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From extractivism to global extractivism: the evolution of an organizing concept*

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ABSTRACT



Research on extractivism has rapidly proliferated, expanding into new empirical and conceptual spaces. We examine the origins, evolution, and conceptual expansion of the concept. Extractivism is useful to analyze resource extraction practices around the world. ‘Global Extractivism’ is a new conceptual tool for assessing global phenomena. We situate extractivism within an ensemble of concepts, and explore its relation to development, the state, and value. Extractivism as an organizing concept addresses many fields of research. Extractivism forms a complex of self-reinforcing practices, mentalities, and power differentials underwriting and rationalizing socio-ecologically destructive modes of organizing life-through subjugation, depletion, and non-reciprocity.

KEYWORDS

Extractivism; global extractivism; resource politics; resource frontiers; political ontology; global crises

Introduction

Scholarly work on extractivism has proliferated during the past decade. The concept of extractivism continues to expand into new dimensions. Extractivism has its origins as ‘*extractivismo*’ in the Spanish-speaking Latin American context, especially in the realm of natural resources, and in relation to Indigenous Peoples’ resistance and post-extractivist alternatives (Gudynas 2015, 2021). Extractivism as a concept forms a complex ensemble of self-reinforcing practices, mentalities, and power differentials underwriting and rationalizing socio-ecologically destructive modes of organizing life through subjugation, violence, depletion, and non-reciprocity. The sectorial focus has expanded beyond mining

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and fossil fuel extractivisms, to agrarian or agro-extractivisms of different types, including forestry extractivism. Expanded takes on extractivisms in a variety of sectors have emerged in the burgeoning literature on extractivism (McKay, Fradejas, and Ezquerro-Cañete 2021; Petras and Veltmeyer 2014). For example, significant attention has been given to the debate over whether Latin American countries' extractivist developmental projects should be understood as neo-extractivism, a concept suggesting greater use of resource rents derived from high commodity prices, deployed to social programs (Andrade 2022; Acosta 2013; Svampa 2019; Veltmeyer and Záyago Lau 2020).

The concept of extractivism has morphed, travelled, and expanded beyond sectorial analysis of natural resource extraction, both theoretically and geographically (Bruna 2022; de los Reyes 2022; Dunlap and Jakobsen 2019; Kröger 2020, 2021; Nygren *et al.* 2022). Multiple theorists have now deployed extractivism, producing a literature that attempts to define the term and apply it to a variety of cases and regions. This has produced studies of extractivisms of different types, occurring at diverse geographical scales, and in a variety of realms.

While natural resource extraction remains an important focus, the processes, and conditions of extractivist practices have been abstracted and applied to entirely new areas, from the digital and intellectual realm to finance and the global economy. Nevertheless, many kinds of extractivisms continue to have deep roots in agrarian development, or in transforming what happens in agrarian political economy. This is visible for example in new forms of 'fintech' linking mobile app consumers with expanding tree plantations (Zhen 2020), or the speculative and fast-paced role of global financial capitalism and its algorithms in affecting ever-more automated agrarian production patterns. Extractivism has long been conceptually linked to capitalist processes and has recently been characterized as a fundamental expression of global capitalism, particularly in its manifestations across the rural realities of the Global South (Ye *et al.* 2019). The academic proliferation of the use of the term 'extractivism' attests to the present need to consider the concept of 'global extractivism' and define its meaning.

In this article we examine the genealogy, development, and future trajectory of the concept. We explore the idea that extractivism is an important emergent 'organizing concept' in the critical social sciences and is particularly useful for critical agrarian studies and agrarian political economy. We explore the potential of the emerging new interpretations of extractivism to inform and expand research in critical agrarian studies and related fields.

This review addresses the intersections and entanglements of extractivism (as a concept) with other discourses and traditions, ranging from peasant studies, development economics, and national and sustainable development discourses, to feminist, intersectional, and indigenous approaches, as well as other areas where it plays a role in a discursive context. We discuss varied aspects related to historical and contemporary extractivisms. This helps us to conceptualize, and illustrate how extractivism, as an increasingly prominent modality of capital accumulation, has now become a way of world-making, determining, and making demands on most aspects of modern societies, and on the overall organization of the world system and its dynamics. Through this approach we seek to make visible entanglements between extractivisms and all levels and forms of social practices. This involves examining social and geo-economic dynamics, social and class struggles, power asymmetries, and the 'onto-logics' related to those.

Extractivism as an organizing concept

We argue that extractivism is based on socio-ecologically destructive processes of subjugation, depletion, and non-reciprocal relations, occurring at all levels of practices. It follows that extractivism is diametrically opposed to the concept and practices of sustainability (including ecological, social, and economic) if that concept is defined through criteria of stewardship, reciprocity, regeneration, and ensuring life for future generations (Klein 2014). Thus, the concept of extractivism becomes an effective tool for sharpening critiques of what constitutes the 'sustainable' in development practices, while simultaneously opening the possibility for transformational practices, policies, and designs (or ways of 'world-making') (Blaser and de la Cadena 2018; Stensrud 2016).

The myriad ways in which extractivism has been conceived suggests its analytical potential as an organizing concept (Kröger, Hagolani-Albov, and Gills 2021). An organizing concept is one that arranges and synthesizes a body of knowledge to serve as the basis for progressive interventions ('globalization' as a concept is an example). The role of an organizing concept is to promote and encourage further exploration of the concept at hand, through an exploration of the disaggregated components and details that comprise the overarching concept (Barrington-Leigh 2017). Organizing concepts are characterized as concepts which other concepts hinge upon (Wallerstein 1984). A defining feature of an organizing concept is its applicability to (Turner 1994) and its presence in a range of empirical practices. Thus, organizing concepts go beyond the theoretical, and serve to organize human activities (Machlis, Force, and Burch 1997; Uhl et al. 1996).

However, to cast extractivism as such, it is necessary to address some of its key enabling mechanisms. Our contemporary world teems with negative processes and cumulative changes that continue to unfold as a part of the 'normal workings' of the world system (Ollinaho 2016). Phenomena resulting from extractivist operations, such as the depletion of raw materials, natural resources, land and soil degradation, climate change, species extinctions, biodiversity loss, and deforestation, are wedded to capital accumulation and the drive for continued exponential growth of the world economy. Increasing global inequalities, across multiple spatial contexts, is another measurable feature of these processes (Hickel, Sullivan, and Zoomkawala 2021; Piketty 2014). All these biophysical and social aspects are part of the same systemic context of 'maldevelopment' (Amin 2011), which at its core is extractive in nature (Ye et al. 2019). Arguably, there has been a shift towards increasing extractivism(s) on world scale. This shift has been reflected in numerous empirical studies and increasingly in the theoretical sphere of the social sciences (Kröger 2021). By conceptualizing extractivism as an organizing concept, we hope to elicit further critical research, and engagements in the social sphere, which disrupt extractivist practices. This is an ethico-political stance, taken as part of the emergent 'transformative global studies' approach (Hosseini and Gills 2020).

Due to the proliferation of published scholarly work, it is necessary to periodically assess and in part recapitulate the advances made and take stock of the main arguments and contending analyses and concepts. This step needs to be taken to further advance a research field. We have chosen to orient our work on the concept of extractivism by utilizing an integrative literature review approach (Torraco 2005). This entails criticizing and synthesizing the literature, to gain a deeper and 'more comprehensive understanding

of a particular phenomenon' (Whittemore and Knafel 2005, 546). In this integrative literature review we consider work that either explicitly uses the concept of extractivism or examines processes and mindsets illustrative of extractivist practices (see Beyea and Nicoll [1998]).

Our initial hypothesis is that extractivism, understood as an organizing concept and accompanied by an ensemble of other key and related concepts, denotes the emergence of global extractivism as a way of organizing life. We started our research with an exploration of the interface of extractivism and many other key concepts. This led to the development of the sections of this review, which illustrate different ways that the concept extractivism has been (re)defined and utilized.

Shared and contending definitions of extractivism

Among the existing definitions of extractivism, there are some common threads that can be identified. We suggest a set of such common threads as follows:

- (1) Extractivism involves appropriation of natural and human resource wealth, producing a drain that damages or depletes its source in a potentially irreversible way.
- (2) Extractivism is premised on capital accumulation and centralization of power. It can occur because of relational power disparities (inequalities/imbances) and alienation.
- (3) Drain, associated with extractivisms, can be analyzed as resource and wealth flows in time and space (at and through different, nested levels, including local, state, regional, and global).
- (4) Extractivism is a modality of capital accumulation in current global capitalist development that conditions, constrains, and pressures lives of virtually all humans and other-than-humans. However, it is not dependent on or synonymous with global capitalism and has been embedded in other systems.

Thus, extractivism refers to a complex of self-reinforcing practices, mentalities, and power differentials underwriting and rationalizing socio-ecologically destructive modes of organizing life through subjugation, depletion, and non-reciprocity. Extractivism depends on processes of centralization and monopolization, is premised on capital accumulation, and includes diverse sector-specific development and resistance dynamics.

We see the emergence of global extractivism as a way of organizing life. Many notable definitions of extractivisms, including the agrarian varieties, have been presented by scholars (see Durante, Kröger, and LaFleur [2021]; McKay, Fradejas, and Ezquerro-Cañete 2021; Petras and Veltmeyer 2014). The Latin American social ecologist Eduardo Gudynas (2018, 62) refers to extractivism as the 'appropriation of natural resources in large volumes and/or high intensity, where half or more are exported as raw materials, without industrial processing or with limited processing.' Gudynas argues that the concept should not be synonymous with or used to describe the broader global capitalist system, or to denote all activities that appropriate resources, even in instances of high environmental and social impact. He argues that extractivism should apply only to physical, tangible resources (as opposed to resources often conceptualized as non-physical or intangible, such as data, finance, or labor). This position is illustrative of a broader divide in the contested conceptualizations of what constitutes extractivism. Gudynas contends that broad

inclusion of processes would lead to overly broad analyses, and thus not allow for identifying the potential and existing modes of resistance and alternatives to extractivism. Gudynas' approach focuses on studying points of extraction, especially at national or country level (but notably does not emphasize internal colonial frontiers within countries), though for some critics, this position is limiting.

The analysis by Ye et al. (2019), by contrast, rethinks extractivism in general politico-economic terms and suggests a list of ten conditions necessary for an activity or process to be considered extractivism, which they see 'as a particular way of structuring the processes of production and reproduction' (2019, 155). While Ye et al. (2019) refer to extractivism as leaving behind 'barrenness,' their vocabulary of drain and flows evokes a picture of a process structured by material infrastructures and orchestrated by an operational center. The operational center controls the flows of material and wealth but does not contribute to the value creation; value produced by others is appropriated and drains resources, 'taking them away without returning anything substantial' (Ye et al. 2019, 175). Ye et al. (2019) argue that rather than developing productive forces, which has historically been the progressive role of capital, extractivism degenerates them. Ultimately drain results in ecological destruction, both of which can be used to determine which practices can be identified as extractivist, and those which would not. Following this reasoning, a political ecology of extractivism(s) is necessary to identify different material, resource, and wealth flows and the ecological impacts of extractive operations, assess how destructive these are, and analyze the ways in which these relate to the politics of extraction.

Many authors now treat extractivism as occurring at the level of broader global processes. Machado Araújo (2013, 131) posits that extractivism is a feature of capitalism in the world system and is a 'historical-geopolitical product of differentiation' organized through 'colonial territories and imperial metropolises.' The expansion of extractivism within the current world system is described by Petras and Veltmeyer (2014) through the concepts of 'extractive capitalism' and 'extractive imperialism.' Naomi Klein (2014, 97) defines extractivism in terms of 'sacrifice zones,' based on 'a nonreciprocal, dominance-based relationship with the earth, one purely of taking.' Several authors, including Ye *et al.*, refer to extractivism as a mode, modality, form, or model of 'accumulation' (Acosta 2013; Svampa 2019; Teràn Mantovani 2016). These scholars indicate further possibilities of studying extractivism's modern entanglements with capitalism as a fruitful approach for future research. Dunlap and Jakobsen (2019), build on (and criticize) numerous previous definitions, and offer the concept of 'total extractivism.' By total extractivism they refer to a process in which a range of practices of extractivism(s) – while not necessarily focusing on the same resources – drive, reinforce, and intensify each other. They conceptualize extractivism as the insatiable imperative which drives global techno-capitalism to consume and encompass all life (e.g. characterized as '*the world-eater*').

