

Food production and Afrikan metaphysical thought in the time of polycrisis

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Increasingly, societies are becoming aware of the ecological impact of the industrial agricultural complex (IAC) and how it contributes to the deepening context of a polycrisis. However, its impact, and by extension, our impact on the soil microbiome in particular has received scarce attention in the field of environmental ethics, and even less so from an African thought perspective. As such, this article explores the question: how could we justify and then defend the moral value of microcosmic life in relation to other-than-human life from an African thought perspective? In order to do so, it will advance a framework for contemplating the problem of microcosmic harm, analyse two approaches for understanding our relatedness to the world in the literature on African environmentalism (complex relationism in the work of Mogobe Ramose and Afrispiritual relationism in the work of Laurenti Magesa), develop an account for understanding the moral status of microcosmic life between the two approaches, and use this account to respond to the problem of microcosmic harm. Here, it will be argued that an obligation to abandon our current IAC food system in favour of transitioning to an agroecological food system exists and that fulfilling this obligation offers African societies an opportunity for both righting historical injustices and preventing future ones. In doing so, this article proposes a link between how systems of food production are organised and how systems of subjectification are organised, or, that we are how we grow what we eat.

Introduction

From the perspective of biophysical processes, it is true that we are what we eat. At least, in the sense that each day we ingest of the land, in the form of air, water and food, to fuel our internal metabolic processes in their initial and ongoing (re)constructions, if not in a vividly material ontological sense where food becomes us, and so we are it. But what of how we grow our food? Does it in some way reflect or inform a part of who we – human society – are or have become? Does the impact of our food systems on the planet mirror something of the social institutions and injustices from which they emerge?

To interrogate these questions, I must first establish an understanding of the modern food system and its general history. Today, where genuinely ecologically sensitive indigenous agricultures once stood, an imposed corporate colonial food system now dominates how the food that becomes us is grown. Eurocentric colonialism and coloniality have successfully disjoined the people and the land, spiritually, mentally and physically through the unjust destruction and marginalisation of the “Afrikan” indigenous land relationalities that defined a diversity of precolonial food systems, replacing them with a violent, mechanised production paradigm in the form of the industrial agricultural complex (IAC).

The IAC is the coercive-productive sub-structure of the corporate colonial food system. Perpetuated on the back of several pervasive fallacies¹, it includes large-scale industrial farms,

1 Outlined by Andrew Kimbrell (2002) in the edited volume *Fatal Harvest: The Tragedy of Industrial Agriculture*, the “Seven deadly myths of industrial agriculture” are that: it is the best way to feed the world; it produces safe, healthy and nutritious food; it produces cheap food; it is efficient; it offers people more choice; it benefits the environment and wildlife; and that its problems will be solved by advances in biotechnology.

multinational agribusiness corporations (supplying agrichemical inputs), and soft-commodity traders. These stakeholders all collaborate with intergovernmental organisations under capitalism² to lobby governments and policy makers alike to further legitimise, propagate and support their ecologically devastating mode of food production. These market-government linkages are well documented (Shiva 1991; 2000; Cronin 2013; Clapp 2018; Giraldo 2019; Lauber et al. 2021; Navdanya 2022).

Furthering the “green revolution” narrative in agricultural development,³ the production techniques of the IAC are characterised by artificial inputs,⁴ tillage,⁵ industrial scale production systems,⁶ genetically modified organisms,⁷ monoculture cropping strategies,⁸ and high capital outlay and labour requirements in relation to landmass. These characteristics are also shared by concentrated animal feeding operations.

Over the course of this article, I will consider the philosophical implications of the impact of the IAC from the perspective of “Afrikan” metaphysical⁹ thought to sketch out the links between how we grow what we eat and who we have become. Specifically, I will look at the IAC’s impact on the microcosmic community – a term I use for all the tiny beings (from earthworms to nematodes and mycelia) with which we cohabitate the Earth.

Before continuing, it ought to be noted that the complexities arising from my departure from the terms “Africa”, “African” and “African philosophy” – using the terms “Afrikan” and “Afrikan thought” – do not escape me. And so, I think it necessary to offer some brief justifications for both my choice of terms and my affinity for perspectives out of Africa.

First, regarding my choice of terms and what I mean by them: politically, I use the term “Afrikan” as opposed to “African” as a point of politico-epistemic rebellion to both the invention of “Africa” (Mudimbe 1988) and the marginalisation of its ways of knowing as not constituting “philosophy” proper (Ramose 2015; 2018; Dladla 2018) through the discursivity of Eurocentric conceptions of philosophy in the canon formation of “professional academic philosophy” as a discipline (Graneß 2015). Epistemically, I use the term “thought” to place my work within a post-disciplinary

2 In today’s context, the term capitalism is insufficient to describe the “glocalised” patterns of production, consumption, accumulation, domination and control which determine through power-relations how societies are organised from the perspective of political economy. More accurately, I would describe it as a loose intermingling and overlapping of neo-imperialist tendencies (Enfu and Baolin 2021) that relate various forms of extractivist (Chagnon et al. 2022) neoliberalised surveillance-capitalisms (Zuboff 2019; Hofmeyr 2022) and techno-feudalism (Varoufakis 2023) under a regime of hollow democratic liberalism, ineffective multilateralism and ecological apartheid ruled by white supremacist “petromasculine” (Daggett 2018) patriarchs. It is a self-terminating system that debases the environmental substrate for its existence (Thorson 2019; Marques 2020).

3 Vandana Shiva (1991, 22) describes the “the green revolution” as “a technopolitical and technoscientific economic strategy for peace aimed at creating the conditions of abundant living in terms of food by attempting to go beyond the limits and variabilities of nature”. However, this is not how it has unfolded in practice globally.

4 Such as various fertilisers, pesticides, herbicides, and fungicides, each with their own unique damage to soil ecosystems (McKenny 2002; Moore 2002)

5 Such as ploughing and levelling the soil, adding agricultural lime and sulphur, or soil quality additives like vermiculite and perlite in massive quantities, each of which “redesign” soil ecosystems to their detriment (Warshall 2002).

6 These include the use of highly specialised tractors, combine harvesters, planters, seeders, and additive applicators.

7 Or GMOs are laboratory-modified crop varieties genetically selected to enhance favourable traits or introduce genetic characteristics not found in natural variants such as herbicide resistance and dwarf varieties which mature more quickly, introducing both health and environmental hazards into agroecosystems (Moore 2002). This characteristic of industrial agriculture also includes the industry’s reliance on and abuse of intellectual property laws in regard to GMOs (Shiva 2016a).

8 Monoculture or duoculture systems refer to farming operations where operators plant the same crop variety, or rotate between two varieties, in the same field year after year. The result of this is a gradual degradation of soil carbon levels and biodiversity (Norberg-Hodge 2002; Jacques and Jacques 2012).

9 I will be using the term “metaphysics” under erasure. This is to indicate its insufficiency, parochialism and limited descriptive value in the realm of Afrikan thought where, as will be shown, concepts that would usually be seen as purely metaphysical from a traditional philosophical perspective, such as identity, time, space, or causation, overflow the metaphysical from an Afrikan perspective to include aspects of the political, ethical and ontological. What I am engaging as Afrikan metaphysics ought not be understood as relating to the metaphysical, as in the suprasensible, though it does have a bearing on it. Rather, what I am relating is a way of knowing and being rooted in a complex cosmology that is at once physical, metaphysical, ontological, ethical, aesthetic, political and epistemological.

framework (Sayer 1999; Darbellay 2019) to avoid the reductive tendency I associate with the type of disciplinary parochialism that pervades the academy today.

Following Chimakonam and Ogbonnaya (2021), I understand such parochialism as a function of coloniality, and my response to it as an act of “disbordering” in the process of decoloniality. Geographically, the perspectives I associate with short-hand “Afrikan thought”, at one level, are those attributed, following Magesa (2013, 3–4; emphasis in original), to the “world view or spirituality of the peoples of Africa *south* of the Sahara Desert”, who, despite their cultural plurality and difference in “practical expression” of beliefs, share a “similarity or sameness” when it comes to the “spirit and intention” or “core meaning and spiritual implications” of their world views.

