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Arora, S. & Van Dyck, B.

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Refusal as Radical Care? Moving Beyond Modern Industrial Agriculture

Saurabh Arora and Barbara Van Dyck
Email: s.arora@sussex.ac.uk

Saurabh Arora
Affiliation: University of Sussex (UK)
City, Country: Brighton, UK

Barbara Van Dyck
Affiliation: Centre for Agroecology, Water and Resilience, Coventry University (UK)
City, Country: Coventry, UK

Abstract
In this contribution we approach the refusal of modern industrial agriculture, as an act of radical care. We begin by recognizing the unprecedented crises of biodiversity losses and climate disruptions, amidst widespread inequality in a global pandemic, which are linked with modern agricultural development. This development is underpinned by the objectification of 'nature' that is designed into strategies and technologies of extraction and control like chemical pesticides, synthetic fertilizers, hybrid seeds, genetic engineering and digitalization. Refusal of strategies and technologies of modern objectification, we argue, is an act of *radical care* that is geared towards nurturing alternatives grounded in the Earth's pluriverse.

Keywords: refusal, modernity, objectification, control, radical care, decoloniality, pluriversal agroecologies

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Introduction

Just under a decade ago, Louise O. Fresco, the current vice chair of the scientific group of the United Nations Food Security Summit (UNFSS) made this global claim: 'Our food is safer and our diets are more diverse than ever before; production methods are becoming increasingly sustainable, clean, and efficient; and we are constantly becoming better at protecting biodiversity'.[2] It is interesting to contrast this with a report published in *Science* three years earlier, in which Butchart et al. (2010: 1164) concluded that 'the rate of biodiversity loss does not appear to be slowing' since 2002 when world leaders had committed to stem biodiversity decline.

The continuing destruction of biodiversity has been highlighted by many reports in recent years. For example, at least 30% of the world's tree species are now reported to be threatened

[2] https://www.project-syndicate.org/commentary/how-technological-progress-can-help-to-feed-the-world-by-louise-o--fresco?, accessed 24 September 2021.

with extinction (BGCI 2021). Other estimates show that 40% of the world's insect species may be extinct in a few decades (Sánchez-Bayo and Wyckhuys 2019). Confirming these biodiversity losses, the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES 2019) warns that roughly 1 million species of animals and plants in the world are threatened with extinction and that the current rate at which species are going extinct may be 'tens to hundreds of times' higher than the average rate over 'the last 10 million years'. It is not surprising then that most biologists now concur that the world is undergoing a mass extinction event, the first one in 66 million years (Wagner et al. 2021). Critically linked to these extinctions is modern industrial agriculture (Sánchez-Bayo and Wyckhuys 2019; Wagner et al. 2021), which used a whopping 6 million tonnes of toxic pesticides globally in 2019 (increasing from roughly 3 million tonnes in 1990) (FAOstat 2021), and which received over USD 100 billion in annual subsidies from OECD countries alone (IPBES 2019).

Against this backdrop of biodiversity crises unfolding at the same time as worsening climate disruptions (IPCC 2021), and a COVID pandemic that shows the life-threatening effects of global inequality (Amnesty International 2021; Makau 2021), the UNFSS was organized for September 2021 with the ambition to 'feed hope for a better future'.[3] However the hope it feeds is little more than a technocratic push for 'science-driven innovations' like 'bioscience and related digital innovations' (von Braun et al. 2021a: 2).

Perhaps to fend off critique from civil society organizations and social movements like *La Via Campesina*, the UNFSS' scientific group also talks about 'traditional food system knowledge' and makes a call to strengthen 'research cooperation between science communities and indigenous peoples' knowledge communities' (von Braun et al. 2021a: 2). However, the latter communities are approached through the lens of 'multi-stakeholderism' which denies that they differ from a multi-national corporation or a nation-state (Canfield et al. 2021). Entirely missing thus is a discussion of how this multi-stakeholder table is asymmetrically structured by five centuries of colonial curtailing of multiple 'indigenous' cultures and their intercultural relations (Wolfe 2006; Arora and Stirling 2021). In the 420-page Science Reader produced by the scientific group of the UNFSS and partners (von Braun et al. 2021b), colonialism is invoked briefly as a driver of inequality that marginalizes Indigenous People, but the ways in which it has pervasively structured the modern world and its techno-scientific pathways is left out of the picture.

