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Food and Power in the Making: The Double Movement and New Geographies of Food

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Abstract

This paper shows how different actors and issues in the food system redefine not just who makes our food but also what food means to us at a societal level, extending earlier frameworks that define food as a commodity, a right, and a common good. The analysis starts by tracing foundational concepts to understand food and power in the making, including patterns of concentration, global food regimes, empire, and corporate power. It then reviews acts of resistance. Polanyi's double movement is introduced, alongside conventional and alternative food system models and social movements, to interpret resistance. The paper reveals significant power asymmetries and lock-ins and shows how neoliberalism can resist or respond to calls for change and find ways for food as commodity to reassert itself. The final part of the paper considers the land-food-climate nexus, including metabolic food politics, and calls for an additional more-than-human perspective to be developed to interpret these latest geographies of food and power. This new framing is essential because it is not only about who makes and remakes our food, or even our society, but more fundamentally the sustainable future of our planet.

Keywords power, resistance, double movement, geographies of food, more-than-human

1. Introduction

This paper examines the question of who makes our food and the relationship between power and powerlessness of actors in the food system. As Carolyn Steel (2020) argues in *Sitopia* (from the Greek *sitos*—food and *topos*—place), food is important not just because we need it to sustain life, but because food is ubiquitous and fundamental in ways that are not just about food but all facets of life. In Steel's words:

> [Food] … is by far the most powerful medium available to us for thinking and acting together to change the world for the better. … Food is the great connector, the stuff of life and its readiest metaphor. It is this capacity to span worlds and ideas that gives food its unparalleled power. It is, you might say, the most potent tool for transforming our lives that we never knew we had. (Steel, 2020, p. 2)

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The way power influences who makes our food in turn reveals what food tells us about power and powerlessness in society. Power, powerlessness, and forms of resistance are crosscutting themes in *food making*, used here as shorthand to signify provisioning and governance arrangements involved in making food from farm to fork (Clapp, 2012; Kneafsey et al., 2021; Morgan et al., 2006). The paper aims to provide a conceptual foundation to interpret food making activities and governance mechanisms in food systems as multiple ontologies of food. In so doing, it shows how different actors and issues in the food system redefine not just who makes our food, but what food means to us at a societal level.

The analysis expands Jackson et al.'s (2021) *food as a commodity, a right,* and *a common good* framework, which itself extends Vivero Pol's (2017a) *food as a commodity or commons* argument (see also 2017b). Foundational concepts to understand food and power in the making are first reviewed, including patterns of concentration, global food regimes, and links to empire and corporate power. It then reviews acts of *resistance*, epitomized by conventional and alternative food system models and social movements. Polanyi's (1957/1944) *double movement* concept is employed to examine processes of food in the making, particularly to show how neoliberalism resists or responds to calls for change as part of what Misleh (2022) terms *dialectical relationality* between processes of marketization and social embeddedness. The final part of the paper considers the *land-food-climate nexus*. In this context, food as commodity finds ways to reassert itself, alongside new forms of colonialism, protest, and resistance. The paper calls for a *more-than-human* perspective. This links geographies of food and power to *planetary boundaries*, *planetary social thought*, and *metabolic politics*, foregrounding questions of justice, democracy, and fairness (Barua, 2025; Clark & Szerszynski, 2021; Cusworth, 2023; Landecker, 2024; Wang et al., 2023). This is an important perspective for future studies that seek to examine complex intersections between food, power, and societal change.

2. Food Geographies I: Regimes of Empire and Commodification

To understand power and food in the making, the critical political economy work of Philip McMichael and Harriet Friedmann, Philip Howard's concentration and consolidation in food systems perspective, and analyses of agricultural commodity chains and global trade by Jennifer Clapp provide essential reference points. Their work has pioneered how we understand food and power at the global level, starting with food regime theory.

2.1 Global Agriculture and Colonial Power

Food has been traded since the origin of settled agricultural societies. Food regime theory provides an essential guide to understanding this process as geographies of food and power. It reveals how relations between agriculture and industry have historically been more international than generally thought. Friedmann and McMichael's (1989) work, for instance, links international patterns of food production and consumption to the development of the capitalist system.