Secondly, regarding my affinity for African indigenous thought systems, it appears, in light of the framework advanced by Horsthemke (2007) that I ought to provide a “suitable justification” in “degree, kind and context” as to why I have chosen to draw on indigenous knowledge sources. As to degree and kind, I have approached Afrikan thought as an embedded being in Afrika dedicated to learning from, observing, and engaging with the thought, both written and spoken, of Afrikans engaged in the study and/or practice of Afrikan ways of knowing, being and doing. The result of attempting to reconcile and integrate said learnings, through introspection and reflection, with my sense experience of growing in place in Africa, complimented by my learned skills of reasoning and my nurtured sense of intuition, is the perspective from which I write, understood as a perspective of Afrikan thought. As to context, I will note following here as the bulk of my contextualisation is contained in the body of the article: I have chosen to draw on Afrikan metaphysics, of both the Afrispiritual and the complex variety, because I perceive a need to urgently find pragmatic systemic alternatives that are already, in some sense, *aligned* with the spiritual-symbolic core of Afrikan thought and Afrikan peoples. I am in search of political *gestalt switches* (Naess 1989) linked to an ecological understanding of self that are intuitively accessible to, at least, the peoples of south Africa.¹⁰

My argument will proceed as follows: First, I will describe “the microcosmic harm problem (MHP)” and the concept of the polycrisis. Second, I will briefly introduce agroecology as solution to the MHP and frame its adoption as a moral obligation. Finally, I will engage two perspectives on relationality in African *metaphysical* thought to justify this framing as both a response to the MHP-polycrisis intersection and a paradigmatic shift in decoloniality the adaptation of society to climate change. Then I will offer some concluding remarks.

The problem of microcosmic harm

Until recently, very little explicit philosophical attention has been paid to the microcosmic community of life or our impact on them.¹¹ In response to this theoretical gap, I propose the microcosmic harm problem (MHP) to describe the precarious situation that our impact on the microcosmos has placed us in. Before describing the MHP directly, I will first consider the complex ecology of the microcosmic community that sits at its centre and then describe the fact of the harm being done to them. After that, I will briefly introduce agroecology as a solution to the MHP.

On ecology, complexity and microcosmic life

The biodiverse “small life” pluralities, of both fauna and flora, that I term the microcosmic community of life sit at the ecological base of the Earth-Life system.¹² They (re)productively emerge from tightly bound ecologies of critical functional importance.

10 See Ramose (2003), Chimakonam (2018), and Gwaravanda and Ndofirepi (2021) for relevant discussions on decoloniality and the need for resisting epistemic marginalisation.

11 Explicitly, it appears that only Charles S. Cockell (2004; 2005) and Anna Wienhues (2022) have rigorously considered microbial life as a site of ethical theorisation. However, implicitly, theories such as Jonathan Chimakonam’s conversational *Ohanife* (2019b), Aldo Leopold’s biocentric land ethic (1970), and Kevin Behren’s African relational environmentalism (2014) could all be argued to have attended to the phenomenal of microbial life. Even then, accounts that centre the microcosmic community as a morally considerable entity from the perspective of African thought are absent.

12 I use the term Earth-Life system to refer to the complex and interdependent totality of Earth’s biosphere. I annotate it as Earth(dash)Life – both with capital letters – to indicate the boundedness of Life and Earth, for all intents and purposes.

Table 1: Features of a complex system

Features of a complex system

1. Complex systems are characterised by richly-interconnected and organised components.
 2. Complex systems cannot be fully known.
 3. Complex systems are structured and self-organising/autopoietic.
 4. Complex systems exhibit emergent behaviour.
 5. Complex systems are incompressible due to the workings of a complex notion of causality.
 6. Complex systems are thermodynamically and organisationally open, as well as operationally closed and bounded.
 7. Self-organisation is the key feature linking the interrelations between systemic components to the emergence of a system, defined as a *unitas multiplex*.
 8. The component parts of complex systems have a double identity, an ethically consequential ontological “both/and” identity (as will be shown), irreducible to either themselves or the whole.
 9. Complex systems are non-additive due to how the parts and the whole are related.
 10. Complex systems are defined by organisational recursion, which implies that the identity of components and systems are coterminous.
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Microcosmic life, as “primary producers”, form the “lowest” trophic level, or bedrock, of the food web. They enable the living productivity of the biosphere through nutrient cycling and bioremediation processes.¹³ So, without them, nutrition availability at higher trophic levels decreases, which can cause food webs to collapse (Kumar and Sharma 2019; Cockell 2004). Ultimately, this impacts all higher trophic levels of the food web, including the tertiary levels where humanity finds itself. Beyond nutrition cycling, specific microbes also perform vital geo-chemical cycling processes¹⁴ that maintain the stability of the Earth’s climatic system and enable the liveability of the biosphere.¹⁵ In sum, the microcosmic community is the foundation upon which life on Earth persists. They are a testament to the autopoietic intelligence and creative power of nature as a complex system.

The term “complex system” is of great import and so I must briefly pause to explain it. I will be engaging the term through the lens of critical complexity theory, a field that philosophically reflects on the organisational character of complex systems, the likes of which could include anything from a concept to an ecosystem, or even something as seemingly mundane as a plant. Minka Woerman, a leading scholar in the field describes a system as complex, as opposed to complicated (Cilliers 1998; Poli 2013) if it exhibits all of the organisational features contained in Table 1 (Woermann 2016).

Complex systems, especially living ones like ecosystems, are “nested”, or fractal-like and recursive, meaning that they exist both as complex systems, emerging from assemblages of smaller complex systems, and are themselves inter-networked whole-parts of larger complex systems, adhering in some sense to the hermetic and earlier gnostic insight of “as above, so below” (Marvell 2016).

For example, human beings are complex systems who exhibit the features of complex systems at many levels. From the autopoiesis of cells emerge organs, and from them emerge bodies, and so on, up to the largest complex system relevant for this article – the Earth-Life system. Recursively,

13 Microcosmic life performs these functions both in and across ecosystems, terrestrially and aquatically (Kumar and Sharma 2019), including on and within the human biome (Durand 2022).

14 Microbiological life, including bacteria, decomposers and photosynthetic organisms, play a pivotal role in geochemical processes like carbon sequestration and nitrogen fixing (Fenchel et al. 1998; Kandeler et al. 2005; Madsen 2015).

15 The IAC’s impact on the geochemical cycle through the destruction of living soils is beyond the scope of this article, but it is intimately tied to the concept of how the treatment of the microcosmos reflects in global patterns of collapse. See Kopitke et al. (2021) and Richardson et al. (2023).

each system forms a whole-part of a larger system, each complex internally and related in complex ways externally.

As opposed to apprehending complexity like this, I argue that the methodological apparatus of the IAC operates from what Edgar Morin (2008, 39) calls “the paradigm of simplicity” to reduce the *complex* to the *complicated* through a process of disjunction and reduction. This paradigm approaches reality and all of its constituent parts as complicated systems, trying to encircle them with a sort of presuppositional logic that “puts order into the universe and chases out disorder” by “separate[ing] that which is linked (disjunction), or unify[ing] that which is diverse (reduction)” in order to create a singular law or principle of order (Morin 2008, 39). It manifests as a rationalisation drive (pathology) to “enclose reality in a coherent system” which designates anything that contradicts this system “as an illusion or appearance” (Morin 2008, 47).