Colonial Designs of Modernity

The Mexican philosopher Enrique Dussel (1993) is one among many southern scholars who argue that colonial pillage and genocidal violence since 1492 were central in giving 'birth' to the modern world. For example, it is through such pillage of an estimated £9.2 trillion (equivalent to $45 trillion today) between 1765 and 1938 (Patnaik 2018), that India's share of the world economy shrank from pre-colonial 24-27% to just 3-4% in 1947 (Mukherjee 2010). Alongside pillage around the world, European colonialism enslaved and indentured millions to labour on monocultural plantations and mines (Manjapra 2020); appropriated and deforested 'indigenous' lands (Saravanan 2018); controlled 'traditional' governance processes (Mamdani 1996); destroyed diverse knowledge traditions (de Sousa Santos 2007); extended heterosexual patriarchy (Lugones 2007); and much more besides, in order to realize what is widely called the modern world (Bayly 2004). Eurocentric framings routinely obscure

[3] https://www.un.org/press/en/2021/sgsm20899.doc.htm

this colonial constitution of modernity (Bhambra 2007), since Max Weber's (1930 [2001]) classic thesis. Situating the *'universal rationality'* of emancipation at its heart, Eurocentrism attaches modernity to industrial progress based on science and technology and to bureaucratic and juridical institutions that protect the rights of the individual 'man'.

Such claims to rationality were argued to be little more than hypocrisies, by many anticolonial movements and intellectuals, at least since the start of the twentieth century (Du Bois 1903; Gandhi 1909; Césaire 1950; Fanon 1961; Head 1974). Modern claims were seen as hiding in their folds the multiple injustices of colonial dispossession and racism. Ongoing forms of dispossession and institutional racism in modern societies are once again foregrounded by movements like Black Lives Matter, Niyamgiri, No Dakota Access Pipeline, Rhodes Must Fall, Alliance for Food Sovereignty in Africa, and Brazilian movements of Quilombos and Landless Workers.

Far from being universal, thus, modern progress and rights are revealed as selective, designed to serve those who are projected as 'superior' through colonialism, on the bases of race, nation, religion, class and gender (Quijano 2000; Lugones 2007). This is now plain to see in the 'vaccine apartheid' that is unfolding to tackle the COVID pandemic (Byanyima 2021; Amnesty International 2021). Colonialism's structures of power associated with racism, nationalism, Islamophobia and classism constitute ongoing *coloniality* (Quijano 2000), which intersect with different cultures of patriarchy (Crenshaw 1991; Lugones 2007), to engender alternative modernities around the world (Gaonkar 2001). Coloniality of power that lies at the heart of the modern world is now ostensibly transforming itself towards climate resilience through setting net zero targets (Kothari 2021). Yet it remains unclear how any resilience can be realized without dismantling the structures of patriarchal coloniality, which shape modern *ambitions of supremacy and control* (Shiva 1988; Plumwood 1993).

These ambitions shape modern relations with 'nature', which is constructed as a fictitious realm of objects that lack agency beyond predictable mechanisms (Latour 1993). This *objectification* treats 'nature' primarily as a reservoir of resources that can be extracted without restraint, through the deployment of modern science and technology. The same objectification affords a callous lack of concern for the toxic trails of resource extraction that damages soils, rivers, lakes, springs, mountains, valleys, forests, and the plants and animals who live there (Merchant 1980; Arora et al. 2020). In modern industrial agriculture promoted through the so-called Green Revolution (Sharma 2019), objectification has enabled the development of irrigation technologies for unbridled groundwater extraction and of high-yielding varieties for treating living soils merely as containers for growing monocultures.