Specific definitions of agro-extractivism are offered by McKay (2017) and Alonso-Fradejas (2018). Both provide detailed tools for assessing capital concentration and labor relations shifts that agro-extractivism creates, most notably its serious environmental degradation and depletion, in addition to economically non-developmental extraction. These definitions emphasize the social qualities of extractivism, and offer tools for critical agrarian studies, political ecology, and political economic analyses. Agro-extractivist scholarship has been advanced in recent publications, including McKay, Alonso-Fradejas, and

Ezquerro-Cañete (2021), Tetreault, McCulligh, and Lucio (2021), and in Kröger and Ehrnström-Fuentes (2021), which identifies ‘forestry extractivism’ as a subset of agro-extractivism.

The origins and expansion of extractivism in academic literature

In this section we present the origins and evolution of extractivism in academic literature, starting with early studies, as well as scholarship predating the term itself but nevertheless examining the dynamics and processes of extractivist natural resource appropriation. We aim to show how extractivism has developed from a modality of extractive imperialism in the context of European colonialism to a modality of capital accumulation in the current context of global capitalist development, which includes emergent resistance dynamics, diverse social relations, as well as new geoeconomics and geopolitics of capital in the world system.

The predominant understanding of extractivism as an intensive natural resource appropriation aimed for raw material exports (Gudynas 2018) originated in the late twentieth century, born from Latin American conceptualizations of *extractivismo*. While much of the academic work on extractivism was initially focused on Latin America, similar processes have occurred elsewhere in the world. For example, the earliest notions of the term extractivism in the Arctic region’s academic discourses appeared only in the 2010s, though arguably the practices of extractivism (and internal colonization) were present much earlier (Kröger 2016, 2019; Wilson and Stammeler 2016). Likewise, literature exploring extractivism in Soviet and post-Soviet spaces is gaining traction (Ocaklı et al. 2021).

Although the academic concept of extractivism is rather new, the dynamics and structures of extractivist practices and extractivism as a paradigm can be traced to colonial era resource and labor exploitation (Acosta 2013; Gago and Mezzadra 2017; Gudynas 2015). As the world economy – largely defined by capitalism – emerged, the conquest and colonization of the Americas, Africa, and Asia rendered these localities sources of natural and human resources to meet the ever-increasing demand for production and consumption by metropolitan centers (Marx [1867] 1976; Moore 2015). Within these core–periphery dynamics some regions were forced to specialize in the extraction and export of raw materials – i.e. primary commodities – while others took the role of producing manufactured goods (Acosta 2013; Bunker 1988). Throughout the Global South this resulted in violent appropriation of minerals, metals, oil, and gas (Gudynas 2015, 2018), sugar, rubber, timber, and other commodities (Galeano 1997).

European colonization and its significance to early industrialization created extremely unequal labor relations and limited access to the means of production (Farthing and Fabricant 2018; Galeano 1997). These dynamics, including land distribution (Robles and Veltmeyer 2015), have essentially remained the same to this day (Acosta 2013), as the creation of cheap labor and natural resource frontiers fueled the machinery of subsequent capitalist development (Moore 2015). Asymmetrical power structures, and a history of exploitation, are widely considered as prerequisites to the rise of contemporary large-scale extractivism(s) (Bebbington et al. 2018; Blaser and de la Cadena 2018; Gago and Mezzadra 2017; Willow 2018). The foundations of extractivism and its related contemporary global structures are intrinsically constituted by and constitute larger world systemic dynamics (analyzed by e.g. Wallerstein [1983] 2011).

Extractivism as a phenomena and academic literature related to it started to significantly evolve and expand at the beginning of the twenty-first century. During this time Latin American economies saw the emergence of so-called progressive governments (left or center-left) which combined heterodox economic policies with the expansion of social spending, increased consumption and pressure on natural goods, lands, and territories, following a global boom in commodity prices (Svampa 2019). Over these years many Latin American governments implemented productivist visions of development powered by an extractive export model. This resulted in an increase of large mining operations, mega-dams, and the expansion of oil and agrarian frontiers. This new mode of extractivism came to be called *neo-extractivism*.

One of the earliest studies on neo-extractivism was offered by Petras and Veltmeyer (2014), whose contribution offered key criticisms of neo-extractivism in Latin America. They argued that rather than being the sustainable and equalizing mode for social development it was heralded as, neo-extractivism continues to reinforce old dependency paths and denote a predatory form of capitalism and imperialism. In Brazil neo-extractivism was called neo-developmentalism and was applauded during the years of Lula by many from the Left as a successful state strategy, especially amid the post-2008 global financial crisis. However, this was also criticized (e.g. by Kröger [2012]) for creating more power for large extractive corporations to wield in economic decision-making – the results of which can be seen in the subsequent rise of authoritarian (rural) populism in Brazil and beyond (see McKay, Oliveira, and Liu 2020). More recent critique is offered, for example by Daniela Andrade (2022) of the Brazilian context, according to whom the expansion and reproduction of resource-based accumulation in the form of neo-extractivism has reinforced systematic degradation of state and society for the benefit of rent- and interest-seeking actors, such as corporations. Maristella Svampa (2019) has studied extractive violence and the various phases of socio-environmental conflicts in Latin America which emerged as a response to neo-extractivism.

Some of the more recent research on extractivism(s) has started to expand the concept beyond cases of natural resource extraction. One of the emergent questions that have arisen as extractivism expands into new sectors is how to determine what types of activities can be characterized as extractivism and assess their degree or severity (Kröger 2021). As the conceptualization of extractivism expands, some researchers now include activities that are not part of the conventionally defined natural resources sector, including digital extractivisms (Chagnon, Hagolani-Albov, and Hokkanen 2021; Couldry and Mejias 2019; Gago and Mezzadra 2017), and epistemic extractivism (Grosfoguel 2020). These new approaches suggest a broader utility for the concept to explain different dimensions of global social change and the perpetuation of coloniality within the current world system.

Other recent critical studies of extractivism and neo-extractivism have also focused on gender and indigeneity in relation to extractive operations. This scholarship is emblematic of the many problems, conflicts, violence, and resistance that neo-extractivism as developmental model has created. This valuable and emergent set of scholarly work includes contributions analyzing local and indigenous communities' vulnerabilities (Busscher, Parra, and Vanclay 2020), social–environmental conflicts (Engels and Dietz 2017; Smart 2020; Tetreault 2020), and the effects of tourism (Loperena 2017). Indigenous mobilizations have expanded since the neo-extractivist era, leading to studies on indigenous self-determination (Guzmán-Gallegos 2019; Laing 2020), roles (Ehrnström-Fuentes 2019), rights (Gunster and Neubauer

2019; Raftopoulos 2017), and their relationships with state narratives (Marston and Kenmore 2019; Strambo and González Espinosa 2020).

Similarly, gendered violence has been exacerbated by global extractivism. The gendered impacts and gendered natures of extractivism and extractive industries have been studied by a variety of scholars (see e.g. Caretta et al. [2020]; Larterra, Eliosoff, and Costantino [2021]; Macdonald [2018] for an overview). For example, Kuokkanen (2019) notes that indigenous women hold limited power within planning and carrying out extractive projects in the Arctic. In Nigeria, extractive industries are shown to affect the construction of masculinity within young men (Ashamole 2019). In Latin America, feminist movements have been crucial in the resistance to extractive projects, which is an important focus in resistance analysis literature (Aguinaga et al. 2013; Billo 2020; Fernandez 2018). For example, Aguinaga et al. (2013, 55), have studied feminist movements in Bolivia and Ecuador, and concluded that ‘they see a complex connection between decolonization, fighting patriarchy, defeating capitalism and the construction of a new relationship with nature.’

Some of the aforementioned contributions – especially Veltmeyer and Záyo Lau (2020) – can be seen as part of a wider *post-extractivism* turn in research. The relatively lowered commodity prices in 2014 put neo-extractivism as a developmental model into severe crisis (Brand, Boos, and Brad 2017), and the subsequent debate on post-extractivism was born around the quest for alternatives, to alleviate the negative impacts of extractivist practices on local populations. The post-extractivism approach in research criticizes the externalization of socio-ecological costs and emphasizes the issues of coloniality and domination (see Willow [2018]) in ‘the power-laden structures of the global political economy’ (Brand, Boos, and Brad 2017, 38). Svampa (2019, 56) groups the quests for alternatives around: (1) the nature of democracy and participation; (2) politics-strengthening via discourses and practices; (3) policy instruments to change socio-political structures perpetuating inequalities; and (4) the ‘holistic relational visions’ of life, such as Andean notions of *buen vivir* or other indigenous cosmologies (Svampa 2019, 44). These new critical contributions are indicative of more profound ontological conflicts underlying natural resource extraction and deep-seated global and social structures, which need to be further studied in relation to extractivism.

Global extractivism(s)

Extractivist practices have now arguably become widely embedded throughout the contemporary capitalist world system, shaping global structures, physical environments, social relations, human and other-than-human bodies, and temporalities (Ye et al. 2019). The scale of the implications is massive; for example, a recent study has shown that the total human product of material goods in the world now weighs more than total planetary biomass (Elhacham et al. 2020). To better analyze these processes and phenomena, we introduce the term of ‘Global Extractivism,’ which points to a scale of ‘planetary significance’ in which:

- Extractivism now conditions, constrains, and pressures (organizes) the everyday lives of most humans and other-than-humans everywhere, but in different degrees and ways for people in different societies and societal roles (for example, through global supply chains, rentierism, consumption patterns, energy use, physical environments, pollution, depletion, and biodiversity loss).

- Global economic and political structures function in favor of, and are premised on, extractivist modes of accumulation. This is exemplified by the global financial system (which deepens the global rentier economy and global creditor–debtor relations), as well as the historical and ongoing drain of natural and human resource wealth from the Global South to the Global North via trade rules, subsidies, and (removal of) tariffs which cheapen the labor and natural resources in the Global South (Hickel, Sullivan, and Zoomkawala 2021; Radhuber 2015)
- Global extractivisms function across increasingly diverse geographies and denote a more nuanced understanding of global colonialities, beyond the traditional core–periphery dynamics. This is exemplified by the extractivist expansion in the Arctic, as well as through the increasing extraction of raw materials in the Global North for the Chinese market (the pulp industry in Finland is an example).

Extractivist processes have a role in determining production and economic relations throughout the world, and critical attention to the global expansion of ‘traditional’ extractivist practices, beyond the Latin American context, is rapidly increasing. Research is now focusing on a wide range of practices and sectors, including, for example farming practices, mining, and development projects in Africa (Ayelazuno 2014, 2019; Nogueira et al. 2017), oil plantations in Indonesia (Brad et al. 2015), platform capitalism in Asia (Dal Maso, Robertson, and Rogers 2019), and hydrocarbons in the circumpolar Arctic region (Stammler and Ivanova 2016; Wilson and Stammler 2016). More recently, the explosion of ‘extreme energies,’ such as hydrocarbon fracking, has been documented throughout the Global North and South (Svampa 2019). The expansion of new techniques to extract fossil fuels from the Earth constitutes a deepening technological and capital-intensive frontier, which is one of the key drivers for the intensification of extractive projects (Svampa 2019).

Through a wave of global capital investments, China has now emerged as a major driver of expanding extractivist activity in the global system. The rapid growth of the Chinese economy, its new role as *the* global hub of resource processing and manufacturing, and the increasing affluence and consumerism of its population has increased Chinese efforts to secure food, energy, and mineral resources from across the globe, and has produced significant investment in agricultural projects in Latin America, Africa, Central and Southeast Asia, and including infrastructural investments via the massive Belt-and-Road Initiative (Giraudo 2020; Zhang 2019). While Chinese state investments, for example, in soybean agribusiness, still pale in comparison to the established global players in North America, Europe, and Japan (Oliveira 2018), the role of China and its impact on twenty-first century extractivism deserves much more critical attention. For example, China has become by far the biggest producer – and user – of pesticides and has supplied the Global South with cheaper generic pesticides (Shattuck 2021). The role of the BRICS countries as actors in the expansion of extractivist activity globally is another area calling for more research, with few studies so far extant in this field (Bond 2016; Nilsen and von Holdt 2019).