The living soil, a microcosmos to microcosmic life, is ecologically understood as a complex system. Its organic fertility, for instance, is an emergent property of the totality of the interactions between the innumerable dense microcosmic community members and their relation to the various abiotic compounds and chemicals that make up the rest of the soil. The organisationally and thermodynamically open character of this system is what makes nutrients available for uptake at higher trophic levels. Principally, what makes a complex system complex is that its organisational character, being a product of dynamic and non-equilibrium autopoietic (re)configurations, renders it principally *unsolvable*.¹⁶

The fact of microcosmic harm

Moving from the ecology of the microcosmic community to how our food systems impact it, I can state the following with bountiful evidence: the IAC, in its attempt to reductively solve for things like weeds, pests, or increased yield through the gratuitous use of chemical inputs, harms the microcosmic community (and the rest of the living world) on a scale almost beyond belief.¹⁷

For insects, the largest members of the microcosmos, population changes over the last six decades indicate decreasing total biomass, increasing rates of endangerment and extinction and sharp declines in ecosystemic biodiversity.¹⁸ But, when it comes to the soil microbiome, data is less precise given the sheer volume and multiplicity of organisms ranging from fungi and nematodes to bacteria and archaea.

However, from two pieces of research on the link between soil carbon concentrations, soil microbial biomass and biodiversity in agroecosystems, we can infer a likely pattern of impact. The first from Bastida et al. (2021) shows a strong positive correlation between soil carbon content and both microbial biomass and diversity, though the correlation of carbon content to biomass is much higher. The second from George et al. (2021) studies the effect on soil structure and biodiversity under conditions of long-term carbon deprivation to “highlight concurrent collapse of soil structure and biodiversity” following such conditions. Causally, techniques characteristic of the IAC plant biomass from the soil, substituting it for artificial fertilisers and other soil additives (McKenny 2002). This starves the soil microbiome of essential organic carbon, the energy source for the soil food web that it transforms into nutrients for trophic uptake. In the long-term, as several other

16 Of course, future advances in technologies like quantum computing may change this fact, but even then, the ineffable may remain lurking beyond the model limits. This is why, for complexity theorists, any attempt to model a complex system must be aware that there may always be an *aneconomic* element in modelling, an *aporetic* relation of *différance* (Woermann 2016), for which the model cannot account, whether scalar, constituent, or because of some “spiritual knowledge that defies space, time, and causality” (Roothaan 2019, 267).

17 I understand that the term “harm” may be disputed, as some may argue that for there to be harm, there needs to be the capacity for suffering. I take a broader sense, that anything can be harmed when a violence is inflicted upon it. So, for instance, to break open a rock is a harm in as much as inflicting a knife wound on a child. Both involve a rupture, and a placing of the other in a position of inferiority, of being the one harmed, while maintaining the perpetrator in the dominant position as he who harms.

18 According to the Global Biodiversity Outlook published every few years as part of the United Nations Convention of Biological Diversity, as much as 70% of projected terrestrial biodiversity loss is driven by factors linked to agriculture (SCBD 2014). And in spite of plans to change this, “[industrial] agriculture remains among the main drivers of global biodiversity loss” (SCBD 2020, 13). Sanchez-Bayo and Wyckhuys (2019, 26–27) put it plainly: “The conclusion is clear: unless we change our ways of producing food, insects as a whole will go down the path of extinction in a few decades”.

authors concur,¹⁹ industrial agriculture creates the conditions for carbon deprivation, predisposing collapses in both microbial biodiversity and biomass.

Biodiversity and biomass loss reduce food web interactions and so limit the food supply for higher trophic levels, decreasing the energy flow in the entire system. As energy availability declines, the system's ability to adapt and evolve – its potential to do work or a measure of entropy – diminishes. Reduced energy availability signals entropic decline and a movement within the system towards equilibrium and an increased potential for collapse (Jordan 2022). In essence, declining biomass and biodiversity signify the degradation of a living system.

Though the IAC purports to limit its impact to farms, the MHP details what is not purely a local impact. As rains come, chemical inputs are washed into water systems and into water bodies, causing eutrophication.²⁰ Eventually, these chemicals flow into the oceans, accelerating algal blooms and the positive feedback loops that accelerate the process of ocean acidification.²¹ This is the nature of complex systems in their relation to one another – they are not closed or bounded, and so actions in one agroecosystem are seldom meaningfully local.

All of these impacts and knock-ons are, as argued by agrarian philosopher Wendell Berry (2002), among others, the result of approaching farming with an industrial as opposed to an agrarian mindset. A farm, to an industrial farmer, is a factory floor – *terra nullius*²² – devoid of productivity and ready for the hand of human “progress” to cultivate it. Farms are not seen as complex, agroecosystems, rather they are seen as restricted, complicated systems, mechanical in nature, disjointed and optimisable – especially those isolated parts that lend themselves to profitability. The living agroecosystem is materialised, analysed, mechanised and optimised to form a food production operation. This move reduces the farm from a living agroecosystem to a dead mechanical system, designed not to produce life but to produce *commodities*. The imposition of rigidly defined mechanical relationalities ignores the complex ecology of the system and the emergent cosmic beauty of both the system and its whole-parts.

To look upon a meadow and declare “this thing is valueless and unrelated, it requires my knowledge and control to cultivate progress and productivity” is, as acclaimed agricultural activist Vandana Shiva (1991; 2000; 2016b) argues, to declare a state of “ecological apartheid”, a way of seeing the world rooted in the epistemic arrogance of Eurocentricity and the concept of *terra nullius*.²³ It is an extension of the concept of “progress as ideology” (Ani 1994, chap. 9) to the aggrandisement of the human ego at great detriment to the microcosmic world, and in turn, ourselves and all life who rely upon this world's existence. This, uncoincidentally, is the same mindset that declared Africa empty of peoples, knowledges and civilisations, and therefore ready for colonial cultivation. I can now turn to describing the MHP directly.

19 For instance, Kenneth Timmis and Juan Luis Ramos (2021, 769) provide extensive evidence for their claim that “planet Earth is currently experiencing an unprecedented crisis of soil deterioration, desertification and erosive loss that increasingly prejudices the services it provides”. Other authors who concurrently see similar patterns of impact in soils as a result of industrial agricultural practices include Christopher J. Rhodes (2017), Burrell et al. (2020) and Cavicchioli et al. (2019). Some, such as de Lorenzo et al. (2016, 618–619) conclude that “sudden shifts leading to catastrophic biodiversity decays” can be predicted from our knowledge of the current state of ecological fragility and collapse in various ecosystems.

20 Eutrophication refers to a process where bodies of water become oversaturated with nutrients, such as nitrogen and phosphorus as a result of agricultural “nutrient runoff”, leading to the exponential growth of algae and aquatic plants. This can dramatically reduce oxygen levels in the water, endangering aquatic life and dysregulating ecosystems (Ansari et al. 2011).

21 Algal blooms (or the rapid accumulation in algae in aquatic ocean ecosystems) and ocean acidification are complex interlinked ecosystem disruptions linked, in part, to eutrophication (Hudnell 2008; Cai et al. 2011). See n. 20.

22 The use of the term *terra nullius* here is appropriate and takes from Vanada Shiva's usage (Shiva 2016a; 2016b; Hilberg 2022). Jurisprudentially speaking, *terra nullius* was the legal doctrine by which the early imperial and colonial ventures classified the “lands of discovery” as “nobody's land”, and thereby invalidated or wrote out of existence the rights of indigenous and first nation majority peoples to their land upon the arrival of the conqueror (Pheko 1991). In this same sense, land that was already inhabited by beings in their own right, indigenous communities in the jurisprudential use and biodiverse communities of other-than-human nature in our current usage, is rendered empty and open for domination by the same logic, the enunciative reduction from *Terra Mater* (Mother Earth) to *terra nullius*.

23 See n. 22.

The microcosmic harm problem and the context of polycrisis

The MHP is humanity's complex relationship to the microcosmos as one of food web dependency. Yet, as if in ignorance of this, the dominant food production matrix catastrophically harms the microcosmic substrate upon which human civilisation exists in a parasitic relationship between the human economic superorganism²⁴ and nature.

The MHP is compounded by: a) the nature of the problem in that it is fundamentally systemic and complex; b) the existence of power asymmetries, which protect the narrow institutional interests that advance and entrench the IAC paradigm; c) the attainability of mounting a timeous and scalable resistance; d) the catastrophic potential of not addressing it, given the historically precedented probability of civilisational collapse as a result of soil depletion;²⁵ and e) the broader context of the polycrisis.