At the same time, objectification of 'nature' makes the development of toxic technologies an innocent act rather than a crime (Serres 1995). This presumed innocence is enacted in modern industrial agriculture through chemical pesticides and synthetic fertilizers, as part of the Green Revolution and its continuation in many forms and shapes, including 'sustainable intensification' and 'climate-smart agriculture' (FAO 2010; Pretty et al. 2011;). The Green Revolution and its later avatars have been promoted by states and corporations during the last six decades, in full knowledge of the toxic effects of their 'intensification' technologies, at least since the publication of Rachel Carson's *Silent Spring* (1962).

In general, these extractive toxic relations are justified in the name of eradicating hunger and poverty, as if modern industrial agriculture is the only possible way forward. This framing obscures and marginalizes *diverse agroecological alternatives* to the 'global' strategy of

modern industrialization of agriculture which continues a model of agricultural development put in place during colonialism.[4] To illustrate the coloniality of this agricultural modernization strategy, it is useful to once again turn to its constituting processes associated with objectification of 'nature'.

Objectification erects a categorical border between a singular 'nature' of nonhuman objects and multiple cultures of human subjects (Latour 1993; Arora et al. 2020). This nature-from-cultures bordering helps purify modern 'natural' science as objective, something that can be promoted as removed from any cultural influences. In sharp contrast, so-called indigenous, peasant or traditional knowledges are seen as situated in specific cultures and 'inferiorized' as partial and local (Agrawal 1995). For example, soil scientists and agronomists understand soil quality to be a function of levels of available nitrogen, phosphorus, potassium, acidity and alkalinity (Li et al. 2016). In contrast, peasants may know the 'same' soil's fertility by carefully observing its texture, colour and smell. While peasants' soil knowledges may be considered as culturally valid (Mazzucato and Niemeijer 2000), only modern scientists are seen as producing objective knowledge of nature to offer insights that are universally valid and complete (Benjamin 2015; Arora 2019). It is well-documented how this objectifying imagination is extended around the world, through modernizing development that is built upon the derision and destruction of alternative ways of knowing (see Sachs 1992; Escobar 1995; Agrawal 1995).

The same imagination of modernity's presumed superiority, lies behind the UNFSS promotion of 'science-driven innovations' (von Braun et al. 2021a: 2), while appearing to be inclusive of 'traditional' and 'indigenous' knowledge. This inclusive appearance fails to convince, as no specific indigenous traditions of agriculture are promoted by the UNFSS, despite the fact that more than 7000 languages and many associated ways of knowing continue to survive in the world. Diverse agroecological practices are still associated with these ways of knowing. They are largely ignored in official UNFSS processes,[5] or bundled into a technical innovation strategy focused on 'precision farming, Big Data, biotechnology, artificial intelligence, and other investor-friendly solutions'.[6]

The innovations that are explicitly favoured by UNFSS are thus based in modern techno-sciences such as bioscience and digitalization. In promoting these technologies, the UNFSS appears to be supporting the agenda of big agro-corporations. A former chief technology officer at Monsanto (now Bayer), Robert Fraley, had already claimed a few years ago that the 'next green revolution will supercharge the tools of the old one' (Folger 2014). If the old Green Revolution relied on extraction through conventional high-yielding and hybrid varieties, the new one will 'supercharge' through genetic modification and large-scale extraction and repackaging of data. The coloniality at play here is once again underpinned by objectification of nature, which paves the way for modern *ambitions to control* (Arora et al. 2020). Such control is geared towards achieving only what is intended, through a techno-scientific intervention, just like the flicking of a switch is expected to turn on an electric light (Stirling and Scoones 2020), without an accompanying spark or an electric shock.

[4] See https://www.scientificamerican.com/article/agroecology-is-the-solution-to-world-hunger/, accessed 22 September 2021.
[5] https://thecounter.org/united-nations-summit-protest-corporations-sustainable-future-global-food-systems/ accessed 24 September 2021.; https://www.scientificamerican.com/article/agroecology-is-the-solution-to-world-hunger/ accessed 22 September 2021.
[6] https://agroecologyresearchaction.org/peoplesknowledge/ accessed 24 September 2021.

