of domination, and the dehumanising effects of dominant masculinity. Yet, while new forms of radicalism may be seeking more life-enhancing connections to the natural world through the development of alternative social and ecological relationships (Sachs, 2017), there is considerable disquiet and justifiable anger about an Anthropocene politics that fails to register its own erasures and subjugations (Yusoff, 2019, p. 12)

Black, feminist, indigenous and posthumanist scholars have all argued against the exclusionary and universalising category of man contained within the Anthropocene vision of a natural world reshaped by humanity. The current ecological emergency is a crisis of inequality, dispossession, subjugation and

non-recognition (Montenegro de Wit, 2020, p. 100) and not just because the poor of the global south suffer most under climate change and its precipitating factors, but because the foundations of the extractivist, productivist, masculinist model are scaffolded upon systemic structural disadvantage and exclusion. Without examining the history of the framing of non-white as non-being in the extractive onslaught that has produced the material outcomes relabelled the Anthropocene, there are few possibilities to interrogate anew how regimes of production, extraction and consumption were built on the desecration of others' lives and their losses (Francis, 2020). The Anthropocene as a framing device and a boundary object is producing both subjects and material worlds, fundamentally shaping the ways and means through which we can envisage alternative futures (Moore, 2016). Without examining its history of deadly erasure, enslavement and death the result can only be a failure to rethink the possibilities for genuine transformation and change, a 'rebirth without possibility' (Yusoff, 2019, pp. 8-9; TallBear, 2015), extending whiteness into the future (Erickson, 2020). The powerful point here is that colonialism and racism make possible the boundary marking of the very distinction between the human and the natural that now requires transcendence (Åsberg, 2017; Braidotti, 2013; Francis, 2020). There is a long history of environmental protection embedded in colonialism. We need to think forms of transformation and future possibilities that do not reinstitute the past: 'If the Anthropocene is viewed as a resurrection of the impulse to re-establish humanism in all its exclusionary terms of universality, then any critical theory that does not work with and alongside black and indigenous studies (rather than in an extractive or supplementary mode) will fail to deliver an epochal shift at all' (Yusoff, 2019, p. 18).

The Anthropocene and the manner in which it has entered into the ethical imaginations of different communities and polities around the world does provide an unparalleled opportunity to guide action, attitudes, choices, policies, and resources to develop a more just, ecologically diverse, and prosperous world. But how this will be done is a matter of great contention. Those who argue for a new social contract with the planet are often unwilling to adequately address the exclusionary terms of what they imagine to be the plural art of living and flourishing well with others where fossil fuels are the issue rather than politics. The result is a ghostly version of neoliberal wishful thinking where improving our relationship with the planet will have benefits for all. A world that is 'socially, ecologically and economically desirable is likely to differ radically from the world in which we presently live' (Bennett et al. 2016, p. 442), and this means not only are our collective futures constrained by the limits of our radicalisms, but also by competing conceptions of the good life. These differing conceptions do not just sit across obvious distinctions such as Euro-American versus indigenous, or Brown versus Green solutions, but drive fundamental cleavages between and within histories, politics, communities, regions and

intellectual movements, enlivening differences between competing visions of what a sustainable world should look like from agro-ecologists and ecofeminists to eco-modernists and techno-optimists (Hedlund de Witt, 2014; Pickerill, 2018).