Polycrisis, as defined by Mark et al. (2024, 10) represents “a ‘state’ in which multiple, macro-regional, ecologically-embedded, and inexorably interconnected systems face high – and advancing – risk across socioeconomic, political, and other dimensions”. Importantly, it is the “causally entangled” nature of these systems that allows for cascading and mutually reinforcing risks to develop (Lawrence et al. 2024). The IAC is the point of intersection for the MHP and the context of the polycrisis as both the reason for the existence of the MHP, a major source of greenhouse gas emissions,²⁶ and the structural contributor to multiple crises in health, from obesity to disease.²⁷

Addressing the MHP against the backdrop of its intersection with the context of the polycrisis is thus of interest to us as a species, and specifically to us as philosophers, many of whom have forgotten the social conscientisation function of philosophy that landed Socrates before the Athenian jury. This is made all the more urgent and unambiguous by the 2019 scientific consensus statement titled *Scientists’ warning to humanity: microorganisms and climate change*, which declares: “Ignorance of the role of, effects on and feedback response of microbial communities to climate change can lead to our own peril” (Cavicchioli et al. 2019, 582).

Agroecology and obligation

What the previous section served to do is make an argument for the existence of a harm, the degree of which is already severe but becomes catastrophic in light of the asynchronous causality introduced by the context of polycrisis, that our choices today are existentially consequential for the future.²⁸ This raises the questions: should we do anything, and can anything be done? I argue that something ought to be done, but that the stakes posed by the MHP point towards the existence of an obligation for something to be done urgently.

To this end, I add to the chorus of food systems thinkers (Anderson et al. 2021; Ruben et al. 2021; Verharen et al. 2021; Niggli et al. 2022; DeClerck et al. 2023) and advocate for the urgent

24 Lisi Krall (2023a, 10; 2023b, 4) defines an economic superorganism as “the economic system put in motion with the practice of grain agriculture in humans and fungi production with certain insect species”, which form an emergent but “cohesive whole brought about by agriculture and the architecture that underlies it”. Economic superorganisms are characterised by their propensity to develop self-referential and expanding feedback loops between how food is produced, population size and the division of labour. She uses the term to describe the complex and self-organising agricultural system supporting global capitalism (see n. 2).

25 The propensity for civilisational collapse because of environmentally unsustainable soil practices and erosion is not a novel phenomenon. David Montgomery (2007) devotes a full volume to the issue and Joseph Tainter (1988) examines it as a part of his larger study into the collapse of complex civilisations, finding that wrong agriculture predisposed societies such as the Mayan civilisation of Mesoamerica, the societies of the Hohokam region in the American south-west, the Northern Hopewell and Cahokia civilisations of the Mississippi River basin, the civilisations of Mesopotamia, and the Roman Empire to collapse.

26 Industrial agriculture accounts for roughly a third of all greenhouse gas (GHG) emissions (Crippa et al. 2021) through its fossil fuel use for trucks, tractors and shipping, and the Haber-Bosch artificial fertiliser production process (Shiva 2008).

27 Agrichemicals impact a wide variety of creatures, including microbes, soil flora and fauna, insects and birds (Ingram et al. 2002; Moore 2002; Moreau et al. 2022), while also causing multiple negative human health effects (Brevik et al. 2020; Rani et al. 2021; Van Bruggen et al. 2021).

28 Stephen Gardiner (2011) refers to instances of these choices, such the pursuit of low cost maize today through IAC frameworks, as “temporally diffuse front-loaded goods”, meaning that their benefits are afforded to the living, but their severe costs accrue to the yet-to-be.

adoption of an agroecological approach to food production at a systemic level.²⁹ This approach mimics the natural relationships between parts of the agroecosystem, through a return to indigenous farming practices renewed and codified through contemporary ecological sciences at the small- and micro-farm scale, to regenerate biodiverse ecosystems and create food sovereign communities (Anderson et al. 2021). It is most clearly differentiated from the IAC by the ecologically sensitive character of its food production techniques,³⁰ the upstream value-chains of its inputs,³¹ the quantity of its water requirements,³² the carbon character of its operations,³³ the nutritional content of its output³⁴ and its capacity for addressing inequality.³⁵

Beyond the obvious pragmatic sensibility of an agroecology paradigm when compared to an IAC paradigm of food production, I consider this transition as more than the choice to take up an ecological solution to a biophysical problem. Concomitantly to being a pragmatic choice, I frame the transition as morally obligatory. To justify why, I now turn to two perspectives in Afrikan thought on the interconnected and interdependent nature of reality. As will be shown, agroecology is congruent with both a complex and an Afrispiritual understanding of the soil microcosm, revealing it as part ethical-spiritual praxis informing how we ought to treat the soil and part pragmatic response to an ideological problem with ecosystemic implications.

African metaphysics and two perspectives for understanding it

Thanks to the nature of the systems in question and the institutional histories of colonialism and coloniality from which they emerge and concretise in power-knowledge-relations, conforming my discussion to fit within disciplinary boundaries would be a reduction, as my concern pertains to no discipline in isolation. Instead, the MHP is a *complex problem* that ought to be dealt with on complex terms.

As has been shown in the case of the MHP, disjunction and reduction in the IAC's mind-view run counter to the idea of nature as a complex system, revealing them as increasingly ineffective tools in providing adequate explanations for, and solutions to, complex problems and phenomena. To disjoin an ecosystem into parts, assert separateness as its nature, and then to narrowly solve for a goal like weed control using herbicides is to reduce the ecosystem to the sum of its parts and create

29 The adoption of agroecology is itself a complex problem, but some first steps would likely require political programmes such as land restitution, agroecological education, water infrastructure development and supporting financial mechanisms (Anderson et al. 2021; Niggli et al. 2022). Discussing these programmes in more detail is beyond the scope of this article.

30 For instance: where industrial agriculture would choose to irrigate soils with chemical fertilisers, agroecology would rather use techniques such as composting and mulching to nourish the soil and support the natural conditions under which the soil food web flourishes. Or, where industrial agriculture chooses to use herbicides and pesticides to control for unwanted plants and creatures, agroecology would use livestock integration, biocontrol via beneficial pest management and strategic companion cropping to help stimulate conditions unfavourable to the target species. Here, agroecology displays a sensitivity to the needs of the broader ecosystem (Anderson et al. 2021).

31 Industrial agriculture's inputs (see nn. 2 and 5) are purchased on an ongoing basis from increasingly globalised suppliers tied into highly centralised multinational production monopolies. Agroecology, alternatively, acquires its inputs (compost, mulch, seeds), none of which are chemical or environmentally destructive, from the agroecosystem itself. Where it cannot, agroecological farms cooperatively supplement their input requirements through local seed sovereignty and composting initiatives (Dale 2020; Amoak et al. 2022; DeClerck et al. 2023).

32 Agroecology uses substantially less water than most forms of industrial agriculture when compared to its nutritional output (Ringler et al. 2022). This is due to a combination of composting and mulching techniques with a focus on inter-cropping, multi-cropping, and the use of groundcover crops as opposed to monocropping commodity crops low in nutritional value like white maize. These techniques enhance soil carbon content and protect the soil from heat, both of which increase the soil's water-holding capacity. Most industrial agriculture decreases the soil's water-holding capacity through the practice of tillage and other techniques that decrease soil carbon content and expose the bare soil to heat. The industrial agricultural exceptions to the rule are advanced forms of hydroponic aquaculture that essentially form semi-closed water systems.

33 Agroecological farms are net carbon sinks, as opposed to net carbon sources (Villat and Nicholas 2024).

34 Agroecological farms harvest more nutritional content, but have less financial yield per land unit according to research produced by Navdanya (Shiva and Pandey 2006)

35 Industrial agriculture has an incredibly high capital barrier to entry due to the types of landmass, machinery and operating capital it requires to establish and run an industrial farm. As such, the "who" of "who can start or run a commercial farm" is usually answered on historically entrenched racial, gender and class lines. Agroecology, conversely, has a lower barrier to entry as it does not require most of the capital inputs of an industrial farm and can be practised on a much smaller area of land. See Neufield et al. (2022).

openings where a lack of sensitivity to the organisational character of complex system introduces negative effects.