A prominent 'supercharging' technology underpinning ambitions of the 'next Green Revolution' is genetic modification based on CRISPR-Cas9 (Doudna and Sternberg 2017). This technology is widely imagined as a pair of scissors that can cut a DNA molecule at any desired point, ostensibly to produce only the changes intended by biotechnologists, without any unwanted effects (Sirinathsinghji 2019). This control is already reported to be a fallacy. Many 'unintended effects' are now associated with the application of CRISPR-Cas9, including genetic modification in 'off-target species' and 'editing nucleases that induce double-stranded DNA breaks' in on-target species (Sirinathsinghji 2019: 2).[7] Such possible harms can all be claimed to be 'unintended', largely because the uncertainties associated with such technologies are suppressed in the first place (Arora 2019; Stirling and Scoones 2020). These uncertainties are not simply knowledge gaps that can be reduced through further research, but rather they are ubiquitous across all kinds of knowledge and action. Embracing uncertainties associated with modern science and technology thus means challenging the assumption that modern knowledge is 'increasingly precise' or predictive (Stirling and Scoones 2020: 25). By admitting uncertainties, modern science must now cultivate modesty and humility, to help limit its dominating influence in shaping a singular way ahead for agricultural production (Arora 2019). Such limits may be necessary to sustain and grow spaces for diverse ways of knowing beyond the modern world and its coloniality of extractive toxicity and supremacist ambitions of control.

Refusal as Radical Care

In a spirit of sustaining and growing diverse ways of knowing that Indigenous Peoples practice, some scholars, peasant-led social movements and other civil society organizations have embraced *refusal*, by saying no to participation in the UNFSS. This summit is considered to be rooted in alliances between multinational corporations, large philanthropies, and powerful governments, with their 'extractivist development model centered on corporate control of resources, policy debates, and regulatory processes' (Canfield et al. 2021).[8] To embrace refusal is to talk back to these alliances and affirm people's sovereignty. It is a way to say 'enough' (Simpson 2007: 78).

Refusal, as Ashanté Reese (2019) notes, is an 'ethic and practice of care' from which to produce 'other arrangements of the possible'. Refusal is at once a 'movement of exit and process of invention' (Weeks 2005: 100). It opens up possibilities within which to construct alternatives. Refusal resonates with recent work by movements like Black Lives Matter on abolition and mutual aid (Welch 2021). For example, identifying parallels between modern industrial agrifood systems and the prison-industrial complex that inflicts violence on black and brown bodies, Montenegro de Wit (2020) highlights possibilities of dismantling oppressive structures of racist coloniality through resistance against these structures and building relationships and practices that affirm life. Indeed, the building of alternatives based on values like mutual aid and solidarity is observed as helping to dismantle entrenched structures of oppression (Welch 2021).

Peasant movements' refusal of some modern machinery, genetically modified crops or digital technologies, is not just political resistance against their further marginalization through modernization – it is crucially also an embrace of the possibilities of plural agroecological

[7] Growing lists of scientific reports of unexpected outcomes of gene editing on plant genomes can be consulted through https://gmwatch.org/en/news/latest-news/19499 and https://www.testbiotech.org/en accessed 24 September 2021.

[8] https://www.foodsystems4people.org accessed 24 September 2021.

practices (van Dyck et al. 2021). Rather than seeing refusal as an aberration that rejects industrial progress and promised prosperity (Shange 2019), it should be recognized as 'unobjectionable an act as the [better funded] countervailing pressure to accept' (Van Dyck et al. 2021). Situating refusal in the context of coloniality underpinning modern industrial agriculture that enacts extractive toxicity and supremacist ambitions to control, helps to appreciate smallholders and landless workers' refusal of 'sustainable intensification' and 'smart farming' based on artificial intelligence, big-data, and gene editing. Such refusal is an act of radical care (Charles 2020), as we discuss in more detail below.