Two food regimes up to the 1980s were described, with a subsequent third and potentially a fourth being debated (Kneafsey et al., 2021; Maye, 2016), as follows:

- *First regime/pre-industrial (1870s–1920s):* Colonies supplied unprocessed and semi-processed foods and materials (mainly grains and meat) to North America and Western Europe. This regime disintegrated when agricultural production in importing countries competed with cheap imports and trade barriers were erected.
- *Second regime/industrial (1920s–1970s):* This regime focused on North America and the development of agri-industrial complexes based around grain-fed livestock production. It incorporated countries of the Global North and Global South into commodity production systems, also seeing efforts to increase production in the Global South through the concept of the *Green Revolution*. Agricultural surpluses and environmental dis-benefits undermined this regime in the 1970s.
- *Third regime/"corporate-environmental" (1980s onwards):* This regime refers to an intensification of industrial food systems and the further development of an international division of agricultural labor, the continued transformation of food by large corporations, and the production of fresh fruit and vegetables and the supply of inputs for consumption in the Global North. It is dominated by the restructuring activities of agribusiness and corporate retailers but is also challenged by *alternative food networks*.

- *A fourth regime?* Even while debates about the existence of the third regime are ongoing, it is suggested that a further global food system may be emerging through a renewed focus on the food production potential of countries in the Global South (with countries like China, for example, acquiring farmland in parts of Africa) and (conversely) the challenges to such processes posed by emergent food sovereignty and local food movements.

Food regimes describe, then, the relationships between the politics and economics of food systems and how these relationships have changed over time. New regimes emerge from the problems caused by previous ones. One thing that has changed is the scale of international food trade, driven by global and regional trade agreements, which encourage world trade flows. However, much of the world's population, especially in the Global South, is still fed through interregional trade and local food systems. Food regime analysis reveals how the foundations of the modern, global geography of food were forged largely through the influence of Europe's colonial powers. These powers not only controlled the physical movements and transformations of people and ingredients around the globe but also exported their ideas about what to eat and how to farm to Africa, South America, and Asia (Kneafsey et al., 2021, p. 13). As Friedmann (2005, p. 124) notes: "agriculture and food have all along invisibly underpinned relations of property and power in the world system."

2.2 New Food Empires: Concentration, Power, and Consolidation

In contemporary *Worlds of Food* (Morgan et al., 2006), colonial power has been replaced by corporate power. This "regime of empire" is referred to as neo-colonialism, or the rise of the new "food empires" (van der Ploeg, 2010, p. 98). This new food empire is dominated by a small number of very large corporates. Howard (2021), for example, shows that a small number of very big corporations control the production, processing, and trade of the primary commodities on which the food system is based. This includes agricultural inputs such as seeds, machinery, and fertilizers, and key crops such as soya, grains, meat, sugar, and oils. These corporations also dominate how foods are branded and retailed. The power of these firms is explained through the "hourglass" structure (Howard, 2008, p. 88) of the food system, whereby a small number of corporations control access to food for billions of consumers, and access to markets for millions of farmers. In a paper about the work of Bill Heffernan and the Missouri School of Agri-Food Studies, pioneers of this way of thinking about food and power, Howard (2008, p. 88) describes the model as follows:

> the wide bulb at the top representing producers, the wide bulb at the bottom representing people who eat food, and the narrow neck of the hourglass representing the much smaller number of firms that control how food is passed between the two larger groups … . This structural position gives these firms an enormous amount of power over everyone else in this system, including decisions about who produces food, and who gets to eat.

This matters because even though farming remains the biggest employer on the planet (with approximately 1.4 billion people engaged), it is no longer the main power in the food system (Lang & Heasman, 2015). Most consumers are likely unaware of such concentrated power structures and of the ways in which corporate giants use big data and consumer surveillance tools to track their habits (Kneafsey et al., 2021). As Howard (2021) shows, uncovering who owns what is not easy because of the opaque and regularly shifting corporate parentage of food brands and subsidiaries.

Food regime theory combined with global value chain and commodity chain analysis helps to understand worlds of food and power in the corporate empire (Morgan et al., 2006). This involves analysis of vertical and horizontal co-ordination and power asymmetries of agricultural commodities such as grains and sugar (Howard, 2021). In these food chain arrangements, the pattern is *oligopsony*, with power increasingly concentrated in the hands of a few buyers for most key foods. Through food regime and hourglass frameworks, we see then just how concentrated power is in the middle part of the food system; a very small number of actors control key aspects of our food system.

2.3 Food as a Commodity

Political economy analysis reveals how food is framed as a tradable good, which is based on economic value and measured by market price. As Clapp puts it (2012, p. 17):

> We have moved increasingly away from food being viewed primarily as a source of nourishment and a cultural feature of society, and toward food as any other product that firms produce, sell and trade. ... Distance between the production and the eating of food, is increased by the commodification of food within the global economy.

Vivero Pol (2017a, 2017b) and Jackson et al. (2021) term this food as a commodity. Contemporary food trade is a commodity, with the price of commodities usually determined by international markets. The work of international and national agricultural policy regimes means that trade in food commodities is not always completely free market. This links also to the development of the industrial food system, which is embedded in a linear narrative of growth, and a productionist view of the system, with state support engineered to support production to meet rising food demand, such as the European Union's Common Agricultural Policy (CAP).