I should not be taken as making the claim that there is no value in trying to understand reality using disjunction and reduction as *analytic tools*. What I am saying instead is that attempts to divide reality up into more accessible and understandable frameworks, and then proposing those frameworks as *the nature of reality*, fundamentally diminishes the meaningfulness of autopoiesis, introduces disorder, and disregards any alternative ontologies other than those which sustain said frameworks, including Afrikan cosmic ontologies of being, which will be the focus of this section. As daunting a task as it seems to engage this as a total problem, I argue that it is important to manage the tensions between part and whole in order to excavate meaning between them, while trying to make sense of their relatedness and its moral significance.

Stepping outside of Eurocentric frameworks, I now turn to Afrikan metaphysics as a system of being-knowing-doing that takes interrelatedness as its foundational premise to hold these tensions together without resorting to disjunction and reduction. In so doing, it begins in the fact of being with and within (Quin 2022) to offer us a meaningful way of knowing how we are related to the rest of being that immediately gives rise to ways of doing (ethical outlooks and behaviours) that are sensitive to the complex nature of reality. Briefly, I will first introduce Afrikan metaphysics before discussing two routes towards understanding it.

Afrikan metaphysics

In the view of Lebisa J. Teffo and Abraham P. J. Roux (2003, 196), Afrikan metaphysics offers “holistic explanations of the nature of reality”. Without resorting to the dualisms that are the “stock-in-trade” of Western metaphysics, at least since the time of Plato, they argue that Afrikan metaphysical explanations touch on a level of fundamentality beyond what science can engage the “enormous complexity of the universe” while “maintaining a strong empirical flavour” (Teffo and Roux 2003, 196). As primarily concerned with the “complex relationship[s]” between humans and the life-world in which they find themselves, Afrikan metaphysics makes it difficult, if not impossible, to “distinguish metaphysics, social theory, and morality in African thinking” (Teffo and Roux 2003, 198) thus making it a compelling lens through which to examine the MHP as itself a complex multifaceted and relational problem.

The holist nature of Afrikan metaphysics, rooted in complex ontology and African cosmology as will be discussed, purports the indivisible wholeness of being, comprising of inextricably bound visible and invisible elements. This often means that there are few purely metaphysical claims for African thinkers. Rather, in line with Francis Etim (2019), Lesiba Baloyi and Molebogeng Makobe-Rabothata (2014), Crispinous Iteyo (2009), Mogobe Ramose (1994; 2003; 2009) and Jonathan Chimakonam and L. U. Ogbonnaya (2021) – who concur with a holistic reading of African metaphysics – any statement of relation, such as ubuntu, a “continuity of being” or a “chain of being”, is not *just an idea* but an ontological reality and a kind of epistemic prism through which to understand the nature of being.

In this way, multiple prisms constellate with each other, and together recursively reflect on issues from a holistic perspective. And so, an insight gleaned in one prism reflects across the rest of the network just as a conversation between brothers informs each, and so each goes on to inform others. Thus, to comprehensively discuss one prism – say ethics – to the exclusion of others – metaphysics, epistemology, ontology, politics, and aesthetics – is not possible.³⁶ No prism or node of being/self is an island outside of being/self. Relationalism such as this is not merely a descriptive feature of things that exist in spatio-temporal proximity to one another, it is the fundamental nature of being and reality *at base – relation precedes both existence and essence* (Mbembe 2024).

One can see already how the mechanistic tendency of disjunction and reduction discussed earlier makes little sense from the perspective of Afrikan thought. When fundamental relatedness becomes

36 It should be noted that this perspective is not entirely unique to Afrikan thought, having been discussed for many decades in the field of environmental philosophy, not least in the work of Arne Naess on deep ecology (1989), Murray Bookchin (1982) on social ecology, and various scholars in ecofeminist ethics (Shiva 1988; Salleh 1997).

a way of knowing, how can one attempt to understand anything by imposing on it limits and boundaries, thereby divorcing it from the rest of being, or the cosmos, like the IAC attempts to do with the farm in relation to the agroecosystem? How can one pursue the narrow goal of weed-control through the spraying of herbicides without considering and being guided by the knowledge of relatedness? I will now explore two complementary but differentiated perspectives on relationality that I have identified in the literature: complex relationalism and Afrispiritual relationalism. While explanations of both will follow, it is important to know what differentiates and affiliates them at the outset.

In short, the perspectives of complex relationalism and Afrispiritual relationalism are differentiated by the religiosity and concomitant anthropocentrism of the latter. Their affinity and complementarity lie in their shared complexity on how differently situated epistemic bodies nonetheless meet ontologically in the recognition of both interrelated interdependence and individuality, echoing the paradigm shift towards complexity in ecological disciplines more broadly. So, while complex relationalism is by no means a-metaphysical, seemingly preferring a relational field ontology akin to that deployed by Arne Naess (1989) to any theology, it is a-religious. And, I argue, it is the proximity of the authors I would associate with Afrispiritual relationalism³⁷ to the church that explains why they read the anthropocentric Christian cosmological lexicon into their conceptions of relationality, while those in whom I identify complex relationalism do not.^{38 39}

Complex relationalism

“Complex relationalism” is how I articulate Afrikan metaphysical insights by using the language of critical complexity theory, borrowed from the work of Minka Woerman (2016) and her engagement with a range of post-structural thinkers, including Jaques Derrida (1978) and George Bataille (1991).

Critical complexity theory interrogates the relationship between the general – the broadest sense of economy consisting of the totality of any system, its sub-systems and its environment – and the restricted senses of economy – any constrained set of relations imposed onto a general economy (Bataille 1991; Woermann 2016). Importantly, it is restricted economies that cannot account for their aneconomic dimension and so are insufficient in explaining complexity. Rather, complexity aims at the relation between restricted and general economies. With this in mind, I turn to renowned Afrikan thinker Mogobe Ramose, as a prime example of someone that could be called a complex relationalist, and use the complexity language borrowed from Woermann to lend greater analytic depth to Ramose’s already inherently complex perspective by highlighting their conceptual overlaps.

In summary, Ramose puts forward the idea of using ubuntu – simply rendered in English as “humanness” – as a cosmological framework for considering the richness of ecology. He advances a

37 Alongside Magesa, I associate authors such as John Mbiti (1970) and Bénézet Bujo (1992; 1998) with the establishment and defence of African traditional perspectives on relationality, following Placide Tempels (1959). While they all approach the topic of metaphysics and the nature of things in relation to one another from a definitely religious perspective, it is the lifework of Magesa that reframed African “religions” as less religious and more spiritual. The difference is key: religions, which contain aspects of spirituality, are more institutionalised and define a “compartment” in a person’s life (e.g. prayer or church on Sundays), while Afrikan spiritualities describe ways of knowing and being by which the very concept of “a spiritual life’ distinct from any other kind of existence” is foreign (Magesa 2013, 5).

38 The nature of the point I am making must not be construed as ad hominem. Rather, it is one that consider the “nature of models and the status of models [in that] transforming unconditioned knowledge into conditioned knowledge is not only a technical exercise (involving skill and knowledge), but also a normative exercise (to the extent that the observer is implicated in her observations)” (Woermann 2016, 27–28). Modelers cannot help but implicate themselves in their models. And this is precisely what I argue happened in the case of relationality in the history of African thought. The progenitors of African religious philosophy, the cooking pot for what would discursively evolve into the study of African metaphysics, were overwhelmingly ordained members of the Catholic clergy (this includes the authors mentioned in n. 37). So, in so far as they had available to them the readymade classificatory blueprints of Catholic theology at the point when they began modelling Afrikan cosmology – a time before the idea of “conceptual decolonisation” (Wiredu 2002) – it is not an irrational jump to deduce that their Catholic education and experiences influenced the mind-views with which they returned to study the cultures of their birth.