Beyond understanding global extractivism merely through the expansion of extractivist projects and processes across countries, it is crucial to understand global extractivism as a conversation beyond state-centered analysis or the international dynamics of economic production. Global extractivism as a concept has the potential to shed light on the

interconnectedness of the global biosphere, as well as the massive scale of contemporary and historical extractivism(s). The 'global' in global extractivism(s) not only denotes the expansion of extractivist forms of appropriation across the planet, but also the global ramifications of many local extractivist projects and processes. Startling examples of extractivism(s)' cross-scale and global impacts can be found on multiple levels. On the planetary scale, the effects of extractivisms can be seen for example in the global loss of soils, depletion of groundwater, or the mass extinction of other-than-human species. On the micro-scale extractivisms affect the very metabolisms of individual organisms through pollution, toxicants, and micro-plastics which currently permeate practically all ecosystems and organisms.

In the following sections we address some emergent aspects of extractivism that come into relief as we adopt the conceptualization of extractivism as a global phenomenon. These include the role of agro-extractivism(s), ontologies, frontier dynamics, the state, value, and technology, followed by a discussion on emergent digital extractivism(s). These aspects are central in understanding extractivism's global impacts and multilevel and multi-scalar entanglements with different dimensions of life. These sections are separated in this paper, however, in practice they overlap and intersect at many different points.

Agriculture and extractivisms

Agriculture figures as a crucial site of analysis through which one can understand extractivist logics and practices; where these are present one can speak about agro-extractivism (Petras and Veltmeyer 2014). Food procurement practices – such as agriculture – invariably underlie the possibility for all organisms to sustain life. Contemporary – to an important extent consolidated – global agribusiness has a major part in setting the tone, shape, and speed of human activities and possibilities in the modern world. It is compelled by commodity-driven and ecologically destructive extractivist logics of accumulation, especially in the forms of land-grabbing (Borras et al. 2012; Cáceres 2015), class struggle (Bernstein 2010), labor exploitation (Clark and Longo 2021), and the intensification of mechanization and use of chemical inputs since the late nineteenth century. Other contemporary logics of agrarian change include the emergence of the rural precariat, the crisis of the peasant economy, and the financialization of agriculture (Kay 2022).

It is no longer tenable to regard agriculture as one milestone along a lineal developmental trajectory of humankind, that is, from hunting and gathering to pastoralism, agriculture, and finally to – most advanced – industrial civilization (Graeber and Wengrow 2021). Agriculture appears to have always been an important tool of imperial power (Scott 2017). Sydney Mintz (1986), in his classic study on sugar, vividly describes early colonial activity in the Americas in ways that are strikingly akin to extractivisms as they are understood currently. Mintz shows the economic and labor practices that emerged in the sugarcane plantations are revealed not as precursors, but as first iterations of industrial capitalist modes of production, racialized extraction and exploitation, and the sensory manipulation of consumptive habits. Mintz casts British plantations as the first iterations of industrial capitalist accumulation; the establishment and development of growing, processing, transporting, and consuming sugar/cane that provided the impetus and even

model for factory production. Wolford argues that the logic of the plantation, based on scale, precision, monocropping, intensive use of inputs and dependent on enslaved labor, is geared for extraction and has ‘crystallized into a coherent way of organizing the world’ (Wolford 2021, 2). While the agro-extractivist modes of production, processing, and labor practices of plantation have certainly changed and adapted, for example, with wage labor replacing slave labor, plantations are still ‘dependent on forced, usually racialized labor’ (Wolford 2021, 12).

Besides the long roots of racialized violence in agro-extractivism, in recent critical agrarian scholarship pesticides and their violence on life forms have been brought to the forefront. One reason for this is that ‘the release of synthetic chemicals into the environment writ large has grown faster since 1970 than any other agent of global environmental change’ (Shattuck 2021, 1). Intensive use of chemical inputs is not only extractivist in relation to the drain or depletion of raw materials used for fertilizers, particularly phosphorus (Cordell, Drangert, and White 2009), but pesticides deplete the very life of the soil. Friedman and McMichael (1989) delineate the concept of ‘food regimes,’ which they argue are integral to understanding the rise of the American model of capitalist development. Predicated on an export model from the very beginning of colonial occupation, and reliant on mechanization and chemical inputs early on, this model eventually became the standard bearer when the United States of America foisted it on the world after World War II, setting the stage for the contemporary formations of global extractivist agriculture (Bauerly 2017). In fact, due to the neoliberal turn, the agrarian sector accumulated power, capital, and land at such magnitude that now corporate capital dictates what McMichael (2013) calls the corporate food regime, which aims at commodities production for the sake of capital profit, thus neglecting food security (Akram-Lodhi 2022). The corporate food regime emphasizes the massive consolidation of agro-industry – resulting in only four giant corporations controlling the dominant agro-chemical and seed markets, as well as private-sector research and development in seeds and agro-chemicals (McKay and Veltmeyer 2021; Shattuck 2021). These agro-chemical corporations can be seen as nearly ideal types of ‘operational centers’ of extractivism (Ye et al. 2019).

There is a large literature around agrarian questions in Marxist agrarian political economy, which is inherently about extraction. These have already informed studies on extractivism. Levien, Watts, and Hairong (2018) emphasize the usefulness of Agrarian Marxism to unravel how capital tries to take hold of the points of production, that is, the points of extracting raw materials. Agrarian Marxism can also be used to investigate the complexities involved, such as the role of changing technologies, surplus extraction, power, control relations, financialization, and labor. Weis (2010) opens the central myth of assumed superior productivity by industrial capitalist agriculture, which relies on cheap oil that subsidizes this production, while causing major biophysical devastation. Martinez-Alier (2011) complements the Marxian economists who – until the mid-twentieth century – had not incorporated the crucial role of fossil fuels into their analyses. He argues that the concept of Energy Return on Investment (EROI), needs to be added to the analytical toolkit. The more energy produced with lesser costs, the greater the advancements of capitalism in other economies. The extraction of hydrocarbons gets more difficult and costly as the most easily accessible resources dwindle, which suggests that more devastating extractivisms are prone to emerge, both in relation to further

excavation of fossil fuels, and to the substitution of energy from other sources (e.g. by agrofuels produced via agro-extractivism).

Much of current extractivism is premised on appropriation of new energy or raw material sources, or so-called technological fixes, however, these are short-term solutions. Foster (1999) argues that Marx has made somewhat similar claims, regarding the destructiveness of modern agriculture. Foster (2000) refers to how Marx saw the existence of large-scale capitalist agriculture as a key impediment for the new soil science to manage soils sustainably, forcing instead a constant introduction of external fertilizers and other inputs for short-term fixes to the problem of depleting the soils. These remarks tell of the long – and deepened – extractivist history of modern agriculture through its increasingly corporate-controlled plantation agriculture (McKay and Veltmeyer 2021). This plantation expansion has been so central for the current epoch, that recent critical agrarian studies, drawing on studies in multispecies justice, have started to call this epoch not the Anthropocene or the Capitalocene (Moore 2016), but the Plantationocene, which emphasizes unjust racial and other-than-human relations (Wolford 2021). From the extractivist studies perspective, this is a welcome addition, directing attention not to abstract capital discussions, but the concrete changing of lives through plantation expansion.

Agrarian studies provide a series of useful research questions for delving deeper into politics, and the search for more just and sustainable production relations. Bernstein's (2010) four key questions around who owns what, who does what, who gets what, and what do they do with it, form a solid structuring framework for political economic analyses of extractivist pushes and struggles. These four questions speak to the central issue of agrarian studies, that is, the need for pro-poor, environmentally friendly agrarian reforms (Akram-Lodhi and Kay 2010a, 2010b), to foster justice and sustainable development. The need for these reforms to give possibilities and rights for people to live in the countryside and forests, and to settle land that is currently unproductive or occupied by speculative large landholders, is increasingly urgent, given the large and growing numbers of workers in precarious situations, who cannot be absorbed by the labor markets of cities or industrial hubs, especially in the Global South (Davis 2006; Li 2010).

Historical and contemporary agro-extractivism necessitates the development and maintenance of specific kinds of class structures. The rise of precarious and informal workers has increased at pace with the rise of new agrarian populisms. Workers move as they follow new resource frontiers, for example to work on palm oil plantations, log forests, or herd cattle across large areas of the Global South (McCarthy 2019). These movements have pitted new incoming migrant populations with Indigenous and other populations, framing the latter as privileged, gaining many votes from those in the labor force that are in precarious situations due to neoliberal reforms (which many of the new right-wing populists are, ironically, driving). A key issue here is the unsustainability of this environmental politics situation, where environments and proponents of just and sustainable environmental relations are sacrificed, even massacred, for the sake of short-term political gains by new authoritarians such as Bolsonaro in Brazil or Maduro in Venezuela. Even the so-called progressive regimes of Bolivia and Ecuador, while incorporating *buen vivir* in their constitutions, have been plagued by authoritarian populism, which is centrally related to imposing a model of neo-extractivism (Tilzey 2019).

In recent critical agrarian studies, there is a focus on trying to uncover how agrarian social movements could counter this tendency, which seeks to criminalize them and erode their bases (Borras 2020; Monjane and Bruna 2019; Scoones et al. 2018; Veltmeyer 2020). In fact, detailed agrarian studies that note the many already-existing agrarian counter-movements provide a much more hopeful picture of the possibilities to counter the current authoritarian-extractivist push than those that place overt attention on the supposed ideological-identity linkages. The understanding of rural relations by the bulk of peasants and especially indigenous peoples in the Global South has never been aligned with extractivist onto-epistemic worldviews and practices, but there are dramatic onto-epistemic differences, these becoming now evermore visible in rising resistance to extractivist projects by Indigenous and other populations.

Ontological foundations of extractivism

Extractivism means much more than just exaggerated resource extraction. Following scholars such as Willow (2018), Grosfoguel (2016), and Krause (2020), extractivism can be seen as extending beyond simply being a way of (ab)using the earth, as it is also a way of acting, and being – in and within a world. It arises from a specific kind of thinking (i.e. a mentality) and thus constitutes a way of positioning oneself in the spaces, relations, and surroundings one is in (Willow 2018). While acknowledging different ways of approaching human subjectivity within the rest of the world such as phenomenological and pragmatist analyses (see e.g. Ingold [2018]; Ollinaho and Arponen [2020]), this section focuses on the role of political ontological approaches to extractivism, as these form an important and emerging part of the current literature on extractivism's intangible foundations.

According to Arturo Escobar (2017), examining the ontological aspects of social existence means emphasizing worlds and ways of 'world-making' in one's analysis, and deconstructing being itself into something that is plural. Blaser and de la Cadena (2018) emphasize the importance of the 'political' in political ontology, as it signifies and makes visible the politics and power relations related to the various forms of being and meaning-making. Scholars studying political ontology (see e.g. de la Cadena and Blaser [2018]; Escobar [2017]; DeVore [2017]; Tola [2018]) are able to uncover the ontological dimensions of extractivist practices and systems, while making visible non-modern and non-extractivist lifeworlds (see e.g. Blaser and de la Cadena [2018]; Escobar [2017]; Leifsen [2020]; Vindal Ødegaard and Rivera Andía [2019]).

For Blaser and de la Cadena (2018), the very concept of Political Ontology emerges from struggles against (or in) anthropocentric practices such as extractivism, as these erode the possibilities for different and multiple existences (i.e. the pluriverse). According to de la Cadena et al. (2015) and Escobar (2017), political ontology can (re)assert the viability of the pluriverse and legitimize *struggles against extractivism as struggles over existence*. Recent studies examining how extractivist practices and struggles against them unearth various lifeworlds or ontological dynamics include for example Ehrnström-Fuentes (2019), Velásquez (2018), Stensrud (2019), Ulloa (2020), and Lassila (2021).