For critics of the way our current food system works, the commodification of food is the root cause of hunger and environmental destruction (Kneafsey et al., 2021, p. 6). Access to food becomes a market transaction and people's ability to acquire food is determined by their ability to pay for it, with the effect that some people are excluded from accessing enough nutritious food. This process is also associated with "deskilling" (Howard, 2021, p. 53), via the loss of knowledge and skills about how to grow, prepare, and preserve food.

3. Food Geographies II: Double Movement Counter Power and Human Rights

This section of the paper turns to consider *acts of double movement resistance*, epitomized by Alternative Food Networks (hereafter AFNs) and the food sovereignty movement (Rosol, 2020). Polanyi's double movement is helpful to examine these emergent food geographies (see also Misleh, 2022), linking food to ideas of *counter power* and, crucially, to inform a second food and power framing: *food as a human right*.

3.1 Polanyi's Double Movement and AFNs

When we conceptualize power in food systems, political economy approaches provide a useful lens to question the organization of food markets and to be critical about who benefits and who loses out (Howard, 2021). Polanyi's (1957/1944) idea of the double movement conceptualizes power and resistance in useful ways. As Howard (2021) summarizes, "there is a 'double movement' that results when the negative impacts of capitalist expansion incite a spontaneous, defensive reaction" (p. 10).

Political economy asserts that "neoliberalism, like nineteenth century liberal forms of capitalism, is characterised by a 'double movement' in which accelerating social and environmental degradation produces social resistance to market liberalisation" (Dibden et al., 2009, p. 301). As McCarthy (2004, p. 335) notes, "the immersion of all things into the marketplace [is] countered by predictable calls for regulation and restraint." This helps to explain a number of movements against the dominant food system, both historically (e.g., U.S. farmer protests against railroads in the late 1800s) and also more recent forms, including, from an AFNs perspective, the certification of fair trade labels globally, which started from the late 1980s, and the development of the local food movement (Goodman et al., 2012; Rosol, 2020). Polanyi's theory is not without critics—some argue it lacks specification or the potential to predict what factors trigger a *counter-movement* response, and such formations are by no means automatic, for example if capitalist actions are not so easy to see or if governments attempt to repress movements (Howard, 2021). Despite these critiques, Polanyi's work nevertheless offers a valuable means to conceptualize, for example, AFN responses and their place in food system transformation.

The actions of different global and local imperial powers have been critiqued and resisted across both historical and contemporary geographies of food (Friedmann, 2005; Howard, 2021; Kneafsey et al., 2021). There are many examples of resistance and attempts to reclaim control at different levels of the food system. Alternatives as counter movements range from those which seek to improve the current food system to those which seek to completely transform it. AFNs are the most symbolic example and constitute a varied assemblage of socio-material practices (Maye & Duncan, 2017; Misleh, 2022; Rosol, 2020), including: localized and short food supply chains, producer and consumer cooperatives, local public procurement schemes, civil society groups such as the Slow Food movement that preserve traditional and regional cuisines, a new generation of *civic food networks*, and earlier mentioned transnational networks such as the Fair Trade movement.

3.2 Localization as a Counter-Movement to Globalization

Localization has been widely canvassed as a solution to the problems of global agriculture. In the U.S. literature, AFNs emphasize their embeddedness in local norms (as everyday cultures of social practice), with a focus on ethics of care and stewardship. As Goodman et al. (2012, p. 11) remark: "This normative localism places a set of pure, conflict-free local values and local knowledges in resistance to anomic and contradictory capitalist forces." In Europe, the local food movement emerged differently via the environmental and organic food movements and the CAP, which at that time was promoting multifunctional agriculture and pluriactivity, plus a turn to quality stimulated by food scares. This model is not so prone to "the radical emancipatory idealism and normative communitarianism of US social movements" (Goodman et al., p. 12). It is more about defending the cultural identity and Eurocentric rural imaginary against U.S.-dominated corporate global agriculture (Kneafsey et al., 2021).

We observe in localism studies, then, a strong counterlogic to the political economy of agriculture. Local food movements and localism are a counter-hegemony to globalization and hegemonic capitalist modes of organization, with local power as the antidote to global power. The local becomes "the normative realm of resistance, a place where caring can and does happen. … in which care ethics, desire, realization, and a sustainable vision become the explanatory factors in the creation of alternative food systems" (Goodman et al., 2012, p. 13). The local is the site to resist anomic capitalism and the mass consumption of placeless food (Misleh, 2022). This is also where critiques of the local food movement, and the so-called *local trap* (Born & Purcell, 2006), have emerged, asking who gets to define the local, a process which implies inclusion and exclusion (Maye, 2016).