Campaigns against genetically modified organisms by small farmers from Brazil to the Philippines, from the UK to India, including the burning of GMO seeds and the destruction of field trials are probably the most confrontational forms of such refusal. But the practice of refusal has been widespread throughout the history of modernity (Chaveau et al. 1999; Pérez-Vitoria 2020). Since the 1970s, for example, the Nasa people (*Pueblo Nasa*) in Cauca (Colombia) have occupied *haciendas*, replaced sugarcane monocultures with diverse agroecologies and refused to provide free labour, all in order to 'liberate the earth' and restore ancestral lands. Similarly, in France, peasants have refused to accept their dispossession over decades, including the recent refusal of electronic identification of sheep through microchips. Shared by movements of refusal, around the world, is the adoption of alternative directions in which to move forward by saying: 'we refuse to continue on this way' (McGrahanan 2016: 320). In this way, movements of refusal not only embrace a politics of self-determination, but also seem to foreground the practice of collective *radical* care.

The term 'radical' comes from the Latin *radix*, or 'root'. It is through this emphasis on root that we want to explore embodiments of radical care. For us, the term radical points to two connotations of 'roots'. First, radical addresses roots in the coloniality that has marginalized and destroyed 'inferiorized' people's ways of knowing in developing modern worlds (Arora and Stirling 2020). The caring that stems from this aspect of the 'radical' is directed towards oneself and one's close relations that nurture and are nurtured for living, knowing and growing (Penniman 2020). Second, radical points to the search for collective decolonial histories, that can serve as anchors for 'other-than-modern' present and futures (Estes 2018), to support marginalized people's own capacities to produce knowledge that is at once 'natural' and cultural (Haraway 1991). Caring in this radical way, points to a search for *ways of relating* with neglected or vulnerable others in societies and ecologies, which diverge from the colonial relations of extractive toxicity and supremacist control driving the modern world.

It is important to distinguish such radical care from care-work in its many exploitative forms that have become more pronounced in the COVID-19 pandemic (Chatzidakis et al. 2020; Welch 2021). Care can for example be 'used to coerce subjects into new forms of surveillance and unpaid labor, to make up for institutional neglect, and even to position some groups against others, determining who is worthy of care and who is not' (Hobart and Kneese 2020: 2). Similarly, attempts to assimilate agroecology into modern agriculture by "stuffing agroecology in the innovation box"[9] does not challenge extractive relations or domination of smallholder farmers and other inferiorized people. [10]

[9] Anderson, Colin. 2018. The Politics of Co-optation in the Struggle for Just Sustainability: Stuffing Agroecology into the Innovation Box. Workshop at laboratoire agriculture urbaine http://www.agroecologynow.com/agroecology-innovation-talk/ accessed 30 September 2021

[10] Civil society organizations and their allies have referred to Agroecology 'Lite' or 'junk' agroecology to name various pressures to assimilate agroecology into modern agriculture https://foodfirst.org/agroecology-lite-

Unlike coercive care, radical care prioritizes relations over the categories that divide people into groups (Arora et al. 2020). It recognizes that nothing comes without its world of surrounding relations that are at once social and ecological (Hobart and Kneese 2020; Puig de la Bellacasa 2017). Radical care foregrounds this 'relationality' (Latour 2005), across practices of all kinds from tilling the land to trading in an online marketplace, to lay bare the modern fallacy that cultures are separate from nature (Arora et al. 2020). Going beyond verbal recognition of 'radical relationality' (Escobar 2020; Sultana 2021), embodiments of radical care practice egalitarianism that sustains the cultural *difference* of others (Arora et al. 2020). This means that radical care in practice seeks the survival of the alterity of cultural forms (Escobar 2006) but resists pressures to order differences hierarchically. Therefore, radical care is geared towards achieving comprehensive social justice and 'equality-in-difference' (Escobar 2006: 120).