Many of the scholars studying the ontological foundations of extractivism have centered their analyses on specific imaginaries such as human exceptionality, mechanistic images of the world, and dualisms – such as nature and culture, self and other, reason

and emotion, and universal and particular. Thinking beyond these dichotomies has become a central level of analysis in studying the foundations and core-mechanisms of extractivist practices. According to Escobar (2017) there is a rich variety of new theoretical and ethnographic scholarly work, which through non-dominant ontological frameworks, is bridging the gaps between human and other-than-human worlds and deconstructing the foundations of global extractivisms. These include ‘more-than-human-worlds’ (see e.g. de la Cadena and Blaser [2018]; Escobar [2018]), post-dualism (see e.g. Moore [2015]; Santos [2008]; Tola [2018]), vibrant materiality (see e.g. Bennett 2010) and neo-materialist theories (see e.g. Hoyos [2019]; Szeman [2017]), relationality, and inter-species and assemblage theory (see e.g. Hope [2020]). There are a growing number of explorations done outside traditional Western science (see e.g. Kimmerer [2013]; and Kopenawa and Albert [2013]), which are further challenging the ontological prerequisites of extractivist modes of production or revealing its foundational ties to colonialism, racism, and sexism (see e.g. Nirmal [2020]).

Understanding the onto-logics of global extractivism(s) and their historical institutionalization is crucial, as extractive practices are dependent on the framework out of which they are born. Marisol de la Cadena et al. (2015) argue that extractive destruction is only possible if the exploited beings are not seen as beings or the landscapes as living. Other-than-human nature is therefore only made available to be conquered and exploited *because* it is first defined as a ‘*terra nullius*,’ a resource without its own purposes or meanings (Plumwood 1993). Gago and Mezzadra (2017, 577), note that colonial and modern ‘territorial advances’ would be impossible without specific forms of political violence upon the lands to make them ‘available.’ Thus, extractivism relies on epistemological and ontological processes of overlooking or denying most existences, radically narrowing the scope of beings who can exist in a place, while often introducing a very limited array of life in place of the beings that are eradicated (Kröger 2021). An example of this is the imposition of monocultural plantations in place of the Amazon forests and the beings and webs of life therein.

By examining extractivism through the lens of political ontology, it presents itself not only as destructive, intensive appropriation of natural and human resource wealth, but rather as erasure of human and other-than-human persons, knowledges and of worlds (Blaser and de la Cadena 2018). These kinds of approaches offer a significant contribution to the existing scholarly work, as they enable examination beyond a mechanistic or human-centric view of seeing landscapes, ecosystems, and organisms. Following the work of many of the aforementioned scholars, we argue that investigations tackling the very fabric and multiplicity of being and worlds has an enormous potential in producing transformative and important contributions about global and local extractivist processes and the myriad implications and destructions they leave behind, thus also opening up space for alternatives.

The role of frontiers

The concept of *frontiers*¹ allows for an examination of how extractivism organizes space, political structures, and social relations. The interest in expansion derives chiefly from the nature of capitalism, constantly seeking new resources to turn into profitable use, following its recurring crises of over-accumulation (Harvey 2003). Hence, we can observe both

the horizontal and vertical expansion of frontiers in physical space (Barney 2009; Bennett 2016; De Angelis 2004; Moore 2000, 2015) as well as beyond the strictly material (e.g. Couldry and Mejias [2019]; Mezzadra and Neilson [2017]).

Even in modernity, frontiers are expanding and as relevant as ever (e.g. Bennett [2016]). Based on field research and comparison of frontier expansion in different parts of Latin America, Kröger and Nygren (2020) suggest that it is useful to distinguish between resource and commodity frontiers as heuristic tools. These terms are typically conflated but should be used to refer to different processes. Resource frontiers turn nature into natural resources and appropriate state or commons land for private gain, in a way which is destructive, for example through deforestation. This is clearly an extractivist process. A commodity frontier refers to starting to produce commodities for external markets, which could be achieved in a way which does not cause deforestation (Kröger and Nygren 2020) and should not be conflated in all cases with extractivism. If both processes are present simultaneously, such as in the expansion of soybean plantations into primary forests, one can call this process the expansion of a commoditizing resource frontier (Kröger and Nygren 2020). New frontiers can be opened with discoveries or inventions of new resources and value (Barney 2009; Eilenberg 2014; Kelly and Peluso 2015; Tsing 2003) or socio-technological innovations that enable the further exploitation of existing ones (Verbrugge and Geenen 2019). In terms of agricultural frontiers, an example of the former is the production of biofuels instead of food, while an example of the latter is the introduction of the genetically modified organisms in a monoculture regime (Petras and Veltmeyer 2014).

New configurations of nature-society relations allow for previously uncoun- ted 'nature' to become tradable commodities (Castree 2008; Toivanen and Kröger 2019). The expansion of frontiers leaves behind post-frontier spaces, and old, collapsed, or closed frontiers can be re-opened when new technologies of extraction or political forces are introduced to these areas. There are also distinct modalities of frontier expansion, the keys being frontier opening, collapse, re-opening, and closure modes. What is important to note about these is that prior frontier expansion or deceleration paces are not a guarantee of future developments, and that normally both policy practitioners and scholars have over-emphasized the tendency of frontier opening or closure in their analyses, for which reason more in-depth historical analysis is essential (Kröger and Nygren 2020).

Frontiers are characterized using power to secure access to a resource. At the rhetorical level, frontier has been used as 'an ideological device to legitimize occupation and exploitation by states and companies' (Verbrugge and Geenen 2019, 414). A frontier is thus enclosed and operationalized in two processes: the initial and continuous representation of an area as a frontier, and its actual enclosure and exploitation (Barney 2009 in Bennett 2016). Enclosure often requires removal of previous systems of access, including rights, authorities, jurisdictions, and their spatial representations (Borras et al. 2011; Rasmussen and Lund 2018). Therefore, frontier has been conceptualized as 'a zone of destruction of property systems, political structures, social relations, and life-worlds to make way for new

¹Frontier can have several meanings but, in this work, we derive mainly from the literature on 'commodity frontiers' (Moore 2000, 2015; Teràn Mantovani 2016) and 'extractive frontiers' (e.g. Frederiksen and Himley 2020). 'Frontiers of extractivism' has been recognized in literature on Latin American extractivism, but there the concept has been less elaborated (e.g. Acosta 2013; Svampa 2015).]

ways of resource extraction' (Rasmussen and Lund 2018, 389; see also Geiger [2009]). This dynamism of the frontier also fuels resistance movements, ultimately resulting in political conflicts (Petras and Veltmeyer 2017).

Frontier expansion has been applied as a concept to analyze extractivism beyond material resources, for example, data extractivism. According to Couldry and Mejias (2019, xiii) data is 'information flows that pass from human life in all its forms to infrastructures for collection and processing.' Although the sites of extraction are literally at one's fingertips, the process happens because it exists as a nexus of conceptual, legal, and technological frontiers. This exemplifies the embeddedness and expansion of an extractivist way of organizing life to previously unstudied realms of social being, and the importance of treating extractivisms from a world systemic point of view rather than just a sector of economic or political activity.

The role of the state

The role of the state in relation to extractivism is crucial due to its agency in filtering global dynamics, as seen in exploring agro-extractivism (McKay, Alonso-Fradejas, and Ezquerro-Cañete 2021). The modern nation-state has been seen historically as being ultimately responsible for economic development, even if the neoliberal turn has subordinated the state to corporate capital (Kay 2022) and conflicting domestic interests are still negotiated (Polanyi Levitt 2022) according to the balances of power among social forces (Andreucci and Radhuber 2017). Analyzing state agencies, social forces, structures, and governing elites allows us to determine both causes of regularization and normalization of regime accumulation (Merino 2020; Sankey 2020), and drivers for institutional or structural changes (Andreucci and Radhuber 2017; Gustafsson and Scurrah 2019). The 'State' – when seen as an actor in its own right – can and does organize extractivisms in several ways (Gudynas 2018), including through violent neoliberal statecraft (Purcell 2021), as in securing neo-extractivism as an economic model (Brand, Dietz, and Lang 2016).

The capitalist state is a territorial entity working to reproduce the condition of accumulation, mainly through four processes: its place-based property regimes (see also Gudynas [2018]; Merino [2020]), infrastructure delivery (see also Mann [1984]), scientific-intellectual practices that make the biosphere economically legible and accessible (Parenti 2015) and through state violence (Dunlap and Jakobsen 2019). Operationally, the state employs developing models, strategies, tools, and discourses (Merino 2020). All in all, the state is central in birthing extractivism, which also occurs when neoliberal state policies grant privileges to corporations (Ehrnström-Fuentes and Kröger 2018) or create niche markets such as supporting agro-forestry transitions (Ollinaho and Kröger 2021).

However, rather than ignoring globalized world system dynamics (Moreno 2015 in Brand, Dietz, and Lang 2016, 134), wider contextualization should be borne in mind. The state's role can be clarified in relation to capital accumulation: the most powerful force that shapes the modern socio-political world (Elkin 2006). Applying capitalism to the analysis of the state's role unveils the omnipresent, dominant, and destructive state forms of appropriation of nature (Brand, Görg, and Wissen 2020), given by the capacity to control the biosphere, a prerequisite for its use by capital (Parenti 2015). To conclude, by conceptualizing the state as a social relation deeply embedded in the capitalist economy with its power relations 'and to the everyday life of the people' (Poulantzas

1978 in Brand, Görg, and Wissen 2020, 171), new perspectives for possible unfolding alternatives to extractivism emerge; including how to realize food sovereignty (Robles and Veltmeyer 2015).

The role of value

One of the most pertinent issues in the latest theorizations of extractivism is value. Ye et al. (2019) conceptualize value inherently within extractivism, which, they claim, ought to be understood broadly ‘as an organized, and internally coherent, system for ongoing *value* extraction’ (Ye et al. 2019, 5, emphasis added). Understanding extractivism through value resonates with what Andreucci et al. (2017) call ‘value grabbing.’ They argue that currently, ‘capital circulation flows increasingly through assets from which value is appropriated by means of dispossession and rent extraction rather than through the productive circuits of expanded capital valorization’ (Andreucci et al. 2017, 29). However, as David Graeber has clarified, debt is an age-old issue (Graeber 2011) and creditors and core regions have extracted wealth for the past five thousand years (Frank and Gills 1993).

For instance, the British empire extracted more from its Indian colony than India was able to create surplus, even while being a prominent global export economy (Patnaik 2017). This drain, estimated to be as much as 45 trillion pounds, was accomplished through taxation and other accounting methods and kept the Indian peninsula poor and starved millions despite the massive production (Patnaik 2017). Throughout the history of imperialism and colonialism, core regions have used their power to ‘centralize lawmaking authority in their own hands and control the economy in predatory, extractive ways’ (Hudson 2015, 250). With the ascendancy of the USA to the super-hegemonic position, lawmaking has become globalized, which means that previously sovereign debt has been rendered commercial, allowing creditors, for instance, to sue entire nations (Potts 2020). Economic drain from the periphery, however, is not only past life, but instead, ‘the wealthy nations of the global North *continue* to rely on extraction to finance economic growth and sustain high levels of consumption.’ (Hickel, Sullivan, and Zoomkawala 2021, 1030 emphasis added).

Debt and value extraction is of the utmost importance to global extractivism because of the spectacular growth of the financial sector and debt. Creditors extract a rising flow of interest from the economy by merely owning something (Hudson 2012). Crucially, such a scheme ought to be seen at a global scale. Today, many countries are and remain heavily indebted, recurrently paying their economic surpluses as interest to their creditors (Hudson 2015). Furthermore, many indebted countries are obliged to cash in their natural and human resource wealth under unequal exchange-rate differentials, constituting a massive economic drain from the Global South to Global North (Hickel, Sullivan, and Zoomkawala 2021). Such extractivist global structures condition, constrain, and pressure nations, effectively inhibiting them from pursuing other types of development than cheapening (Patel and Moore 2017) their natural and human resource wealth. In parallel, core countries, particularly the USA, can print that very same money without limits for their endless quantitative easing schemes, affording them a massive space to advance policies. Understanding contemporary extractivism requires analyzing monetary – particularly creditor–debtor – relations at different levels, as they constitute the pragmatic context for people, organizations, and nations to act.