The science of the Anthropocene moment is powerful and is used by most involved in the debate to discount or counteract the views of others, but scientific facts cannot resolve matters of politics and value. Better understanding of human-environment systems and their intersections across all scales, and how specific trends and drivers operate is of fundamental importance, but it cannot provide answers as to how to make trade-offs or who should decide what course of action is taken or what counts as betterment of the human condition (Bai et al. 2016). One of the major difficulties with the Anthropocene is not only has human agency brought about a series of changes, but it has had a series of unintended consequences not all of which human actors are aware of and consequently cannot correct or ameliorate. Beyond this, the Anthropocene as a boundary object, - brought into being through a specific set of scientific framings – acts to drive further forms of human agency that are deepening and accelerating the co-evolution of social and environmental systems, driven in part by evolving scientific knowledge, complexity theory and systems thinking (Bai et al. 2016; Moore et al. 2014; Sharpe et al. 2016). These new forms of co-evolution are creating novel circumstances and intersections. New regimes of environmental forecasting and contests over the scientific evidence and its interpretation are giving rise to new forms of nature, framings of time and space and modes of politics (Lövbrand et al. 2015; Mathews & Barnes, 2016). This accounts in part for the fractious debates around the Anthropocene itself and whether it should be renamed as Capitalocene (Moore, 2016), Chthulhucene (Haraway, 2016) or Plantationocene (Haraway, 2015), and the increasing anxiety of whether as a boundary object it hinders or helps the swift action that needs to be taken . The Anthropocene will continue to be an emergent complex phenomenon and how we navigate it will depend on the kind of world we want to live in and leave for future generations.

The Anthropocene is not the only boundary object in contention. The notion of the planet itself, and revisions of human relations with it, imply a singularity in framing enhanced through scientific achievement that forecloses alternative ways of imagining the entanglements of natural and social worlds, foreclosing and/or reducing the range and viability of social and environmental futures that encode alternative meanings and political trajectories. It is not merely a question of who speaks for the earth, but which earth are we speaking about (Lövbrand et al. 2016). The future of the earth has to encompass a much wider range of knowledge traditions and communities so that we can enable larger imaginative engagements with forms of future flourishing. One of the key issues here concerns

presumptions of scale. Alternative knowledge traditions are very frequently consigned to the scale of the local, their relevance discounted when it comes to the grand challenges of whole system change. This is particularly apparent with regard to notions of sustainability and their recent reformulation in terms of planetary boundaries and their maintenance (Biermann and Kim, 2020; Rockstrom & Klum, 2015). Questions of sustainability always presuppose values, and in consequence solutions which provide justice for some may well generate injustices for others (Whyte, 2020), while failing to recognise alternative knowledges, perspectives, and experiences (McGregor et al. 2020; Samuel, 2019; Williams, 2018). The role of indigenous and local communities in managing biodiversity and climate change, and the significance of their knowledge systems and intellectual framing devices and boundary objects are still under recognised and deployed (Crook et al. 2018; Etchart, 2017; Hill et al. 2020; Sobrevila, 2008; Virtanen, 2020). While making up just about 5% of the human population, indigenous people protect over 80 percent of our planet's remaining biodiversity (Raygorodetsky, 2018). The embedded and localised character of that knowledge is once again both lauded and disregarded. Developing mechanisms to learn effectively and collaborate positively with alternative knowledges, visions and experiences is a crucial part of developing sites of resistance and forms of experimentation to develop innovative formulations for future flourishing where diversity is key (Blok & Jensen, 2019).

3. Treating the Earth like Dirt

Clearly future flourishing on a regenerated planet involves the realisation of a world that is better than the present one, it thus encodes notions of progress. For all the critiques of progress in recent years, there are few ways of expressing human betterment – and now indeed planetary well-being – that do not bring it back into focus. All the communities of the world have rights to a better quality of life (Waas et al. 2011), but they start from very different places precisely because older notions of progress and modernity structurally required systemic inequalities to function, extracting value from some locations, processes, materials and lives and depositing it elsewhere. Sustainable development as popularised in the 1990s in development thinking was aimed at meeting the requirements of the present without compromising the needs of future generations. As a framework and as a set of practices, it had the potential to drive economic and environmental reform, but in reality, it served to justify the actions of those pursuing sustained economic growth. At its heart it contained a contradiction as to whether development and environmental concerns contradicted each other, often leaving go of any commitment to environmentally sustainable development in favour of development as the capacity for sustaining growth in material production and consumption or successful development

arrived at through achieving modernisation as an objective (Daly, 1996; Escobar, 2011, 2019); the sustainable and the successful became intertwined, if not interchangeable formulations, with predictable results (de Sousa Santos, 2018).