39 The weight of the Christian lexicon in African theological articulations on the nature of being is something that Magesa (2013) would later problematise in his work *What is not Sacred? African Spirituality* when contemplating the phenomena of African initiated churches, and so I have preferred the term “Afrispiritual” to say “Afrithological relationalism” or “African religious relationalism”.

conception of being human as a “state of becoming, of openness, of ceaseless unfolding... [opposed to]... a condition of finality, a closedness or a kind of absolute either incapable of, or resistant to, any further movement” (Ramose 2009, 308-309), and then uses this conception to draw links in thought between African philosophy regarding the cosmos and ecology as a study of the organisation of physical nature.

Ubuntu, he writes (Ramose 2009, 309), “regards being, or the universe, as a complex wholeness involving the multilayered and incessant interaction of all entities” which is also “multidirectional”. This “primary observation... underlying all reality”, which he attributes both to African philosophy and the natural sciences in the quantum physics work of David Bohm (1980), is the *principle of motion*: “the universal indivisible principle on account of which a multiplicity and pluriformity of organisms come into being and pass away” (Ramose 2009, 309–311).

This insight is at once physical, about the mechanical nature of reality, and metaphysical, in its ability to account for the fact of matter and self-organisation, life and death, in the universe as a state of complex interbeing. The passage of time, the movement, emergence, decay, and dispersal of cosmic bodies, and the awakening of consciousness – all of these are understood as a “processual” (Ramose 2009, 309) “unceasing unfoldment” (Ramose 2009, 312), a never-ending recursivity between restricted and general economies of interbeing.

Ramose prefers the term “wholeness” to “a whole”, as the former “underline[s] and preserves the ontological primacy of the principle of motion and also stresses its ubiquity” (Ramose 2009, 310). In this sense, wholeness, characterised by motion, “cannot be divided into anything other than motion” (Ramose 2009, 310). So, the boundedness of reality as being to which there is no outside implies an operational closedness by which all entities affect all other entities, each in a state of being-with-being and being-within-being. Moreover, the relationship of one being to another and of both to being itself says something descriptive and normative about their relatedness.

Ramose takes the insight of wholeness further, however, when he evaluatively states that – regarding the relationship of humans to physical or objective nature – “to care for another, therefore, implies caring for physical nature as well. Without such care the interdependence between human beings and physical nature would be undermined”. Caring here is framed as a “natural duty” to “maintain a comprehensive but specific relational condition among organisms and entities... a balance between human beings and physical nature” (Ramose 2009, 310).

Wholeness as experience, Ramose warns us, is fallible – the observer who declares it may yield to dogmatism and authoritarianism by modelling human experience as the total economy of being or “standing at the centre of the universe” and thereby elevating the self to an underserved and unjustifiable position (Ramose 2009, 309). Here, Ramose acknowledges the ethics of complexity and the complexity of ethics, taking up a self-critical position in relation to the system being modelled by problematising the relationship between subject and object and the impossibility of maintaining the subject-object dichotomy between the general and restricted sense of economy (Woermann 2016).

From conceptualising ecology through ubuntu, Ramose draws out three insights that feel reminiscent of the features of a complex system set out in Table 1. The first concerns motion as the principle of being for which Ramose holds that “there is never a final immutable whole but only enduring and transient wholes always governed by the principle of motion responsible for change” (Ramose 2009, 311). Being, in this sense, is principally emergent and self-organising in its thermodynamic and organisational openness. The second regards dignity, for which Ramose holds that it can “best be understood in terms of relations with other human beings as well as relations with physical nature” (Ramose 2009, 312). Take for example the bee and the flower: their relatedness and co-mutuality is integral to our understanding of either and both, without which they make less sense. Rich interconnectedness lends itself to a relational sense of identity. The third insight regards “mutual care and sharing”, understood from “the decentred self’s point of view [as] the most realistic orientation to life in its wholeness” (Ramose 1994, 67; 2009). This insight grounds Ramose’s request that we decentre the human from our conception of being, as human-centredness blinds us to that which is peripheralised by it, such as microcosmic life.

Finally, the concept of wholeness and the indivisibility of reality present in Ramose's writing showcase his own rejection of the paradigm of simplicity, something he portrays as a feature of African philosophy that is relevant to our consideration of the microcosmos and its relatedness to us. We see the inherent complexity of this perspective in Ramose (2009, 312) when he writes that

[r]eductionist, fragmentive and empiricistic rationality continues to make great advances in the sphere of technology. In the process, advances have resulted in serious disturbances to the ecology, thereby disrupting the precarious balance between the human being and its environment. This loss of balance constitutes a violation of ubuntu. It is also an indication of the need to restore *motho* in the sphere of the relations between human beings and physical nature. This is the ecosophical dimension of the proverb *motho ke motho ka batho*.

Afrispiritual relationalism

Deepening the theme of African cosmology and its foundational role in Afrikan metaphysics, I now turn to a second perspective for understanding relationality in African thought in the work of Tanzanian Catholic theologian Laurenti Magesa. Magesa (1997, 35–36) talks about the role of supra-terrestrial entities in the cosmology of African religion through the theological concept of a “hierarchy of being”. For him, the “[African] people's way of life” flows from God, or the “Great Ancestor, First Founder and Progenitor, the Giver of Life, the Power behind everything that is”, to the ancestors who are its custodians through the passing down of traditions, and who are embodied in the land as the spiritual root of being made tangible in the world.

The hierarchical arrangement of being is understood from the African cosmological perspective in terms of the “flow of vital force” – the fundamental energy that permeates and binds all of existence with and within God. Vital force is most concentrated in God, the highest of beings, and diffuses into each tier of being within him, becoming less concentrated as it descends the order of being in the arrangement God, ancestors, spirits (forests, rivers, sacred sites), tribal elders, adults, children, animals, and the rest of nature. This emerges from a cosmology that recognises the universe as a relational “composite of divine, spirit, human, animate and inanimate elements, hierarchically perceived, but directly related, and always interacting with one another” where “humanity...is intrinsically and inseparably connected to all living and non-living creation by means of each creature's life force” (Magesa 1997, 39, 46; emphasis added). This amounts to a complex view on ontology, but through a Christianised Afrikan spiritual lens.

The maintenance and reverence of this order is taught and reinforced through traditions, ritual, and myths and stories rich in esoteric and symbolic content.⁴⁰ Adhering to the traditions results in an increase in overall vital force, or the abundance of life. One such tradition, practised by myriad tribes across the continent is the leaving of offerings of food for the ancestors, usually at shrines located at sacred sites, such as groves or rivers. Symbolically read, this tradition is a reminder to return to the earth part of what you take from it, also known as the bioremediation of organic carbon. This tradition thus acknowledges the chain of relation from which food emerges and back into which it must go. Breaking of a tradition, or say, cutting down a sacred tree or ignoring the instruction of a rainmaker as to where one can or cannot allow cattle to graze, is considered taboo, and would provoke a response from the ancestors (Madavo 2019).

The status of microcosmic life in Afrikan metaphysical thought

Let me now compare these two approaches and how they would respond to the MHP. Complex relationalism advances an ontologically grounded conception of being as a self-organising complex whole without recourse to religious language, as is the case with Afrispiritual relationality. And so, it does not require there to be a Supreme Being to understand the nature of the relationship between all that there is, such as the intimate relatedness of the microcosmos and humanity. Though, it

⁴⁰ The philosophic study of esotericism is still in its infancy, but one can look to Podolecka and Nthoi (2021) as well as the introduction to the collected volume edited by Finley et al. (2015) as entry points into the study of esotericism in African religions and African diasporic contexts.

also would not deny that being as *unkulunkulu* (the Zulu term for the great ancestors) or God so conceived could exist, as the ancestors are still a part of Ramose’s complex cosmology. While its strong rationality lends it to better academic study, from my experience in communities in South Africa, the complex reading lacks political pregnancy in its capacity for effective meaning-making. The Afrispiritual reading, however, connects more easily with *aBantu* in a way that the complex reading does not, owing mainly to residual proximity of sub-Saharan African peoples to its “core meaning and spiritual implications” (Magesa 2013, 3).