While the money qua value should be seen as rather ubiquitous in distinct empirical cases of extractivism, having money qua value as the measure for extractivism is also controversial, at least if we take that value to be decided via global markets (Graeber 2001). While it allows analyzing a broader range of distinct social practices as extractive, it simultaneously entails commensurability of those distinct issues – in that it implies everything is measurable through money. However, as scholars from different fields, as well as those resisting extractivism, have argued, not everything is commensurable with money (Kröger 2020). Therefore, we propose a more general perspective on value that sees value as tied to and only meaningful in relation to the social practices as part of which something is valued. Such a relational accounting or understanding of value shifts the focus from measuring value in money to scrutinizing ongoing processes of valuing, for instance, how claims based on property rights are constructed (Röpke 2021). As discussed in the previous section on ontologies, this is crucial, as extractivism is premised on the onto-epistemological devaluing of most of the web of life. This approach opens questions such as how valuing unfolds and how the already monetarily valued may be devalued regarding practices working towards supporting, as well as in opposition to, extractivist practices.

The role of technology

Technology affords accessing and using territory and the biosphere (Parenti 2015), and as such its relationship with extractivism is highly significant. Eduardo Gudynas (2015) considers this nexus in his model four generations of extractivism by suggests that extractive technologies have progressively amplified and intensified extraction since the sixteenth century. Albeit the model encompasses only the canonical natural resource categories of the classical interpretation of extractivism, it retains its validity also in examining new extractivist phenomena along with their extended scope. Whether conventional natural resources or data are at stake, technology still lays at the core of the current extractivist practices (Madianou 2019). Thus, to analyze extractivism, one cannot disregard its technological aspects (Machado Araújo 2015), and their role in driving economic growth (Barbier 2011).

Under a critical development approach, technology can be socially constructed and influenced as it actualizes social factors such as relations, political power, and interests (Záyago Lau 2022). Technological innovation has amplified the magnitude and extended the range of extractivism by turning ‘labor-intensive production into capital-intensive operations’ (Smart 2020, 771). In agriculture, such a shift resulted in augmenting the cheap labor pool (Kay 2022). However, to comprehend these relations, instead of the ‘availability of’ one should rather think of the ‘accessibility to’ certain technologies and their applications. In Dependency Theory for instance, Theotônio Dos Santos identified industrial-technological dependence as the last historical form of dependence (Garcia and Borba de Sà 2022). Apart from the available technologies, the global commodity markets also influence resource extraction, as demonstrated for example by the historical switch from whale oil to petroleum oil (Bennett 2016).

Moreover, technology as an element of a developmental model (Brand, Dietz, and Lang 2016) can enforce path dependency, where existent extractive technologies prevent the inhabitants of resource frontiers from pursuing alternative forms of economic

development (Bennett 2016). This political impact of technology is known as technological lock-ins (Kröger 2021) i.e. the locking of an area into a particular extractive mode of production. For example, the Talvivaara mine in Finland, which caused a major tailings dam leakage, was kept running with the argument that ending the bioheap-leaching process would cause even greater pollution (Kröger 2016). Another example from agro-extractivism, is large-scale eucalyptus monoculture for pulp production, which erode the soils and deplete and pollute water sources. Such large-scale and practically irreversible environmental degradation makes these areas most suitable for the continuation of a given type of extractivism, at the cost of alternative land use (Kröger 2014). Obtaining tenure security seems to give a greater right to pollute, and seems to be a main motivation for the choice by a polity for investment in destructive extractive operations (Hall 2002): the creation of pollution havens in concert with technological lock-ins support the creation of deeper power for extraction to continue (Kröger 2013).

Technological advancements induce significant effects within space and time. Spatially the dynamics of extractivism unfurl in a dichotomy between resource-dependent and industrialized societies (Martín 2017). There, new technologies foster the expansion of geographical frontiers (Barbier 2012, 2019) both widening (Moore 2000; Verbrugge and Geenen 2019) horizontally, and deepening (Moore 2000), vertically, towards lower geological *strata* (Arboleda 2020; Bennett 2016). Vertical expansion aims at exploiting more scanty resources (Smart 2020) in the face of depletion, as in the cases of fracking, tar sands, or other unconventional energy sources (Preston 2017; Svampa 2019; Willow 2018). Temporally, technologies increase the intensity (Bennett 2016; Mezzadra and Neilson 2017) in both production and logistics either as a cost-reducing kind (Barbier 2019) or by improving the internal efficiency of a given extractivist process.

Digital extractivisms

The lens of extractivism has been increasingly applied to new resources in recent years and has come to include technology-based digital extractivisms. There is controversy concerning expanding the application of the concept extractivism beyond the classic natural resources. Yet, the observation that digital platforms are 'now a defining feature of contemporary capitalism' (Sadowski 2020, 562) implies that if an extractivist lens is intended to provide a holistic understanding of the contemporary world, then it must address the 'virtual' sphere (Ollinaho 2018). This recognition expands the scope for further analysis, for example, linking the physical impacts of digital extractivisms vis-à-vis the value of the resources produced, versus the ongoing costs of the environmental damage (e.g. from energy or power usage, device creation and manufacture, and changes in social patterns) (Chagnon, Hagolani-Albov, and Hokkanen 2021).

Overall, there seem to be three distinct types of digital extractivism currently identified in the academic literature. The first, and most explored, is data extractivism (Moore 2020; Nosthoff and Maschewski 2020; Ricaurte 2019; Thorat 2020). The term was likely coined by Morozov (2017) and has been used increasingly since that time. However, there are analyses and observations both before and after Morozov that do not necessarily directly use the term 'data extractivism,' but nevertheless demonstrate analysis of approaches, relations, and outcomes which are very similar to (or interrelated with) extractivism. For example, Sadowski (2019, 2020) analyzes the features, dynamics, and dangers of 'data

extraction' as a central theme, but never uses the term 'extractivism' explicitly; while Calzada (2019) prefers the term 'algorithmic extractivism.' Similarly, while Couldry and Mejias (2019) do discuss data extractivism directly, it is only discussed as an embedded part of their larger theorization on 'data colonialism.' Data colonialism is described as an appropriation of human life so that data can be continuously extracted from it for the benefit of specific interests, with companies from Western countries (especially the USA) and China leading the way and competing for hegemony (Couldry and Mejias 2019, 6; xxi). They do explicitly note that the 'modes, intensities, scales, and contexts' of data colonialism vary significantly from those that can be found in the historical understanding and practice of colonialism (Couldry and Mejias 2019, 6). However, they point out that despite this, the function of the data colonialism remains the same. Both colonialisms were set up in a way to dispossess the colonized of their resources, be they natural or social. In today's global economy 'the richest, fastest-growing companies now operate platforms, not factories' (Sadowski 2020, 563) and they epitomize an 'operational centre,' which Ye et al. (2019) theorize as being the main actors of extractivism. While the giants of the data economy, such as Facebook and Google, feature as among the most prominent digital or data extractive actors in the contemporary world, digital realms afford and entail a range of other types of extractivist activities as well. Data extractivism can also be linked to violence (literal and metaphorical), discrimination, social damage, and oppression (Chagnon, Hagolani-Albov, and Hokkanen 2021).

The second distinct type of extractivism in the digital sphere, as suggested by Gago and Mezzadra (2017), is in relation to 'gold farming.' Gold farming consists of groups of people paid low (or in some cases, no) wages to play massive multiplayer online games for long periods, to level up characters as well as collect rare items and resources, with the owner of the gold farm selling those characters, goods, and resources online for real money. The third variety of digital extractivism is cryptocurrency mining operations (Mezzadra and Neilson 2017). To date there have been some comparisons of the modes of operation and outcomes in cryptocurrency mining to instances of extractivism in history (Zimmer 2017), and studies of how cryptocurrencies can help facilitate and drive extractivism and neo-extractivism (Rosales 2016, 2019). However, there has been very little work on analysis of cryptocurrency mining operations themselves through the lens of extractivism/neo-extractivism. The recognition of data extractivisms as part of a wider process of contemporary global extractivism opens important aspects of the current world-system, fueled by, and premised on extractivist logics and practices.

Conclusions

In this article we have discussed the many contested forms of knowledge production related to understanding extractivism(s); an analysis of the origins and evolution of the concept in the academic literature; its increasing relevance to a wide range of issues current in on-going debates in the social and environmental sciences; and its recent expansion (in practice and concept) into a global form of organizing life, as well as into new arenas beyond the traditional application to natural resource extraction. Extractivism is increasingly relevant across a wide range of social science disciplines and has become a key concept in Critical Agrarian Studies and Critical Development Studies. Premised on capital accumulation, the global expansion and intensification of extractivist practices

and patterns in recent decades has elicited the need to further conceptualize not only the variations of plural extractivisms and their contexts, drivers, and consequences, but also the phenomena of global extractivism and its practices and patterns.

Understanding the relationship between extractivism(s) and multiple global crises, including climate change, ecological degradation, biodiversity loss, global pandemics, and human displacement, is a matter of great importance and historical urgency, and as such deserves much greater empirical and analytical attention in the coming period. Ways out of the present dilemmas presented by continued global economic growth, and the urgent search for 'sustainability' and for creating genuine transformative alternatives to the extremes of destructiveness of existing extractivisms, are urgently required. The field of enquiry into these myriad potential transformative alternatives, some of which involve engagement with radically different ontological positions, understandings, and valuations of what exists and is destroyed, must be urgently expanded. Finding and building transformative alternatives to extractivism and global extractivism is a central issue of our times. Developing new conceptual paradigms 'beyond extractivism' and applying them to practice, is a key social and political task in the years ahead. As we have argued in this article, we see extractivism as an emergent and rapidly expanding 'organizing concept' which speaks to some of the most acute problems and crises now facing humanity. Strengthening and expanding the work to further refine the definition of extractivism and global extractivism, develop new theorizations, and enhance these concepts in their analytical utility and range of deployment across the critical social sciences, will reveal how much impact and real difference a concept can make to transform the world.

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References

- Acosta, Alberto. 2013. "Extractivism and Neoextractivism: Two Sides of the Same Curse." In *Beyond Development: Alternative Visions from Latin America*, edited by Miriam Lang, and Dunia Mokrani, 61–86. Amsterdam: Rosa-Luxemburg Foundation, Quito and Transnational Institute.
- Aguinaga, Margarita, Miriam Lang, Dunia Mokrani, and Alejandra Santillana. 2013. "Critiques and Alternatives to Development: A Feminist Perspective." In *Beyond Development: Alternative*