The notion of growth as progress is deeply sedimented in Euro-American thought, and recent critiques have been voluminous. Post-World War II, most countries of the world have been committed to economic growth measured by GDP. Despite recent and much welcome steps towards social wellbeing, inclusion, equality, good health, opportunity and quality of life (Fioramonti 2017; Green et al. 2020; Hepburn et al. 2014; Jackson 2016; Legatum Institute 2020; Moore 2015; Moore & Woodcraft 2019; OECD 2020; Stiglitz, 2019), policy initiatives around the world are still focused on economic growth as the key measure of success, accompanied by improvements in productivity and efficiency. The covid 19 pandemic has laid bare the structural frailties and systemic injustices of social systems built on economies of optimisation and extraction; and yet, alternatives to inexorable economic growth are deemed unfeasible; capitalist realism holds sway (Fisher, 2009). Neologisms offer promise – inclusive growth – but deliver little change. The underlying momentum in the current construct we know as the economic system continues to incentivise resource efficiency and use those gains to drive further growth in production squeezing the maximum value from each resource asset. Governments determinedly speak of productivity gains and the curse of low productivity, trying to find ways to extract more from each unit of labour. GDP as the measure of growth and market activity propels these forms of extraction, but this adherence to productivism has not brought well-being or quality of life for many, propelling detrimental consequences for the environment, undermining employment through deskilling and flexibilization of jobs, and driving declines in incomes, health and security for ordinary communities (Foster, 2018).

Where we see this most dramatically is in the context of our food systems, and this is why reflecting on how we might institute change in our agricultural systems provides us with a potentially productive lens through which to view the scale and significance of the challenges we face. Agriculture is one of humankind's oldest pursuits, one of its most innovative and one of its most destructive. Contemporary food systems – at least since the second world war and the following crisis of hunger and nutrition – have been built on the super scale realisation of productivity and efficiency employing technological means, including mechanisation, non-organic fertilisers, and chemicals. In the case of modern agricultural systems, the goal is to extract the maximum yield per hectare and to drive down costs; producing more with less. This has sometimes been termed competitive productivism and with monocropping, specialisation, intensification, non-organic fertiliser and pest control measures this is leading to

increasing pressures on the environment, rising levels of toxicity, declining biodiversity and augmented threats to future food production and food security (Khoury et al. 2014; Lawrence et al. 2013). In the global south, development programmes and policy are still focused on agricultural productivity and market integration measured by growth, cost efficiency and high yields at the expense of quality of life and ecological wellbeing (Lunn-Rockcliffe et al. 2020). Small scale farmers around the world are being driven off the land as increasing concentration of land and other productive resources is driven by processes of accumulation and expansion. Key to the justification of such dispossession is the culturally prevalent connection – across a wide spectrum of cultures – that modernisation and efficiency are the hallmarks of progress, and low-yielding farms need to function like high yielding ones.

Contemporary food systems are extractive economies on a grand scale, with their true costs externalised, living on borrowed time. Today agriculture is the largest consumer of the world's freshwater resources, and more than one-quarter of the energy used globally is expended on food production and supply (Dunkelman et al. 2018). It is now widely recognised, if little acted on, that the pursuit of constantly augmented growth is not sustainable in the context of limited planetary resources (Biermann & Kim, 2020; Raworth, 2017; Rockstrom & Klum, 2015). The health and environmental costs of global agriculture now exceed the market value of all that is produced (Benton & Bailey, 2019). There is an urgent need to reprioritise and rethink our agricultural futures, and this will involve sundering the connections between productivity, efficiency, optimisation and progress (Benton & Bailey, 2019). There are considerable grounds for hope in that various arguments about the necessity for increasing productivity, efficiency and optimisation in agriculture and the economy more broadly are being routinely challenged across a wide spectrum of policy, civil society and community spaces (de Molina, 2019; Food and Agriculture Organisation [FAO], 2018; Lunn-Rockcliffe, 2020). This is accompanied by a detailed questioning of the subordination of natural ecosystems and human social and cultural life to economic reasoning, extractivism and efficiency precisely because markets cannot be relied on to deliver justice, sustainability and value pluralism (Bliss & Egler, 2020), nor to safeguard natural resources and shared public goods. Where there are differences in status, wealth and power between and within communities and regions, economistic rationalisations and poor trade-offs are prevalent (Adams, 2014). Future human prosperity and flourishing cannot be based primarily on extracting value from the land to guarantee economic growth and most especially when the fruits of that growth are unequally distributed and are successively degrading the natural resources on which continuing human life depends.