When considering the place of microcosmic life in relation to the decentred self, as the complex reading urges us to do when contemplating the world, the microcosmic community takes on an equal status of moral considerability comparable to any other living being in relation to being. Informed by the insights of ecology and biology, mountains and rivers by this approach become recontextualised as living ecologies, nested economies of interbeing in play between their general and restricted sense or dual identities as whole-parts.

Microcosmic life is thus recategorised from a descriptively identifiable component of the whole into a co-equal and co-constructed participant in the general economy of interbeing whose role in this economy is valued both for its instrumentality in enabling the rest of the “web of life” and for its individual value as any of its unique manifestations as relational in and of themselves. Microcosmic life is by this reading not only morally considerable by the fact of its existence, but morally considerable to at least the same degree as humans given the proportion of beings that it represents within the general economy of interbeing and the fundamentally supportive role that it plays for its siblings in the Earth-Life community.

Magesa, like Bénézet Bujo (2009), formulates African religion in a way that considers all life, no matter how small, as something that ought not be treated arbitrarily or subjected to disregard, disrespect, or destruction, moreover, then he acknowledges the “spiritual significance” of the soil as the “dwelling place of all energies” and so must “enjoy an enduring relationship” and “be venerated without question” (Magesa 2013, 31). The centrality of the human is even tempered when Magesa writes in reference to Vincent Mulago’s (1969, 144) comment on “the genius of the soil” that “even though the first and most important participation of the human person is in and through one’s community, the community cannot be sustained without another kind of participation”, namely “the link which binds one to the earth, the economic ‘substratum’ or heritage” (Magesa 1997, 60). So, while microcosmic life harbours a lower density of vital force than say animals or humans, as Afrispiritualists we can see that microcosmic life is valuable both instrumentally, in that it plays a fundamental role in the production of vital force in the hierarchy of being, and non-instrumentally, as a created instance of vital force in much the same way as trees and animals.

It is clear that from the perspective of African thought, the microcosmos is morally considerable due to its relatedness to humanity and to the rest of the system of being, whether understood through complex or Afrispiritual relationalism. As such, harm to one instance of being reverberates across the network of being, and so the harm we do to the microcosmos is not only a harm to them, but also a harm to existence itself, conceived as a relational whole. It is no wonder then that a system that season by season relegates more living soil to lifelessness also serves year by year to create artificial scarcities and food deserts in a world where between 691 and 783 million people faced hunger in 2022, while food waste exceeded 17% of total production (UNEP 2021; FAO et al. 2023). If we were not already aware of how we grow what we eat, we are certainly becoming so.

The relational ontology of being immediately gives rise to an evaluative and normative position, because from an Afrikan **metaphysical** foundation, a statement about the nature of a thing is at once also a statement about everything else. The relationship of this conclusion to questions of fact/value dichotomies is otherwise irrelevant, as from a holist and relational ontological basis there is no gap between an “is” and an “ought”, for the nature of an “is” becomes an “is/and-is” in recognition of co-constitutive dual identities.

Contentions and objections

Before concluding, it is pertinent that I pre-emptively consider two major critiques levelled against Afrikan thought in relation to environmental ethics and account for them in light of the position I have advanced. The first, raised by the likes of Nisbert Taringa (2006), and Kai Horsthemke (2015), concerns an *undeniable anthropocentrism* in African thought that ostensibly compromises its contributions to the fields of environmental and animal ethics. Horsthemke provides extensive examples to justify his case, which mainly focus on the concepts of ubuntu and *ukama*. Essentially, his argument is that no matter how you slice the cake, any discussion of value, duty, or obligation to non-human entities in African thought is ultimately, irreducibly, a discussion about human ends based in “a predominantly instrumental view of non-human nature” (Horsthemke 2015, 134). However, and as Horsthemke acknowledges, there are exceptions that do provide African ethical accounts that are “genuinely non-anthropocentric” (Horsthemke 2015, 140), such as Kevin Behrens’ (2010; 2014) anthropologist *African Relational Environmentalism* and Segun Ogungbemi’s (1997) theory of *nature-relatedness*, among others.

The second, raised by the likes of Thaddues Metz (2021) and Paulin Hountondji (1996), seeks to counter the “default position” (Metz 2021) among African philosophers that metaphysics is capable of grounding ethics, outlined and defended in a volume edited by Elvis Imafidon and John Bewaji (2013). They argue that according to the principles of logic, a normative or evaluative claim (like a claim of right action) cannot immediately arise from a purely ontological claim about the nature of things. Or, put more simply, an “ought” cannot logically arise from an “is”, and so arises what is commonly referred to as the “is/ought” gap. A complete response to either of these contentions would exceed the scope of this article, however, I will offer brief responses to both.

Regarding the charge of anthropocentrism, I contend that the MHP presents to Horsthemke’s argument a case for which it cannot account given his narrow focus on human-animal relationships – he does not consider microcosmic life in making his case – as opposed to the broader interdependent relationality of all beings in the Earth-Life system. The depth of relatedness as an organisational characteristic of all beings in relation to one another and to being is uniquely showcased by an analysis of microcosmic life such as I have provided.

What is of consideration here is not a human-centredness, though I will not deny its presence in the political motivation with which I have arrived at the MHP, but rather a relation-centredness that elevates discussion of how we are to manage the metabolic interaction of human society and the system in which it is enmeshed. Moreover, it is not just human life but all life that relies on the presence, diversity and health of the communities of life that occupy the lowest tropic level of the food web.

With that in mind, the instrumental value of the microcosmos is beyond question; however, what changes in how my position is structured is that their value is not only because of their instrumentally supportive role, but also because, as members of the biotic and the cosmic community, they have a relationally grounded inherent value. There is no causal reason, from the perspective of African thought, why their value would be fixed in a mutually exclusive way and cannot emerge from both lines of reasoning complementarily (Sogolo 2003). Furthermore, the accusation of anthropocentrism loses momentum rapidly when the solution I have offered is an ecologically sensitive curative to the prevailing anthropocentrism of the IAC.

Regarding the is/ought problem, I contend that applying it to Afrikan thought betrays a methodological error and epistemic misunderstanding of African thought and the logic with which it apprehends the nature of reality. By privileging principles of logic and analytic methods that are rooted in ontologies described by Francis Etim (2019, 12) as “alien to African conceptual scheme[s]”, proponents of the is/ought gap perpetuate a type of epistemic coloniality. As substantively discussed by Jonathan Chimakonam in the development of his theory of *Nmekòka* metaphysics,⁴¹ the issue here can be summed up as “the penchant for carrying the logic of [one] system into a different system and attempting to employ it to assess the assumptions of the new system” (Chimakonam and Ogbonnaya 2021, 21–22). Like Chimakonam, I agree that one must attempt to understand

41 *Nmekòka* metaphysics is supported by the *ezemezu* system of trivalent logic (Chimakonam 2019a) and the conversational method of philosophy (Chimakonam 2017)

the internal rationality of an idea in the system of thought from which it emerges, as opposed to approaching it with an external standard. As such, it is only when we depart from a system of binary logic, to embrace an African system of logic grounded in a trivalency, such as *ezumezu*,⁴² that the idea that a normative claim can follow directly from a metaphysical claim in a given context achieves a sense of rationality.

So, in the argument I have made, a metaphysical claim about the nature of microcosmic life is not just a descriptive claim about microcosmic life, it is also a contextual ethical claim about the relation of microcosmic life in the Earth-Life system conceived complementarily as both a complex and Afrispiritual system. Both positions maintain the same core insight as to the nature of things: a thing is not only *a* thing, but it *is/and-is* also a thing in ontological relation to other things that in turn *are* themselves, but *are/and-also-are* constitutive of each other and of the thing that is. From this state of relationality immediately arises a strong ethical claim that a harm to one is a harm to all, and that a catastrophic harm to one, like the MHP, is a catastrophic harm to all, and this obligates the sentient among the cosmic community to act.