- Visions from Latin America*, edited by Miriam Lang, and Dunia Mokrani, 41–59. Amsterdam, Netherlands: Rosa-Luxemburg Foundation: Quito, Ecuador and Transnational Institute.
- Akram-Lodhi, A. Haroon. 2022. "Food Regimes and Agrarian Questions." In *The Essential Guide to Critical Development Studies*, edited by Henry Veltmeyer, and Paul Bowles, 275–283. Second Edition, Routledge Critical Development Studies. Abingdon Oxon, New York, NY: Routledge. <https://doi.org/10.4324/9781003037187-41>.
- Akram-Lodhi, A. Haroon, and Cristóbal Kay. 2010a. "Surveying the Agrarian Question (Part 1): Unearthing Foundations, Exploring Diversity." *Journal of Peasant Studies* 37 (1): 177–202. <https://doi.org/10.1080/03066150903498838>.
- Akram-Lodhi, A. Haroon, and Cristóbal Kay. 2010b. "Surveying the Agrarian Question (Part 2): Current Debates and Beyond." *Journal of Peasant Studies* 37 (2): 255–284. <https://doi.org/10.1080/03066151003594906>.
- Alonso-Fradejas, Alberto. 2018. "The Rise of Agro-extractive Capitalism: Insights from Guatemala in the Early 21st Century." PhD diss., International Institute of Social Studies, The Hague.
- Amin, Samir. 2011. *Maldevelopment: Anatomy of a Global Failure*. Oxford, United Kingdom: Fahamu.
- Andrade, Daniela. 2022. "Neoliberal Extractivism: Brazil in the Twenty-First Century." *Journal of Peasant Studies* 49 (4).
- Andreucci, Diego, Melissa García-Lamarca, Jonah Wedekind, and Erik Swyngedouw. 2017. "Value Grabbing: A Political Ecology of Rent." *Capitalism Nature Socialism* 28 (3): 28–47. <https://doi.org/10.1080/10455752.2016.1278027>.
- Andreucci, Diego, and Isabella M. Radhuber. 2017. "Limits to "Counter-Neoliberal" Reform: Mining Expansion and the Marginalisation of Post-Extractivist Forces in Evo Morales's Bolivia." *Geoforum; Journal of Physical, Human, and Regional Geosciences* 84: 280–291. <https://doi.org/10.1016/j.geoforum.2015.09.002>.
- Arboleda, Martín. 2020. *Planetary Mine. Territories of Extraction Under Late Capitalism*. London, United Kingdom: Verso.
- Ashamole, Darlington C. 2019. "Extractive Industry and the Politics of Manhood in Nigeria's Niger Delta: A Masculinity Perspective of Gender Implication of Resource Extractivism." *NORMA* 14 (4): 255–270. <https://doi.org/10.1080/18902138.2019.1663988>.
- Ayelazuno, Jasper Abembia. 2014. "The "New Extractivism" in Ghana: A Critical Review of Its Development Prospects." *The Extractive Industries and Society* 1 (2): 292–302. <https://doi.org/10.1016/j.exis.2014.04.008>.
- Ayelazuno, Jasper Abembia. 2019. "Land Governance for Extractivism and Capitalist Farming in Africa: An Overview." *Land Use Policy* 81 (2): 843–851. <https://doi.org/10.1016/j.landusepol.2018.06.037>.
- Barbier, Edward. 2011. *Scarcity and Frontiers: How Economies Have Developed through Natural Resource Exploitation*. Cambridge, United Kingdom; New York: Cambridge University Press.
- Barbier, Edward B. 2012. "Scarcity, Frontiers and Development." *The Geographical Journal* 178 (2): 110–122. <https://doi.org/10.1111/j.1475-4959.2012.00462.x>.
- Barbier, Edward B. 2019. *Natural Resources and Economic Development*. 2nd ed. Cambridge University Press. <https://doi.org/10.1017/9781316875681>.
- Barney, Keith. 2009. "Laos and the Making of a 'Relational' Resource Frontier." *Geographical Journal* 175 (2): 146–159. <https://doi.org/10.1111/j.1475-4959.2009.00323.x>.
- Barrington-Leigh, Christopher. 2017. "The Role of Subjective Well-Being as an Organizing Concept for Community Indicators." In *Community Quality-of-Life Indicators: Best Cases VII*, edited by Meg Holden, Rhonda Phillips, and Chantal Stevens, 19–34. New York, NY: Springer International Publishing. <https://doi.org/10.1007/978-3-319-54618-6>.
- Bauerly, Brad. 2017. *The Agrarian Seeds of Empire: The Political Economy of Agriculture in US State Building*. Leiden: Brill.
- Bebbington, Anthony, Abdul-Gafaru Abdulai, Denise Humphreys Bebbington, Marja Hinfelaar, and Cynthia Sanborn. 2018. *Governing Extractive Industries: Politics, Histories, Ideas*. 1st ed. Oxford, United Kingdom: Oxford University Press.
- Bennett, Jane. 2010. *Vibrant Matter: A Political Ecology of Things*. Durham, NC: Duke University Press.

- Bennett, Mia M. 2016. "Discursive, Material, Vertical, and Extensive Dimensions of Post-Cold War Arctic Resource Extraction." *Polar Geography* 39 (4): 258–273. <https://doi.org/10.1080/1088937X.2016.1234517>.
- Bernstein, Henri. 2010. *Class Dynamics of Agrarian Change*. Halifax, Nova Scotia: Fernwood Publishing.
- Beyea, Suzanne, and Leslie H. Nicoll. 1998. "Writing an Integrative Review." *AORN Journal* 67 (4): 877–880. [https://doi.org/10.1016/s0001-2092\(06\)62653-7](https://doi.org/10.1016/s0001-2092(06)62653-7).
- Billo, Emily. 2020. "Patriarchy and Progressive Politics: Gendered Resistance to Mining Through Everyday Social Relations of State Formation in Intag, Ecuador." *Human Geography* 13 (1): 16–26. <https://doi.org/10.1177/1942778620910895>.
- Blaser, Mario, and Marisol de la Cadena. 2018. "Introduction. PLURIVERSE." In *A World of Many Worlds*, edited by Marisol de la Cadena, and Mario Blaser, 1–22. Durham, NC: Duke University Press.
- Bond, Patrick. 2016. "BRICS Banking and the Debate Over sub-Imperialism." *Third World Quarterly* 37 (4): 611–629. <https://doi.org/10.1080/01436597.2015.1128816>.
- Borras, Jr., Saturnino M. 2020. "Agrarian Social Movements: The Absurdly Difficult but not Impossible Agenda of Defeating Right-Wing Populism and Exploring A Socialist Future." *Journal of Agrarian Change* 20 (1): 3–36. <https://doi.org/10.1111/joac.12311>.
- Borras, Saturnino, M. Ruth Hall, Ian Scoones, Ben White, and Wendy Wolford. 2011. "Towards a Better Understanding of Global Land Grabbing: An Editorial Introduction." *Journal of Peasant Studies* 38 (2): 209–216. <https://doi.org/10.1080/03066150.2011.559005>.
- Borras, Jr., Saturnino M., Cristóbal Kay, Sergio Gómez, and John Wilkinson. 2012. "Land Grabbing and Global Capitalist Accumulation: key Features in Latin America." *Canadian Journal of Development Studies/Revue canadienne d'études du développement* 33 (4): 402–416. <https://doi.org/10.1080/02255189.2012.745394>.
- Brad, Alina, Anke Schaffartzik, Melanie Pichler, and Christina Plank. 2015. "Contested Territorialization and Biophysical Expansion of Oil Palm Plantations in Indonesia." *Geoforum; Journal of Physical, Human, and Regional Geosciences* 64 (8): 100–111. <https://doi.org/10.1016/j.geoforum.2015.06.007>.
- Brand, Ulrich, Tobias Boos, and Alina Brad. 2017. "Degrowth and Post-Extractivism: Two Debates with Suggestions for the Inclusive Development Framework." *Current Opinion in Environmental Sustainability* 24 (2): 36–41. <https://doi.org/10.1016/j.cosust.2017.01.007>.
- Brand, Ulrich, Kristina Dietz, and Miriam Lang. 2016. "Neo-Extractivism in Latin America – One Side of a New Phase of Global Capitalist Dynamics." *Ciencia Política* 11 (21): 125–159. <https://doi.org/10.15446/cp.v11n21.57551>.
- Brand, Ulrich, Christoph Görg, and Markus Wissen. 2020. "Overcoming Neoliberal Globalization: Social-Ecological Transformation from a Polanyian Perspective and Beyond." *Globalizations* 17 (1): 161–176. <https://doi.org/10.1080/14747731.2019.1644708>.
- Bruna, Natcha. 2022. "Going Beyond Efficiency-Driven Extractivism: A Climate-Smart World and the Rise of Green Extractivism." *Journal of Peasant Studies* 49 (4).
- Bunker, Stephen G. 1988. *Underdeveloping the Amazon: Extraction, Unequal Exchange, and the Failure of the Modern State*. Chicago: University of Chicago Press.
- Busscher, Nienke, Constanza Parra, and Frank Vanclay. 2020. "Environmental Justice Implications of Land Grabbing for Industrial Agriculture and Forestry in Argentina." *Journal of Environmental Planning and Management* 63 (3): 500–522. <https://doi.org/10.1080/09640568.2019.1595546>.
- Cáceres, Daniel M. 2015. "Accumulation by Dispossession and Socio-Environmental Conflicts Caused by the Expansion of Agribusiness in Argentina." *Journal of Agrarian Change* 15 (1): 116–147. <https://doi.org/10.1111/joac.12057>.
- Calzada, Igor. 2019. "Data Spaces and Democracy." *RSA Journal* 165 (Issue 2 (5578)): 40–43. <https://doi.org/10.13140/RG.2.2.35392/89601/1>.
- Caretta, Martina Angela, Sofia Zaragocin, Bethani Turley, and Kamila Orellana. 2020. "Women's Organizing Against Extractivism: Towards A Decolonial Multi-Sited Analysis." *Human Geography* 13 (1): 49–59. <https://doi.org/10.1177/1942778620910898>.
- Castree, Noel. 2008. "Neoliberalising Nature: Processes, Effects, and Evaluations." *Environment and Planning A: Economy and Space* 40 (1): 153–173. <https://doi.org/10.1068/a39100>.

- Chagnon, Christopher W., Sophia E. Hagolani-Albov, and Saana Hokkanen. 2021. "Extractivism at Your Fingertips." In *Our Extractive Age: Expressions of Violence and Resistance*, edited by Judith Shapiro, and John-Andrew McNeish, 176–188. Oxfordshire, UK: Routledge.
- Clark, Timothy P., and Stefano B. Longo. 2021. "Global Labor Value Chains, Commodification, and the Socioecological Structure of Severe Exploitation. A Case Study of the Thai Seafood Sector." *Journal of Peasant Studies*, 1–25. <https://doi.org/10.1080/03066150.2021.1890041>.
- Cordell, Dana, Jan-Olof Drangert, and Stuart White. 2009. "The Story of Phosphorus: Global Food Security and Food for Thought." *Global Environmental Change* 19 (2): 292–305. <https://doi.org/10.1016/j.gloenvcha.2008.10.009>.
- Couldry, Nick, and Ulises Ali Mejias. 2019. *The Costs of Connection: How Data Is Colonizing Human Life and Appropriating it for Capitalism. Culture and Economic Life*. Stanford, CA: Stanford University Press.
- Dal Maso, Giulia, Shanthi Robertson, and Dallas Rogers. 2019. "Cultural Platform Capitalism: Extracting Value from Cultural Asymmetries in RealTech." *Social & Cultural Geography* 22 (4): 565–580. <https://doi.org/10.1080/14649365.2019.1601246>.
- Davis, Mike. 2006. *Planet of Slums*. London, UK: Verso.
- De Angelis, Massimo. 2004. "Separating the Doing and the Deed: Capital and the Continuous Character of Enclosures." *Historical Materialism* 12 (2): 57–87. <https://doi.org/10.1163/1569206041551609>.
- de la Cadena, Marisol, and Mario Blaser, eds. 2018. *A World of Many Worlds*. Durham, NC: Duke University Press.
- de la Cadena, Marisol, Marianne E. Lien, Mario Blaser, Casper Bruun Jensen, Tess Lea, Atsuro Morita, Heather Swanson, Gro B. Ween, Paige West, and Margaret Wiener. 2015. "Anthropology and STS: Generative Interfaces, Multiple Locations." *HAU: Journal of Ethnographic Theory* 5 (1): 437–475. <https://doi.org/10.14318/hau5.1.020>.
- de los Reyes, Julie. 2022. "Re-making Pascua Lama: Corporate Financialisation and the Production of Extractive Space." *Journal of Peasant Studies* 49 (4).
- DeVore, Jonathan. 2017. "The Mind of the Copaiba Tree: Notes on Extractivism, Animism, and Ontology from Southern Bahia." *Ethnobiology Letters* 8 (1): 115–124. <https://doi.org/10.14237/ebl.8.1.2017.965>.
- Dunlap, Alexander, and Jostein Jakobsen. 2019. *The Violent Technologies of Extraction: Political Ecology, Critical Agrarian Studies and the Capitalist Worldeater*. London, UK: Palgrave, McMillan. <https://doi.org/10.1007/978-3-030-26852-7>.
- Durante, Francesco, Markus Kröger, and William LaFleur. 2021. "Extraction and Extractivisms: Definitions and Concepts." In *Our Hyper-Extractive Age: Expressions of Violence and Resistance*, edited by Judith Shapiro, and John-Andrew McNeish, 19–30. Oxfordshire, UK: Routledge. <https://doi.org/10.4324/9781003127611-3>.
- Ehrnström-Fuentes, Maria. 2019. "Confronting Extractivism – the Role of Local Struggles in the (Un)Making of Place." *Critical Perspectives on International Business*. Vol. ahead-of-print (No. ahead-of-print). <https://doi.org/10.1108/cpoib-01-2018-0016>.
- Ehrnström-Fuentes, Maria, and Markus Kröger. 2018. "Birthing Extractivism: The Role of the State in Forestry Politics and Development in Uruguay." *Journal of Rural Studies* 57: 197–208. <https://doi.org/10.1016/j.jrurstud.2017.12.022>.
- Eilenberg, Michael. 2014. "Frontier Constellations: Agrarian Expansion and Sovereignty on the Indonesian-Malaysian Border." *Journal of Peasant Studies* 41 (2): 157–182. <https://doi.org/10.1080/03066150.2014.885433>.
- Elhacham, Emily, Liad Ben-Uri, Johnathan Grozovski, Yinon M. Bar-On, and Ron Milo. 2020. "Global Human-Made Mass Exceeds all Living Biomass." *Nature* 588 (7838): 442–444. <https://doi.org/10.1038/s41586-020-3010-5>.
- Elkin, Stephen L. 2006. "Political Theory and Political Economy." In *The Oxford Handbook of Political Theory*, edited by John S. Dryzek, Bonnie Honig, and Anne Phillips, 792–809. Oxford Handbooks of Political Science. Oxford; New York: Oxford University Press.
- Engels, Bettina, and Kristina Dietz, eds. 2017. *Contested Extractivism, Society and the State: Struggles Over Mining and Land*. London, UK: Palgrave Macmillan. <https://doi.org/10.1057/978-1-137-58811-1>.