While it is evident that our food systems are driving climate change and biodiversity loss, and degrading soils and ecosystems, biodiversity loss also applies within agriculture and many historical food stuffs are no longer consumed. This is of concern not just because genetic diversity makes food systems more resilient to climate change, pests and pathogens (Benton et al. 2021), but because in addition to the reductions in biodiversity, optimisation of single food crops has reduced the forms of human knowledge that allow us to work with mechanisms for enriching diversity. For example, in the upper reaches of the Huangpu River, 60 km south of Shanghai, a long history of traditional Jiangnan-style farming involving resource saving and locally adapted agricultural practices was based on deep local understandings of soils and water resources. Farmers dredged mud from the Huangpu River and used animal manure and human waste to fertilize the soil, achieving very high yields without damaging the health of the land or exceeding its production capacity. Resilience in the system involved adopting external innovations as well as passing knowledge from generation to generation (Liu et al. 2016, pp. 1-2). Starting in the 1980s, many of these practices were abandoned due to China's state-led economic and land reforms, the intensification of agricultural production, new irrigation systems, and increased usage of chemical fertilizers and pesticides, declining farm labour in an aging population, and the hollowing-out of rural areas (Sanders 2006a, 2006b; Van der Ploeg et al. 2014). Despite growing contemporary demand for more organic and healthy produce from urban centres, reintroducing traditional practices such as the application of river mud, combined with innovative techniques for future sustainable farming scenarios in the region, would require not only cross-sectoral collaboration between different stakeholders in China, but also "a shift in perceptions of farming, [and] the willingness to engage in cross-generational learning" which has been lost (Liu et al. 2016, pp. 20-21).

Food is about a metabolic exchange with nature, and the links between environmental degradation, monocropping, declining soil fertility, non-organic fertilisers, agrobiodiversity reduction and the impoverishment of farmer's livelihoods have been framed in terms of a metabolic rift (Schneider & McMichael, 2010; Wittman, 2009). This is best conceived as a breakdown not just in terms of nutrient cycles, soil fertility, biodiversity etc, but also in knowledge sharing and transfer and in social and political relations. Agroecological approaches to repairing this rift have gained traction in recent years and have been proposed as a means to transform food systems, ecosystem health, household nutrition and food sovereignty (Bezner Kerr et al. 2019a; FAO, 2018; Gliessman, 2018; Wezel et al. 2020). The guiding principle of agroecology is to mimic natural ecosystems, but it involves more than the implementation of practices such as recycling, reduction of inputs, diversification of resources and species, and soil enhancement. It also encompasses the application of new

principles for the redesign of farming systems (Nicholls et al. 2016; Rosset & Altieri, 2017). Endowing landscapes and communities with greater resilience, well-being and health has become especially important in the light of the covid pandemic and the links between the origin and spread of the pathogen and deforestation, monocropping and systemic inequalities (Altieri & Nicholls, 2020; Montenegro de Wit, 2021).