To overcome these problems, Goodman et al. (2012, p. 14–15) reject a politics that holds up an ideal utopian "romantic" model of society and then works to change society to meet that standard. They instead advocate for open-ended, continuous, "reflexive" processes, placing fully deliberative democratic processes squarely at the center of of an open politics of localism. In their analysis of localism, Goodman et al. (2012, p. 18) thus call for politics to be taken seriously to understand how localism can be "an effective social movement of resistance to globalization rather than a way for local elites to create protective territories."

3.3 Food Sovereignty and Food Justice Double Movements

In the Global South, there are many examples of local, national, and international grassroots movements whereby small-scale farmers or peasants are mobilizing to defend their local seeds, plants, agricultural heritage, and livelihoods. The most well-known of these is the food sovereignty movement, a global coalition of over 200 million small and medium-scale farmers, landless people, Indigenous peoples, migrants, and agricultural workers from 70 countries. Their aim is to enable communities to regain control over the way food is produced, traded, and consumed. The movement calls for a new system to address issues of power, control, and sovereignty in the food system and directly challenges the causes of persistent hunger in the Global South, including the historical legacy of empire and colonialism, the globalization of food trade, and neo-liberalism (Kneafsey et al., 2021).

Through the efforts of La Via Campesina and international peasants' movements, the notion of food sovereignty has also taken root across the United States, Canada, Australia, and Europe. Drawing from food sovereignty ideologies and approaches first developed in Latin America, these movements have argued for the right to land, the right to seeds, and the right to be a *small farmer*—rather than a peasant—often in distinction to the corporate-controlled, global food system (Alkon & Mares, 2012, p. 349). Agroecology—in addition to fairer trade and market rules for small-scale agriculture and farming—also figures strongly in these visions and movements for food sovereignty. Food sovereignty concerns in the United States have been joined up with the already existing *community food security* movements and Indigenous people's organizations and work focuses also on food justice movements (Alkon & Guthman, 2017), to engage with the injustices of the food system and those in wider society (see also Kneafsey et al., 2021, pp. 221–227).

3.4 Food as a Human Right

Food sovereignty has become a powerful symbol of resistance to commodification. An indicator of this influence is the way that the food sovereignty movement has gained access to the spaces where global food futures are shaped, such as the UN Committee on World Food Security. The Committee on World Food Security in 2020, for example, prioritized a right-to-

food narrative in terms of food nutrition and security. Food as a human right refers to

> the Universal Declaration of Human Rights of 1948 and in the International Covenant on Economic, Social and Cultural Rights of 1966. It includes democratic participation in food system choices and fair and transparent access to all necessary resources for food. (Jackson et al., 2021, p. 2; Vivero-Pol, 2017a)

Food as a human right framing has become increasingly prominent because of food insecurity experiences highlighted during the Covid-19 pandemic, with calls for rights-based solutions. Rights-based and food justice groups call for the reform of welfare systems, the implementation of a universal living wage, and support for community-led initiatives to prevent food insecurity. They reject market solutions to food insecurity, which depend on the redistribution of surplus and donated food through charitable and third-sector agencies. In India, for example, the Indian Supreme Court declared that the right to food comprises part of the fundamental right to life under Article 21 of the Indian Constitution.

4. Food Geographies III: Neoliberal Resistances and the Common Good

Localization, food sovereignty, and food justice are expressions of Polanyian *counter-power* (socialist movement) and Gramscian *counter-hegemony* (decommodification). Relations between these concepts are complex (Misleh, 2022; Wright, 2010). In this vein, it is important to recognize that a counter-movement to commodification is just as likely to save capitalism from itself as to abolish it (Misleh, 2022).

4.1 Neoliberal Resistances?

Inspired by Wright (2010), this section starts with the idea that resistance to food commodification is not straightforward. Polanyi's marketization and social embeddedness framework helps to explain relations between market (neoliberalism) and society (resistance) dynamics. Crucially, the double movement argument does not suggest that counter-movements replace markets; rather, that markets respond to counter-movements (in a dialectic relationship; Misleh, 2022).

In food terms, AFNs such as local food, organics, and fair trade are part of the Polanyian double movement, working to protect producers and the environment from exposure to intensive and exploitative global markets. However, Polanyi's counter-movement is not just about protecting vulnerable groups or the environment; it may also be about defending the market itself (Dibden et al., 2009). Resistance to the neoliberal political project may, in that case, lead to measures that make neoliberalism workable. This implies that countervailing discourses and political pressures may create new market-based instruments. In other words, markets are themselves resisting, doing so by modifying and adapting their actions to respond to counter-pressures and in the process, re-asserting the food as a commodity framing. Van der Ploeg et al.'s (2012) analysis of the construction of "nested markets" (p. 133) in China, Brazil, and the European Union supports the arguments here regarding food commodity reframing, particularly the process of social struggle underpinning their making.