- Escobar, Arturo. 2017. "Sustaining the Pluriverse: The Political Ontology of Territorial Struggles in Latin America." In *The Anthropology of Sustainability*, edited by Marc Brightman, and Jerome Lewis, 237–256. New York, NY: Palgrave Macmillan US. https://doi.org/10.1057/978-1-137-56636-2_14.
- Escobar, Arturo. 2018. *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*. New Ecologies for the Twenty-First Century. Durham, NC: Duke University Press.
- Farthing, Linda, and Nicole Fabricant. 2018. "Open Veins Revisited: Charting the Social, Economic, and Political Contours of the New Extractivism in Latin America." *Latin American Perspectives* 45 (5): 4–17. <https://doi.org/10.1177/0094582X18785882>.
- Fernandez, Marianna. 2018. "Feminist Dialogue Series – Feminist Alternatives to Predatory Extractivism: Contributions and Experiences from Latin America." Mozambique: Friedrich-Ebert-Stiftung. <https://pdfs.semanticscholar.org/d096/75d41c61361dedfd130a3751eab032b953e1.pdf>.
- Foster, John Bellamy. 1999. "Marx's Theory of Metabolic Rift: Classical Foundations for Environmental Sociology." *American Journal of Sociology* 105 (2): 366–405. <https://doi.org/10.1086/210315>.
- Foster, John Bellamy. 2000. *Marx's Ecology: Materialism and Nature*. New York, NY: NYU Press.
- Frank, Andre Gunder, and Barry K. Gills, eds. 1993. *The World System: Five Hundred Years or Five Thousand*. London, UK: Routledge.
- Frederiksen, Tomas, and Matthew Himley. 2020. "Tactics of Dispossession: Access, Power and Subjectivity at the Extractive Frontier." *Transactions of the Institute of British Geographers* 45 (1): 50–64. <https://doi.org/10.1111/tran.12329>.
- Friedman, Harriet, and Philip McMichael. 1989. "The Rise and Decline of National Agricultures, 1870 to the Present." *Sociologia Ruralis* 29 (2): 93–117. <https://doi.org/10.1111/j.1467-9523.1989.tb00360.x>.
- Gago, Verónica, and Sandro A. Mezzadra. 2017. "A Critique of the Extractive Operations of Capital: Toward an Expanded Concept of Extractivism." *Rethinking Marxism* 29 (4): 574–591. <https://doi.org/10.1080/08935696.2017.1417087>.
- Galeano, Eduardo. 1997. *Open Veins of Latin America: Five Centuries of the Pillage of a Continent*. New York, NY: New York University Press .
- Garcia, Ana, and Miguel Borba de Sà. 2022. "Brazil: Development strategies and peripheral conditions." In *The Essential Guide to Critical Development Studies*, edited by Henry Veltmeyer, and Paul Bowles, 147–154. Second Edition, Routledge Critical Development Studies. Abingdon Oxon, New York, NY: Routledge. <https://doi.org/10.4324/9781003037187-23>.
- Geiger, Danilo. 2009. "Turner in the Tropics: The Frontier Concept Revisited." PhD diss., Universität Luzern.
- Giraud, Maria Eugenia. 2020. "Dependent Development in South America: China and the Soybean Nexus." *Journal of Agrarian Change* 20 (1): 60–78. <https://doi.org/10.1111/joac.12333>.
- Graeber, David. 2001. *Toward an Anthropological Theory of Value: The False Coin of Our Own Dreams*. New York, NY: Palgrave.
- Graeber, David. 2011. *Debt: The First Five Thousand Years*. New York, NY: Melville House.
- Graeber, David, and David Wengrow. 2021. *The Dawn of Everything: A New History of Humanity*. London: Penguin UK.
- Grosfoguel, Ramón. 2016. "Del «Extractivismo Económico» al «Extractivismo Epistémico» Y «Extractivismo Ontológico»: una Forma Destructiva de Conocer, ser Y Estar en el Mundo." *Tabula Rasa* 24: 123–143. <https://doi.org/10.25058/20112742.60>.
- Grosfoguel, Ramón. 2020. "Epistemic Extractivism: A Dialogue with Alberto Acosta, Leanne Betasamosake Simpson, and Silvia Rivera Cusicanqui." In *Knowledges Born in the Struggle: Constructing the Epistemologies of the Global South*, edited by Boaventura de Sousa Santos, and Maria P. Meneses, 203–218. New York, NY: Routledge.
- Gudynas, Eduardo. 2015. *Extractivismos: ecología, economía y política de un modo de entender el desarrollo y la naturaleza. Primera edición*. Cochabamba, Bolivia: CEDIB, Centro de Documentación e Información Bolivia.
- Gudynas, Eduardo. 2018. "Extractivism: Tendencies and Consequences." In *Reframing Latin American Development*, edited by Ronaldo Munck, and Raúl Delgado Wise, 61–76. Routledge Critical Development Studies. London, UK: Routledge. <https://doi.org/10.4324/9781315170084-4>.

- Gudynas, Eduardo. 2021. *Extractivisms: Politics, Economy and Ecology*. Nova Scotia, Canada: Fernwood Publishing.
- Gunster, Shane, and Robert J. Neubauer. 2019. "(De)Legitimizing Extractivism: The Shifting Politics of Social Licence." *Environmental Politics* 28 (4): 707–726. <https://doi.org/10.1080/09644016.2018.1507290>.
- Gustafsson, Maria-Therese, and Martin Scurrah. 2019. "Unpacking the Extractivist State: The Role of Weak State Agencies in Promoting Institutional Change in Peru." *The Extractive Industries and Society* 6 (1): 206–214. <https://doi.org/10.1016/j.exis.2018.08.007>.
- Guzmán-Gallegos, María A. 2019. "Controlling Abandoned Oil Installations: Ruination and Ownership in Northern Peruvian Amazonia." In *Indigenous Life Projects and Extractivism: Ethnographies from South America*, edited by Cecilie Vindal Ødegaard, and Juan Javier Rivera Andía, 53–74. Cham, CH: Palgrave Macmillan. https://doi.org/10.1007/978-3-319-93435-8_2.
- Hall, Derek. 2002. "Environmental Change, Protest, and Havens of Environmental Degradation: Evidence From Asia." *Global Environmental Politics* 2 (2): 20–28. <https://doi.org/10.1162/15263800260047808>.
- Harvey, David. 2003. *The New Imperialism*. Oxford, UK: Oxford University Press, Incorporated. <http://ebookcentral.proquest.com/lib/helsinki-ebooks/detail.action?docID=886664>.
- Hickel, Jason, Dylan Sullivan, and Huzaifa Zoomkawala. 2021. "Plunder in the Post-Colonial Era: Quantifying Drain from the Global South Through Unequal Exchange, 1960–2018." *New Political Economy* 26 (6): 1030–1047. <https://doi.org/10.1080/13563467.2021.1899153>.
- Hope, Jessica. 2020. "The Anti-Politics of Sustainable Development: Environmental Critique from Assemblage Thinking in Bolivia." *Transactions of the Institute of British Geographers* 46 (1): 208–222. <https://doi.org/10.1111/tran.12409>.
- Hosseini, Hamed S.A., and Barry K. Gills. 2020. "Reinventing Global Studies Through Transformative Scholarship: A Critical Proposition." In *The Routledge Handbook of Transformative Global Studies*, edited by S. A. Hamed Hosseini, James Goodman, Sara C. Motta, and Barry K. Gills, 13–28. Abingdon: Routledge.
- Hoyos, Héctor. 2019. *Things with a History: Transcultural Materialism and the Literatures of Extraction in Contemporary Latin America*. New York, NY: Columbia University Press. <https://doi.org/10.7312/hoyo19304>.
- Hudson, Michael. 2012. "The Road to Debt Deflation, Debt Peonage, and Neofeudalism." Levy Economics Institute of Bard College Working Paper No. 708. <https://doi.org/10.2139/ssrn.2007284>.
- Hudson, Michael. 2015. *Killing the Host: How Financial Parasites and Debt Bondage Destroy the Global Economy*. Petrolia, CA: Counterpunch Books.
- Ingold, Tim. 2018. "One World Anthropology." *HAU: Journal of Ethnographic Theory* 8 (1–2): 158–171. <https://doi.org/10.1086/698315>.
- Kay, Cristóbal. 2022. "Contemporary dynamics of agrarian change." In *The Essential Guide to Critical Development Studies*, edited by Henry Veltmeyer, and Paul Bowles, 267–274. Second Edition, Routledge Critical Development Studies. Abingdon Oxon, New York, NY: Routledge. <https://doi.org/10.4324/9781003037187-40>.
- Kelly, Alice B., and Nancy Lee Peluso. 2015. "Frontiers of Commodification: State Lands and their Formalization." *Society & Natural Resources* 28 (5): 473–495. <https://doi.org/10.1080/08941920.2015.1014602>.
- Kimmerer, Robin W. 2013. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*. Minneapolis, MN: Milkweed editions.
- Klein, Naomi. 2014. *This Changes Everything: Capitalism vs. the Climate*. New York, NY: Simon & Schuster.
- Kopenawa, Davi, and Bruce Albert. 2013. *The Falling Sky: Words of a Yanomami Shaman*. Boston, MA: Harvard University Press.
- Krause, Sharon R. 2020. "Environmental Domination." *Political Theory* 48 (8): 443–468. <https://doi.org/10.1177/0090591719890833>.
- Kröger, M. 2012. "Neo-mercantilist Capitalism and Post-2008 Cleavages in Economic Decision-Making Power in Brazil." *Third World Quarterly* 33 (5): 887–901.