Conclusion

What I have covered over the course of this article is the impact of how we grow what we eat on the microcosmic community and two Afrikan metaphysical perspectives for understanding why I framed transitioning our food systems away from the IAC paradigm as an obligation. However, I feel that a step back from the microcosm to the realm of the political is important to return our focus to the reality of food production in relation to pragmatically addressing the polycrisis and opening up the space for further research at this intersection.

There is an unfortunate but increasingly real overlap between how we grow our food and how we metaphorically “grow” ourselves, making food production like water, a mirror of society and how it (re)produces atomistic subjectivities through a reductive and disjunctive materialist economic paradigm. Here, the IAC can be framed primarily as a mechanism for producing commodities under capitalism, much like the growing majority of contemporary social institutions. Take the higher education system as a site of “knowledge work” as an example. Far from producing well-rounded humans equipped to deal with the challenges of life today and suited to find a healthy balance in their careers, Benda Hofmeyr (2022) argues that universities under neoliberalism (re)produce knowledge workers – capitalist subjects encircled in the production of the knowledge commodity – whose value is determined by their ability to self-govern and maximise their productivity, often to the detriment of their own well-being. Hofmeyr’s theory plausibly accounts for both the rate of burnout among knowledge workers, and the growing gap between the quantity and the quality of “knowledge” produced. This arrangement, I argue, is changing the nature of knowledge.

Globally, the paradigm of simplicity manifests as naïve techno-scientific optimism⁴³ and the gradual enclosure of all life within the “secular”⁴⁴ framework of the materialist physicalist

42 *Ezumezu* “is a trivalent truth-glut system” of logic that develops the dominant bivalent system of logic by introducing a third value (truth-glut) that can sustain the dialectical tension between true and false as complements of one another, representing a value both true and false (Chimakonam 2021). The system is aimed at establishing the “context dependence of values” as opposed to absolute value, as is the aim in binary systems of logic. What this means is that something cannot be absolutely true or false, but that its truth value only becomes fixed in consideration of a specific context.

43 Social philosopher Daniel Schmachtenburger defines naïve-techno-optimism (contra realist-techno-optimism, and contra both realist- and naïve-techno-pessimism) as a sub-set of the cognitive biases that support optimistic attitudes towards the progress narrative as a whole and so commit themselves to the self-justifying “goodness” of scientific progress. Naïve-techno-optimists believe that technologies, in the broadest sense (including social technologies like capitalism, democracy, language, etc., technologies of self – see n. 46 – and technological advances, like those at the forefront of industrial agriculture) are making the world undeniably better without factoring in “the costs and the sustainability of the story” (Hagens 2023).

44 Nevidita Menon (2023) provides a broad look into the political deployment of “secularism” from a Global South perspective. She frames secularism as a misdirection that obfuscates the values on which it is established and marginalises the spiritual and religious values associated with the non-secular other, thereby creating a framework for coercive norm enforcement that denies its own value-base in Eurocentric modernism.

“sciences”. Using ever more intimate governmentalities,⁴⁵ this creeping line of epistemic enclosure represents the frontline for resisting the colonisation of nature and difference. Functionally, the Eurocentric *utamawazo* (Ani 1994) has struggled to accommodate the creativity of complex systems, from agroecosystems and the human psyche to knowledge itself, and so renders them as seemingly controllable but complicated systems using techniques of reduction and disjunction.

However, when wielded by the IAC under the ideological guise of rationality and progress, these techniques functionally (re)organise indigenous agricultural relationalities and replace them with industrial agricultural relationalities; only the former apprehends the cosmic whole and displays a sensitivity to the needs of the microcosmic community. This recursive displacement of the holistic with the atomistic serves no being’s interest except for those of the IAC. Agroecology, then, is a form of biopolitical resistance to the destruction of life by reclaiming the various technologies of self⁴⁶ which have been co-opted by those who have either directly advanced or tacitly endorsed the IAC and the corporate colonial food system more broadly.

Fundamentally, these institutions have distorted our relationship with the land, and with it, our relationship with ourselves and with each other on both an ontological and spiritual level. Against this context and supported by two approaches to relationality in Afrikan thought, I put forward agroecology as a way to rekindle that relationship.

First, using a complex perspective, I showed how land represents the point of biophysical enmeshment that binds humanity metabolically into an ever-unfolding process within reality as a cosmic whole. Here, a harm to the microcosmos because of its fundamental and equal boundedness is a harm to all of life. Agroecology, by halting the harm done by the IAC to it through an awareness of complexity, also halts the harm to everything else.

Second, using an Afrispiritual perspective, I showed how land is the spiritual substrate of self by which humanity is connected to the ancestors, and through them, to everything else and also to God. Thus, to reduce the land to a factory floor, to see it through an industrial eye, is to deny its spiritual significance, and this is taboo. Land here is considered holistically and thus includes substantive harm {to?} microcosmic life with the bounds of land-abuse taboos. From this perspective, agroecology is an act of what Bujo calls “anamnestic solidarity” – a palaver process where *praxis* meets *poiēsis* to engage the wisdom and experiences of the ancestors in “making present [their] ethical experiences” (Bujo 2001, 34).

As I have shown, how we treat microcosmic life when we grow what we eat is a recursive reflection on who we are and what will become of us. Framing agroecology as a form of ethical-spiritual-praxis by way of Afrikan metaphysics is key as it enables us to holistically respond to the MHP and the context of the polycrisis in a way that acknowledges both the pragmatics of ecological interconnectedness and the politics of cosmic or spiritual interconnectedness. This

45 Governmentality and governmentalities are frameworks introduced by Michel Foucault (2009) for analysing “a range of forms of action and fields of practice aimed in a complex way at steering individuals and collectives” (Bröckling et al. 2012, 1). Governmentalities are means by which the relationships “between power and subjectivity” and “techniques of power and forms of knowledge” mediate “techniques of rule...tied to “technologies of self” [through] specific types of rationality, regimes of representation, and interpretive models” (Bröckling et al. 2012, 2. See n. 46). When looking at microcosmic life in the governing of agriculture and the rendering governable of populations, governmentalities allow us to excavate “the systemic ties between forms of rationality”, such as the paradigm of simplicity, “and technologies of government”, such as the regimes of governmental agricultural regulation that disproportionately support and entrench the IAC at the level of “micro-practice” ascending to that of “macro phenomena” (Bröckling et al. 2012, 12). These relationships form the biopolitical conditions in which “truth claims” are produced, such as those that the IAC uses to justify its proliferation (Kimbrell 2002), and from which “power effects” emerge to produce “selective” food production knowledges and technologies (“practical processes, instruments, programs, calculations, measures, and apparatuses making it possible to form and control forms of action, structures of preference, and premises for decisions by societal agents in view of certain goals”) (Bröckling et al. 2012, 12). The concern is with the real of the political, specifically the politics of food production, and “how it is produced in the first place” (ibid.).

46 Technologies of self, a term borrowed from Michel Foucault, are “ways that people in Western culture develop knowledge of themselves” and include: (1) technologies of production, which permit us to produce, transform, or manipulate things; (2) technologies of sign systems, which permit us to use signs, meanings, symbols, or signification; (3) technologies of power, which determine the conduct of individuals and submit them to certain ends or domination, an objectivizing of the subject; (4) technologies of the self, which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality (Nilson 1998, 97).

is why I argue that we are how we grow what we eat – the organisational character of our food system determines more than just how we produce food. This mindset shift pushes us to solve for a food system that prizes mutual and harmonious co-existence in the Earth-Life system, while also creating new pathways for being-knowing-doing differently in how we respond to the climate crisis.

Necessarily, transitioning to an agroecological food system means returning land to the people and dismantling the IAC as the first steps in salvaging a liveable future for Afrika. However, as Afrikan metaphysics reveals, this is not just a matter of sustenance or survivability – cosmically narrow ends in themselves – it *is/and-also-is* about changing the conditions that prefigure how our society constructs subjectivities, from the microcosm to the macrocosm. Agroecology, as a morally obligatory alternative to the IAC paradigm, represents a chance for humanity to reinvigorate indigenous land relationalities in the time of global polycrisis, and support communities' mental, physical and spiritual duty to (re)produce themselves in relation to the cosmos.

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