4.2 Alternative Proteins, Agri-Food Digitalization and Regenerative Agriculture

The rise of *alternative proteins*, *agri-food digitalization* technologies, and elements of the burgeoning *regenerative farming* movement are contemporary examples of neoliberal resistance and are elaborated here as further examples to support this argument about how markets respond to social critique and debate.

In relation to alternative proteins, there is now growing interest in the possibility of a protein transition as a pathway entailing the replacement of the production and consumption of animal-derived foods with plant-based substitutes. Mylan et al. (2023) examine the developmental trajectories and transformative potential of these technologies. They consider two key questions: 1) How have alternative protein innovations developed over the past three decades, and 2) what explains their more recent acceleration? They examine four alternative protein innovations (plant-based meat, single-cell proteins, precision/cellular fermentation, and cultured meat), and the partial destabilization of the animal agriculture regime between 1990 and 2021. The analysis highlights an intensification in corporate engagement with alternative protein development and diffusion. Differences in technological maturity across the niche innovations have resulted in potentially transformative pres-

sures, manifesting differently in terms of the extent of diffusion of the alternative protein niches. The market remains small in comparison to conventional animal proteins, but what is significant is the way large meat corporations are entering the market and, in some cases, rebranding their products as "protein" rather than "meat" and thus trying to secure powerful positions for a less meaty food future.

For agri-food digitalization, the key argument is about *directionalities* (Ingram & Maye, 2023), which asserts that agricultural digitalization is the latest technique, employed in this case through technologies, to reinforce industrialized models of agriculture and to reproduce the institutions (practices, routines, norms, rules, and policies) and balances of power governing agricultural systems. The dominance of corporate players is evident in many of these technologies, with technological, organizational and institutional processes effectively locking in farmers buying those products (i.e., self-reinforcing dependencies). Digitalization, in turn, reinforces long-term path dependencies and the underlying socio-technical patterns of industrial societies. New technologies, such as smart tractors, drones, or milking robots on farms, or apps and big data that monitor how we order and buy food, are therefore far from benign. The providers of these technologies, typically large corporate businesses, collect data from those using them and control how they are used. Relations are not always unidirectional. Studies show, for instance, that farmers are also important actors in the development of these technologies, as both users and developers (e.g., Maria et al., 2021). Nevertheless, they create directionalities (determined by the companies that own them) that effectively steer agriculture and food systems in terms of the set of technologies, markets, institutional arrangements, and values they embody and the transformative pathways and outcomes they envision.

The third example is regenerative agriculture and specifically concerns by agroecology researchers about its potential for appropriation by mainstream agriculture. Regenerative agriculture has become popular among farmers, especially livestock farmers, and particularly those who wish to dispute claims that their practices are environmentally damaging (see Cusworth et al., 2023; Newton et al., 2020). The movement is more popular in the Global North. It aims to show how farming can be a force for good. What is significant is the recent attention regenerative agriculture has attracted from large food companies. These companies are keen to manage the environmental impact of their food chains and to develop new claims for consumers and markets to improve and demonstrate the environmental credentials of their foods, including carbon footprints. Many within the movement practice organic regenerative farming and reject the use of chemical inputs, but, in some cases, regenerative practices are combined with high-tech technologies to ensure efficient use of fertilizers, herbicides, and pesticides. Regenerative agriculture is therefore susceptible to corporate co-option and corporate agri-food counter-framing.

4.3 Tipping Points for a Long Food Movement

From the above cases (alternative proteins, digitalization, regenerative agriculture) one sees how conventional and alternative actors are changing and resisting in complex ways. In this final example, the idea of a common good and a wider well-being agenda comes to the fore as a critical way to connect food to wider societal challenges. Calls for a "long food movement" emerged from a report from The International Panel of Experts on Sustainable Food Systems and the Action Group on Erosion, Technology, and Concentration (IPES-Food & ETC Group; 2021, p. 1). The report responds to a critique that food activists never have a long-term plan. In the report, two contrasting futures for food systems, people, and planet are outlined. One is the "Agri-business-as-Usual" model (IPES-Food & ETC Group; 2021, p. 5), dominated by data platforms, private equity companies, and e-commerce. The other is where the initiative is reclaimed by civil society and social movements, with civil society organizations engaging in long-term planning for food systems.