Animal, human, and ecological health are closely linked, and future agricultural systems need to minimise health risks to humans, non-humans, and the planet, but they also need to engage with and amplify emergent and future modes of productive entanglement between human and more-than-human flourishing. Evidence shows that agroecology can increase crop yields, improve production resilience through diversification, augment diets and income, reduce farmer dependency on inputs, conserve biodiversity and mitigate climate change. In Tigray in Ethiopia, crop yields of cereals and pulses have almost doubled using agroecological practices such as composting, water and soil conservation, agroforestry and crop diversification (Lappé, 2016). Diverse landscapes also support a larger range of economic activities such as tourism, craft production and beekeeping (Garibaldi & Perez-Mendez, 2019). Intervening in agricultural systems through agroecology cascades benefits through multiple intersecting environmental, social, and economic dimensions. But designing diversified farming systems is not a matter of one size fits all, of a single set of processes and interventions. Agroecology has to be closely adapted to local material, environmental and social conditions, with detailed attention to microsites across soils and landscapes.

Thriving in and through conditions of diversity entails close attention to how interventions can most productively intervene in the enmeshed space of human and more-than-human relations. Agroecology is now a global social movement involving indigenous communities, farmers, activists and scientists, as well as international agencies like the FAO, local governments, civil society organisations and business (de Molina et al. 2020; Lunn-Rockliffe et al. 2020). It is not a matter of just returning to traditional knowledge, but of reanimating its productive potential in concert with emerging multiple forms of knowledge and social relations at the local level. Recent work has shown that it is not enough to apply agroecological principles and practices in the hope of regenerating landscapes and community well-being because in situations, for example, where women do not control land, harvests, and income they do not necessarily benefit in terms of improved livelihoods. In addition, tasks such as mulching and composting which are essential for agroecological techniques can fall disproportionately on women, increasing their workload and exacerbating gender-based violence. Labour and decision-making are key microsites for building food sovereignty and individual and community wellbeing (Bezner Kerr,

2019b), and agroecology requires attention to social innovation as well as ecological.

Similarly, in many colonial contexts in Africa, the British strongly discouraged local practices that served to maintain soil fertility and dietary resilience, including shifting cultivation, fallowing, use of ash and manure, weeds, and crop residues, disrupting the productive potential of landscapes further by actively promoting male labour migration. Post-colonial regimes maintained their commitment to maize monocropping and subsidised non-organic fertilisers, while allocation of land to parastatals and political allies resulted in land dispossession for many small farmers (Moore, 2018; Davies & Moore, 2014; Moore & Vaughan, 1994). Current attempts to repair the metabolic rift through agroecology must acknowledge the complex consequences of colonialism and slavery and their permutations in the present. As suggested earlier, pathways to sustainable and just food systems have to envision racial relations and systemic injustice as fundamental in repairing the social, political and epistemic dimensions of the metabolic rift (Montenegro de Wit, 2020).

Effective transition and transformation in food systems thus involves questions of social justice and self-determination, but it fundamentally requires a new approach to how social-ecological worlds are made, expanding notions of belonging, care, and sociality beyond human worlds. Agricultural productivity understood as an ethic of care across the human/non-human, local/planetary divides could and should reconfigure the broader context of value chains and investment that structure food systems. Imagine if you will a set of concerted actions based on disinvestment in food systems that do not adhere to planetary regeneration, biodiversity, and climate resilience, as has been done with fossil fuels. Any envisioning of alternative, de-colonial futures for agriculture must start with rethinking multi-species entanglements and relationships, involutions as Myers has described them (Myers, 2017), conversations in the sense given by de la Cadena (2017), or relations of care in Puig de la Bellacasa's formulation (de la Bellacasa, 2017): where ongoing, improvised, experimental encounters can take shape as human and non-humans involves themselves in others' lives in deeper and more productive ways.

4. Growing the Future

There is no doubt that we are inhabiting the ruins of progress in terms of the dominant frame in which it has been understood since the eighteenth century. Focusing on agriculture is salutary here because modern food systems are failing to sustain both people and the natural resources on which they rely,

representing an existential threat to us all. Consequently, agriculture and food offer a strategic location for ethical, social, and political action in the Anthropocene. But, how to make better nature and human/nature relations is a fraught empirical and political question.