Such quests for social justice and equality, however, are incomplete if 'nature' for the production of truth, is considered accessible only to modern science. The latter is found in technocratic approaches that transform agroecology into yet another tool of the toolbox of modern industrial agriculture (Giraldo and Rosset 2017). By building diverse agroecologies in communities and territories, by articulating radical approaches to food justice, food sovereignty and sustaining other ways of pluriversal living, people demonstrate concrete ways of healing toxic relations. Rebecca Clausen (2007) for example shows how agroecology practices in Cuba alter complex relations including soil understandings, land and food distribution patterns and labour relations. Radical care indeed initiates processes of *healing* to undo the damage wrought on other ways of knowing by coloniality (Quijano 2000; Sultana 2021). It foregrounds the rich diversity of ways of knowing still surviving in the many worlds of the earth's pluriverse (de la Cadena and Blaser 2018; Arora and Stirling 2020). This does not involve a recognition of plural 'natures' (that are each bordered from their culture), but rather observing the presence of multiple socioecologies spanning nature-culture divides. These socioecologies are constituted by a rich diversity of ways of relating that present pluriversal alternatives to modernity. As noted by Arora and Stirling (2021), these ways of relating include connections with selected plants and animals as persons (Guzmán-Gallegos 2021), with tropical forests that are considered sacred and powerful (Maarif 2015), and with hospitality and wonder towards people with ways of knowing and living that are different from one's own (Hafiz 2020). Such diversity in patterns of relations underpinning multiple socioecologies, means that there is never just one radically caring agroecology that offers an alternative to modern industrial agriculture. Alternatives are always many, at least so long as there is a pluriverse on earth.

Conclusions

'It is easier to raise hands and declaim 'unintended consequences' than to get prior consent' appears to be the principle governing the UN Food System Summit's decisive rush for modern agriculture based on genetics and digitalization. Is the world at large yet again being mobilized to offer a free hand to agro-industrial corporations and their institutional sponsors which want to *sell* new knowledge of biometrics, novel foods, animal face recognition, synthetized insecticides, or climate-smart crops? These technologies, based in the coloniality of extractive toxicity and ambitions to control underpinning modern industrial agriculture, are

cooptation-and-resistance-in-the-global-north/ or https://www.foei.org/features/junk-agroecology-corporations-co-opting-peoples-solutions-food-crisis-covid-19 accessed 30 September 2021

promoted as unleashing 'food systems transformations' that are necessary for sustainability (von Braun et al. 2021c). Yet the transformations they promise are little more than cosmetic techno-fixes, which leave untouched the (colonial) power structures that constitute modern agriculture.

Now this push for the latest modern sciences, technologies and innovations comes at a time when modernity's destructive consequences from heavy biodiversity losses to rampant climate disruptions have become difficult to deny and are increasingly framed as 'global' crises. Perhaps this is why the role of 'indigenous knowledge communities' is invoked, for purposes of legitimation and warding off critique from social movements and critical scholars alike. Crises after all, as the recent COVID pandemic shows, are also opportunities for those in power, to re-assert their supremacy as providers of solutions and drivers of ways forward, even if this re-assertion now involves doing lip service to 'indigenous' and 'traditional' knowledges.

We have argued that refusal to participate in a Summit that fails to account for entrenched asymmetries of power, and more broadly the refusal to adopt certain modern technologies, is not just a counter-movement against concentrations of colonial power and privilege in the modern agro-industrial complex. It is not just resistance against extractive toxicity and supremacist control which destroy biological and cultural diversities. It is not just a rejection of attempts to continue the erasure, scraping, copying and stealing of data, knowledge and land from marginalized people and objectified 'nature'. It is not just opposition to the singularization of agricultural futures by techno-sciences that suppress uncertainties to produce epistemological authority *and* precarity. Refusal is also crucially about movements of radical care, which are oriented towards *embracing alternatives* to toxic technologies and controlling practices. Refusal as radical care thus is a practical strategy to nurture plural agroecological alternatives to modern industrial agriculture.

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