For the first scenario, Agribusiness-as-Usual, "power relations remain largely unchanged … and civil society – also stuck in 'business-as-usual' mode – is able to challenge the agenda and prevent the worst excesses, but not fundamentally change the course" (IPES-Food & ETC Group, 2021, p. 5). In the second scenario, Civil-society-as-Unusual,

> civil society seizes the initiative, developing deeper, wider, and more effective collaborations than ever before. A Long Food Movement is … long in the making. From ongoing Indigenous struggles against colonization to the anti-globalization protests that gave rise to the concept of food sovereignty, it is clear that civil society – in its diversity of forms and scales of action – can be a powerful change-maker. (IPES-Food & ETC Group, 2021, p. 6)

The scenarios in the long food movement work are interesting. They show continued recognition of power asymmetries and new ways to fight back. One strategy is to reframe food as a source of well-being for the common good and echoes the third framing for this paper: *food as a common good*.

4.4 Food as a Common Good

In food as a *commons*, commons are resources that can be accessed and used by the community that governs their management, whether this be on a local, national, or global scale. Common goods are those which result from the expression of mutual and collaborative effort by social groups. To quote Vivero Pol (2017b, p. 8): "The consideration of food as commons rests upon revalorizing the different food dimensions that are relevant to human beings, thereby reducing the importance of the tradeable dimension that has rendered it a mere commodity."

Food as a commons is governed in a polycentric manner by *food citizens* (rather than *food consumers*) who develop *food democracies* which adequately value the different dimensions of food. Every eater has a say in how food resources are managed, and every eater is guaranteed a fair and sufficient access to those resources, regardless of purchasing power. The end goal is not profit maximization but increased food access, building community, and reducing disconnection between field and table (Kneafsey et al., 2021, p. 7). This reflects many Indigenous cultures, where food is regarded as a common good or a gift, acquired through cultivating relationships of care and respect for soils, plants, animals, water, and kin (Daigle, 2019).

This framing opens up our thinking and doing, including links to postcolonial and decolonial theory. In many of the resistance-oriented food movements, such as those for food sovereignty and justice, a "desire to define food as a "'common good'" is evident (Kneafsey et al., 2021, p. 17). This framing is promising, but it faces obstacles. Analysis of the European Farm to Fork strategy 2020 (Jackson et al., 2021), for example, shows the persistence of power asymmetries in policy making and *policy lock-in*, with food as a commodity resisting, partly because of the power and agency of incumbent actors, and because it is now so ingrained it has become tacit knowledge.

5. Food Geographies IV: Land-Food-Climate Nexus and Planetary Concern

This final section turns to the climate crisis and the land-food-climate nexus. It signifies a new phase in food biopolitics and geographies of power that center on more-than-human planetary concern (Clark & Szerszynski, 2021) and metabolic power (Barua, 2025), with important links to political ecology, environmental justice, and ethics (Cusworth, 2023). As Friedmann (2005, p. 140) remarks, commenting on Polanyi's focus on both the human and natural substance of society, it is useful to "interpret agriculture in terms of *livelihood*, or social provisioning, conceptually re-linking human activities with needs, and social relations with habitats."

5.1 The Climate Emergency and Planetary Boundaries

Debate about agriculture's contribution to climate change accelerated after the publication of the Intergovernmental Panel on Climate Change (IPCC) report in October 2018. It suggests we have roughly 12 years before we go beyond 1.5° C unless we change our ways of living. Climate now actively threatens our existential status at a species level (Head, 2016). Food systems are intensely bound up with the problems of climate change (Willett et al., 2019), both contributing to a changing climate through greenhouse gas emissions, and being affected by changes in temperature, precipitation patterns, extreme climatic events, etc. For instance, agriculture is responsible for a substantial proportion (10–12%) of global greenhouse gases that cause climate change (Ward, 2023). Agriculture is also one of the most vulnerable sectors to the impacts of climate change. Emissions from food production could be reduced by encouraging healthier diets, reducing food waste, and changing farming and land management practices. Changes in food demand and farming practices may enable land to be taken out of agricultural land use for land uses that deliver climate change mitigation and adaptation.

This period of *planetary concern* is also about more than climate change (Clark and Szerszynski, 2021). The way we produce, make, sell, eat, and waste food is seriously damaging the Earth's natural processes (Cusworth, 2023). Consider, for example, the impacts of land clearances for industrial agriculture that threaten ecosystems and species (biodiversity loss),

as well as destroy important carbon sinks. EAT-Lancet examined six of the nine planetary boundaries linked to the food system. These are the main systems and processes affected by food production and which they regard as essential parameters for a system-wide definition of sustainable food production (Willett et al., 2019). The Commission proposes target strategies for a *Great Food Transformation* that global food production must stay within (i.e., planetary boundaries for food production) to avoid potentially catastrophic shifts in Earth Systems.