As suggested throughout this article, it involves recognizing that humans and non-humans are enmeshed in complex social, ecological, and technological systems. In so far as agroecology is one possible mode of intervention in charting a course towards future flourishing, it must be envisaged as a specific assemblage of plants, people, soil, fertiliser, technologies, animals, fences, and infrastructures both material and social. As such it is not a single set of practices or outcomes, but rather a set of relational achievements specific to each context for which diversity is the watchword. It is not a return to a past, to indigenous knowledge or to pre-existent nature. It is a novel amalgam of diverse knowledges, including science, of political and social practices, of forms of governance, and of relations of care and attention linked to future flourishing (Šūmane et al. 2018). Its aim is the shaping of emergence, the drive towards richer permutations in relationships between humans and the many others who share the planet together. As a story of unfolding relationality, its fecundity is allied to forms of sharing that enhance complexity.

Constructing liveable futures requires unearthing violently erased practices, wisdoms and knowledge (Myers, 2017), the historical lifeworlds of what de la Cadena calls the 'Anthropos-not-seen' (de la Cadena, 2015b). This process is fundamental for the envisioning of future flourishing in a manner that allows for and requires the simultaneous disruption of the present. Modern science and technology are part of this process too. Moving definitively away from productivism and extraction as forms of progress overweeningly committed to efficient optimisation and the asinine goal of outsmarting nature does not mean embracing a form of luddite politics which cuts the world off from advances in health care, technology, learning, systems thinking, ecology and more. It does mean creating spaces 'where diversity, pluralism, and contending perspectives are present on their own terms but also deeply invested in engaging others in creating and sharing information and knowledge' (Sardar & Sweeney 2016, p. 3). The process of sharing has to be set within broader goals and value systems, and as noted earlier there is currently little consensus as to what these should be, and divisions are further exacerbated by power, elitism, corporatism, greed, and systemic injustice. What a focus on agriculture and food affords is a shared space for debate over these issues, and more than that a set of potential shared practices that can translate into a shared understanding of nature, of the new forms of human and more-than-human interaction required, and of visions for future flourishing. Shared understandings arising from practice create new imaginaries, new ways of relating to self and other, new forms of the ethical imagination.

In this context, productivity has to be rethought as relationality rather than as extraction or optimisation. If there is to be progress it is in terms of deepening complexities that enhance future flourishing, where prosperity is an emergent property of complex systems (Moore & Mintchev, 2021). These forms of relationality should include and draw sustenance from the many elements of life already created through sharing and diverse forms of sociality, including social and cultural resources like open-source software, scientific knowledge, libraries, dance, and platforms for indigenous knowledge and languages. A renewed relation of humans to the planet has to include all these elements, they have to be harnessed as opportunities for realising desirable and plausible futures. In this context of renewal and enhanced complexity productivity is not an output but a process, a form of productive entanglement that creates new forms of relationality and must necessarily include the material and the non-material, the biotic and the abiotic, expanding the remit of what we understand by the terms sociality, knowledge, nature, ecology; breaking down old binaries.

If there is to be a good Anthropocene or even a post-Anthropocene, it will have to be a diverse one, there are only multiple futures for future flourishing; these enhanced forms of relationality will arise in complex locales and spaces, and will not necessarily share similar theoretical or ideological foundations (Bai et al. 2016; Bennett et al. 2016). Where hope resides is in the fact that new practices of care for non-human others and the planet will generate new forms of agency and politics (Sharpe et al. 2016), as well as new forms of the ethical imagination that will drive further entanglements and transformations; changing the very conditions of change itself. Indeed, they are already doing so. Key to such processes will be keep the uncertainty of the outcomes visible, to invest in experimentation with the potentialities of diversity, to ensure that we do not reduce the future down to formulations of progress or sets of development objectives, to render power explicit, and to continually interrogate terrains like gender and race that hold concrete material, social and ecological implications (Preiser et al. 2017). The role for the social sciences and humanities here is to enable the creation and interrogation of these processes rather than merely describe them. To do this effectively it will be necessary to continue to inhabit the ruins of progress, eschewing the turn to finalised solutions and outcomes, resolving challenges rather than seeking resolutions, committing to the sustainable emergence of alternative ways of being.

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