5.2 Food Geographies "in," "of," and "for" the Anthropocene

The EAT-Lancet Commission (Willett et al., 2019) was important in calling for action to reduce food system impacts on climate, and linking food and farming to planetary boundaries. It introduced the idea of *The Anthropocene* and borrowed Polanyi's *The Great Transformation* book title to galvanize a new manifesto for change. It demonstrates, too, food politics in the making as planetary concern at a scientific level. The rest of this section argues that we, in turn, need a different understanding of food geographies, summarized as food geographies "in," "of," and "for" the Anthropocene (Maye et al., 2022).

The first approach (food geographies "in" the Anthropocene) is universalizing in formulation and perspective. It recognizes that food system transformation should be central to forge more sustainable futures but accepts the Anthropocene (as both concept and new reality) at face value. This is illustrated through the EAT-Lancet Commission's proposal for a universal global reference diet (Willett et al., 2019). Despite recognition that more plant-based diets will have regional variability, their framing is normative and, as Reisman and Fairbairn (2021, p. 668) observe, falls into the trap of universalizing human beings at the species scale despite the fact that we have "highly unequal contributions to global change and the role of structural inequalities in exacerbating environmental harm." Like the Anthropocene concept generally, food geographies in the Anthropocene present "a single, all-encompassing global story that risks erasure of alternatives" (Reisman & Fairbairn, p. 668).

The second and third interpretations (Food geographies "of" and "for" the Anthropocene) extend into more critical, political economy readings of the Anthropocene and point towards moral geography and more-than-human planetary social thought. Food geographies "of" the Anthropocene reflect arguments by scholars like Jason Moore and reference to *Capitalocene*, signifying both the impact of capital accumulation on the earth system and the new forces of capital that emerge around climate capitalism. From a food geography perspective, food as commodity politics reasserts itself through, for example, analysis of who is at the table when it comes to negotiating agreements to address climate targets. A review and analysis of food and farming stakeholders represented at the climate change summit COP26 shows, for instance, the dominance of large agri-food corporations in their bid to control food narratives (Ferrando, 2022).

Political economy, Capitalocene, and political ecology readings have much to offer for food as a planetary concern thinking, providing a much-needed radical edge to critique food as a commodity overflows into planetary issues. Some additional points are essential, though, from a geographical perspective, particularly to recognize what the anthropologist Anna Tsing and colleagues (2019) call the "patchy Anthropocene." This idea of *patches* recognizes the Anthropocene as a spatial project. It is something that should not be understood as one planetary unit but rather as overlapping patches, which means to understand the Anthropocene as a site with spatial heterogeneity, emphasizing the need for a more nuanced spatial approach.

Nagavarapu and Kumar (2022) make this point very powerfully via a historical account of the food geographies of Western Avadh, India. Their account fits neither Anthropocene nor Capitalocene framings. The oral histories and data they collected "kept spilling out of the frame" (Nagavarapu & Kumar, 2022, p. 371). Their food geography of the region starts with an analysis of the region's more-than-human pre-colonial landscape, revealing a physically heterogeneous landscape that challenges homogeneous storylines of agriculture transitioning from foraging and pastoralism to settled agriculture. Food geographies in the region were the result of a variety of factors and the influence of multiple human and non-human actors over time. This emphasizes the importance of food geographies "for" the Anthropocene, which comes from a moral geography perspective (Schmidt, 2019), emphasizing care, food systems as sites of multi-species agency, and the Anthropocene as more-than-human entanglement (Haraway, 2016). It is about building food futures

and thinking in ways that are aware of the underlying inequalities and socio-ecological complexities that accompany the prevailing organization of food systems. This includes strategies to foster more-than-human ethics of care and responsibility that is rooted in and for place (of the kind erased by plantation logics). It encompasses, too, more *hopeful* food geographies (Head, 2016) and the need for more generative political frameworks to enable and support sustainable equitable transitions (Arnold et al., 2022).

Wang et al. (2023) develop this idea further in a paper on "planetary rural geographies" and emphasize the critical link with planetary social thought, which connects directly to earth systems and planetary processes (soil health and the soil biome, for example). The land-food-climate nexus in this more-than-human ontology is no longer simply about rural-urban linkages, important though that is, or even intra-rural conflicts, tensions, and hopes. It redefines the social construction of the rural and food systems in *planetary concerns*. Wang et al. call for more creative, deliberative, and more-than-representational methods to capture these diverse community and multispecies perspectives. This, they argue, will enable a better understanding and appreciation of the Anthropocene as a site with spatial heterogeneity and nuance, combined with a means to involve stakeholders whose voices do not always come through.

5.3 Food as More-Than-Human

The land-food-climate nexus is the most significant challenge and sustainability transition priority for agri-food systems locally, nationally, and globally in the coming decades. This planetary component raises critical questions about land dispossession, climate capital, and the need to create food climate geographies that are more just and democratic. This is essential to counter new forms of colonialism, protest, violence, and resistance and to raise questions of justice, democracy, and fairness. It extends beyond political economy and political ecology frameworks to include also more-than-human just transitions. A priority in this regard, then, is to deepen and extend the ethics of care and moral food geographies of the Anthropocene imperative, including strategies, methodologies, and interventions that offer hopeful perspectives. This includes understanding how agri-food system practices and innovations refract back in terms of challenging what we mean by the Anthropocene as a moral compass for planetary multi-species agri-food politics (Maye et al., 2022). As an ontology of multispecies planetary concern, this final framing also goes beyond food values ascribed by markets for societies, or what we might call planetary regime Capitalocene critiques, to embrace more-than-human ecologies of practice as *Planetary Social Thought* (Clark & Szerszynski, 2021). This includes, for example: the health of soils, earth systems, and the "pluriversal politics" of indigenous communities (Escobar, 2020); and "metabolic geographies" (Barua, 2025), including (farm) animals, their feed regimes, and welfare (Buller & Roe, 2014), as bodily encounters between political economic and biochemical relations and the material and political dynamics of metabolism (Landecker, 2024).

6. Conclusions

As Mol (2008) observed, food is ontologically multiple, which is to say that depending on how it is approached, known, and engaged with, food is part of multiple realities for different people, times, and contexts. It carries with it multiple ways of "being" through the multitudinous ways we know it, grow it, procure it, transform it, move it, and, in the end, eat it (Kneafsey et al., 2021, p. 7). This paper has argued that power plays a critical role in how we "know" and "make" food, including geographies of food as mobility, transformation, metabolism, etc. To develop this argument, the paper has extended the food as a commodity, food as a right, food as a common good frameworks and typologies developed by Vivero Pol (2017a, 2017b) and Jackson et al. (2021) to organize and elaborate emerging patterns, including new power geometries related to planetary health. Table 1 summarizes these four "food as" approaches and planetary concerns.

Power and powerlessness are persistent themes when we examine them and think about who makes our food. Food politics is essential to the way we interpret what food provisioning means to economy–society–environment relations, opening up important questions about ethics and responsibility at the individual and societal levels (Cusworth, 2023; Kneafsey et al., 2021; Maye et al., 2022). As food geographers, we have key concepts to understand patterns of power and concentration in food systems, notably food regime theory (historical geographies of empire). These concepts are still valid today, for example, Beacham's (2022) "planetary food regimes," and patterns of neocolonialism via land grabs and other forms of *land*

Table 1 Food and Power in the Making

Food as …	Discursive framing	Polanyian dialectic	Food geographies
Commodity	A tradable good, economic value based on markets	Market-based, but state intervention and continuous market counter-resistance	Global agriculture, but export-based (historical and new colonial empires)
Human right	Basic human rights, social access, and essential needs	Counter-movements; social welfare systems, law, and human rights	Localization (US, EU), Food sovereignty: from Latin America to global social movements
Common good	A source of well-being for the common good	Counter-movements; common resources for humans (as food citizens)	Indigenous cultures, but local, national, or global communities
More-than-human	Planetary boundaries; multi-species; metabolism	Links social relations with habitats; socio-metabolic politics	Planetary health (global-local earth systems); One Health; re-territorialization; Buen Vivir, more-than-food relations

dispossession (e.g., land sales for carbon credits). Two pathways of technological innovation in mainstream agri-food systems are notable: digitalization and alternative protein economies. They reveal important food power geometries. Building on food as a common good, a new market society dialectic is also becoming more significant in the context of the land-food-climate nexus and metabolic politics, taking us beyond questions of food making. This signifies a more-than-human food in the making component (Table 1), which requires a "more-than-political-economy" set of theories, including, but not limited to post-structural, political ecology, and environmental justice accounts, and engagement with new theories of planetary social thought and material and political analysis of metabolism to govern not just food but life.

The double movement (Polanyi, 1957/1944) is a useful heuristic to examine resistance and counter-power, particularly because it recognizes neoliberal counter strategies, as we have seen through some of the examples linked to alternative protein economies, digitalization and regenerative agriculture. Much of the talk, however, is about power at a global scale when, in reality, power operates on a variety of spatial scales, expressed in different forms within the context of different relationships, ranging from families and communities to regions and nation states. Future studies are needed and encouraged as case studies of concrete strategies to reveal multiple intersections between food, power, and resistance and the identification of actionable solutions and socio-political resistances. This should include analysis of power through politics, such as agricultural subsidy regimes, and especially more-than-human planetary concerns and geographies of food and metabolic power that require urgent attention now and in the future. Who makes our food is not just about social actors but the planetary elements (soil, air, water) and political struggles for land and resources.

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