- Kröger, Markus. 2013. *Contentious Agency and Natural Resource Politics*. Abingdon, UK: Routledge.
- Kröger, Markus. 2014. "The Political Economy of Global Tree Plantation Expansion: A Review." *Journal of Peasant Studies* 41 (2): 235–261. <https://doi.org/10.1080/03066150.2014.890596>.
- Kröger, Markus. 2016. "Spatial Causalities in Resource Rushes: Notes From the Finnish Mining Boom." *Journal of Agrarian Change* 16 (4): 543–570. <https://doi.org/10.1111/joac.12113>.
- Kröger, Markus. 2019. "The Global Land Rush and the Arctic." In *The Global Arctic Handbook*, edited by Matthias Finger, and Lassi Heininen, 27–43. New York, NY: Springer International Publishing.
- Kröger, Markus. 2020. *Iron Will: Global Extractivism and Mining Resistance in Brazil and India*. Ann Arbor, MI: University of Michigan Press.
- Kröger, Markus. 2021. *Extractivisms, Existences and Extinctions: Monoculture Plantations and Amazon Deforestation*. London, UK: Routledge.
- Kröger, Markus, and Maria Ehrnström-Fuentes. 2021. "Forestry Extractivism: Uruguay." In *Agrarian Extractivism in Latin America*, edited by Ben McKay, Alberto Alonso-Fradejas, and Arturo Ezquerro-Cañete, 186–207. London, UK: Routledge.
- Kröger, M., S. E. Hagolani-Albov, and B. Gills. 2021. "Extractivisms." In *Situating Sustainability: A Handbook of Contexts and Concepts*, edited by Parker Krieg, and Reetta Toivanen, 239–252. Helsinki University Press. <https://doi.org/10.33134/HUP-14-17>.
- Kröger, Markus, and Anja Nygren. 2020. "Shifting Frontier Dynamics in Latin America." *Journal of Agrarian Change* 20 (3): 364–386. <https://doi.org/10.1111/joac.12354>.
- Kuokkanen, Rauna. 2019. "At the Intersection of Arctic Indigenous Governance and Extractive Industries: A Survey of Three Cases." *The Extractive Industries and Society* 6 (1): 15–21. <https://doi.org/10.1016/j.exis.2018.08.011>.
- Laing, Anna F. 2020. "Re-Producing Territory: Between Resource Nationalism and Indigenous Self-Determination in Bolivia." *Geoforum; Journal of Physical, Human, and Regional Geosciences* 108 (1): 28–38. <https://doi.org/10.1016/j.geoforum.2019.11.015>.
- Lassila, Maija. 2021. "The Arctic Mineral Resource Rush and the Ontological Struggle for the Viiankiaapa Peatland in Sodankylä, Finland." *Globalizations* 18 (4): 635–649. <https://doi.org/10.1080/14747731.2020.1831818>.
- Laterra, Patricia, María Julia Eliosoff, and Agostina Costantino. 2021. "Austerity Programs in Argentina and the Structural Continuity of Extractivism: A Feminist Perspective." *Agrarian South: Journal of Political Economy: A Triannual Journal of Agrarian South Network and CARES* 10 (1): 110–138. <https://doi.org/10.1177/22779760211002643>.
- Leifsen, Ebsen. 2020. "The Socionature That neo-Extractivism can see: Practicing Redistribution and Compensation Around Large-Scale Mining in the Southern Ecuadorian Amazon." *Political Geography* 82: 102249. <https://doi.org/10.1016/j.polgeo.2020.102249>.
- Levien, Michael, Michael Watts, and Yan Hairong. 2018. "Agrarian Marxism." *Journal of Peasant Studies* 45 (5–6): 853–883. <https://doi.org/10.1080/03066150.2018.1534101>.
- Li, Taina Murray. 2010. "To Make Live or Let Die? Rural Dispossession and the Protection of Surplus Populations." *Antipode* 41: 66–93. <https://doi.org/10.1111/j.1467-8330.2009.00717.x>.
- Loperena, Christopher A. 2017. "Honduras is Open for Business: Extractivist Tourism as Sustainable Development in the Wake of Disaster?" *Journal of Sustainable Tourism* 25 (5): 618–633. <https://doi.org/10.1080/09669582.2016.1231808>.
- Macdonald, Catherine. 2018. "The Role of Gender in Extractive Industries." In *Extractive Industries: The Management of Resources as A Driver of Sustainable Development*, edited by Tony Addison, and Alan Roe, 442–459. Oxford, UK: Oxford University Press.
- Machado Araújo, Horacio. 2013. "Crisis ecológica, conflictos socioambientales y orden neocolonial: Las paradojas de Nuestra América en las fronteras del extractivismo." *REBELA – Revista Brasileira de Estudos Latino-Americanos* 3 (1): 118–155. <https://rebela.emnuvens.com.br/pc/article/view/137>.
- Machado Araújo, Horacio. 2015. "Ecología política de los regímenes extractivistas. De reconfiguraciones imperiales y re-existencias decoloniales en nuestra América." *Bajo el Volcán* 15 (23): 11–51.
- Machlis, Gary E., Jo Ellen Force, and William R. Burch. 1997. "The Human Ecosystem Part I: The Human Ecosystem as an Organizing Concept in Ecosystem Management." *Society and Natural Resources* 10 (4): 347–367. <https://doi.org/10.1080/08941929709381034>.

- Madianou, Mirca. 2019. "Technocolonialism: Digital Innovation and Data Practices in the Humanitarian Response to Refugee Crises." *Social Media + Society* 5 (3): 1–13. <https://doi.org/10.1177/2056305119863146>.
- Mann, Michael. 1984. "The Autonomous Power of the State: Its Origins, Mechanisms and Results." *European Journal of Sociology* 25 (2): 185–213. <https://doi.org/10.1017/S0003975600004239>.
- Marston, Andrea, and Amy Kennemore. 2019. "Extraction, Revolution, Plurinationalism: Rethinking Extractivism from Bolivia." *Latin American Perspectives* 46 (2): 141–160. <https://doi.org/10.1177/0094582X18781347>.
- Martinez-Alier, Joan. 2011. "The EROI of Agriculture and its use by the Via Campesina." *Journal of Peasant Studies* 38 (1): 145–160. <https://doi.org/10.1080/03066150.2010.538582>.
- Martín, Facundo. 2017. "Reimagining Extractivism: Insights from Spatial Theory." In *Contested Extractivism, Society and the State: Struggles Over Mining and Land*, edited by Bettina Engels, and Kristina Dietz, 21–44. Development, Justice and Citizenship. London, UK: Palgrave Macmillan. https://doi.org/10.1057/978-1-137-58811-1_2.
- Marx, Karl. [1867] 1976. *Capital: A Critique of Political Economy. Volume I. Book One: The Process of Production of Capital*. Translated by Ben Fowkes. London, UK: Penguin.
- McCarthy, James. 2019. "Authoritarianism, Populism, and the Environment: Comparative Experiences, Insights, and Perspectives." *Annals of the American Association of Geographers* 109 (2): 301–313. <https://doi.org/10.1080/24694452.2018.1554393>.
- McKay, Ben M. 2017. "Agrarian Extractivism in Bolivia." *World Development* 97: 199–211. <https://doi.org/10.1016/j.worlddev.2017.04.007>.
- McKay, Ben M., Alberto Alonso-Fradejas, and Arturo Ezquerro-Cañete, eds. 2021. *Agrarian Extractivism in Latin America*. New York, NY: Routledge.
- McKay, Ben M., Gustavo de L.T. Oliveira, and Juan Liu. 2020. "Authoritarianism, Populism, Nationalism and Resistance in the Agrarian South." *Canadian Journal of Development Studies / Revue Canadienne D'études du Développement* 41 (3): 347–362.
- McKay, Ben M., and Henry Veltmeyer. 2021. "Industrial Agriculture and Agrarian Extractivism." In *Handbook of Critical Agrarian Studies*, edited by A. H. Akram-Lodhi, Kristina Dietz, Bettina Engels, and Ben M. McKay, 503–514. Cheltenham, UK: Edward Elgar Publishing. <https://doi.org/10.4337/9781788972468.00065>.
- McMichael, Phillip. 2013. "Value-chain Agriculture and Debt Relations: Contradictory Outcomes." *Third World Quarterly* 34 (4): 671–690.
- Merino, Roger. 2020. "The Cynical State: Forging Extractivism, Neoliberalism and Development in Governmental Spaces." *Third World Quarterly* 41 (1): 58–76. <https://doi.org/10.1080/01436597.2019.1668264>.
- Mezzadra, Sandro, and Brett Neilson. 2017. "On the Multiple Frontiers of Extraction: Excavating Contemporary Capitalism." *Cultural Studies* 31 (2–3): 185–204. <https://doi.org/10.1080/09502386.2017.1303425>.
- Mintz, Sydney. 1986. *Sweetness and Power: The Place of Sugar in Modern History*. New York, NY: Viking, Penguin Books.
- Monjane, Boaventura, and Natacha Bruna. 2019. "Confronting Agrarian Authoritarianism: Dynamics of Resistance to PROSAVANA in Mozambique." *Journal of Peasant Studies* 47 (1): 69–94. <https://doi.org/10.1080/03066150.2019.1671357>.
- Moore, Jason W. 2000. "Sugar and the Expansion of the Early Modern World-Economy: Common Frontiers, Ecological Transformation, and Industrialization." *Review (Fernand Braudel Center)* 23 (3): 409–433. <https://www.jstor.org/stable/40241510>.
- Moore, Jason W. 2015. *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. London, UK: Verso.
- Moore, Jason W. 2016. "Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism." *Sociology Faculty Scholarship*. Binghamton University, 1. https://orb.binghamton.edu/sociology_fac/1.
- Moore, Samuel A. 2020. "Individuation Through Infrastructure: Get Full Text Research, Data Extraction and the Academic Publishing Oligopoly." *Journal of Documentation* 77 (1): 129–141. <https://doi.org/10.1108/jd-06-2020-0090>.

- Moreno, Camila. 2015. *O Brasil made in China. Para pensar as reconfigurações do capitalismo contemporâneo*. São Paulo, Brazil: Fundação Rosa Luxemburgo.
- Morozov, Evgeny. 2017. "Digital Intermediation of Everything: At the Intersection of Politics, Technology and Finance." Paper presented at 4th Council of Europe Platform Exchange on Culture and Digitisation, Karlsruhe, Germany, October 19–20.
- Nilsen, Alf Gunvald, and Karl von Holdt. 2019. "Rising Powers, People Rising: neo-Liberalization and its Discontents in the BRICS Countries." *Globalizations* 16 (2): 121–136. <https://doi.org/10.1080/14747731.2018.1479018>.
- Nirmal, Padini. 2020. "Nature and Gender." In *International Encyclopedia of Human Geography*, 2nd ed., edited by Audrey Kobayashi, 285–293. <https://doi.org/10.1016/B978-0-08-102295-5.10232-X>'.
- Nogueira, Isabel, Ossi I. Ollinaho, Eduardo Costa Pinto, Grasiela Barucu, Alexis Saludjian, José Paulo Guedes Pinto, Paulo Balanco, and Carlos Schonerwald. 2017. "Mozambican Economic Porosity and the Role of Brazilian Capital: A Political Economy Analysis." *Review of African Political Economy* 44 (151): 104–121. <https://doi.org/10.1080/03056244.2017.1295367>.
- Nosthoff, Anna-Verena, and Felix Maschewski. 2020. "Big Data and The Platform Economy: on Infrastructural Power." Paper presented at the UN Expert Group Meeting on Population, Food Security, Nutrition and Sustainable Development. New York, NY, October 28–30.
- Nygren, Anja, Markus Kröger, and Barry K. Gills. 2022. "Global Extractivisms and Transformative Alternatives." *Journal of Peasant Studies* 49 (4).
- Ocaklı, Beril, Tobias Krueger, Marco A. Janssen, and Ulan Kasymov. 2021. "Taking the Discourse Seriously: Rational Self-Interest and Resistance to Mining in Kyrgyzstan." *Ecological Economics* 189: 107177. <https://doi.org/10.1016/j.ecolecon.2021.107177>.
- Oliveira, Gustavo de L. T. 2018. "Chinese Land Grabs in Brazil? Sinophobia and Foreign Investments in Brazilian Soybean Agribusiness." *Globalizations* 15 (1): 114–133. <https://doi.org/10.1080/14747731.2017.1377374>.
- Ollinaho, Ossi I. 2016. "Environmental Destruction as (Objectively) Uneventful and (Subjectively) Irrelevant." *Environmental Sociology* 2 (1): 53–63. <https://doi.org/10.1080/23251042.2015.1114207>.
- Ollinaho, Ossi I. 2018. "Virtualization of the Life-World." *Human Studies* 41 (2): 193–209. <https://doi.org/10.1007/s10746-017-9455-3>.
- Ollinaho, Ossi I., and V. P. J. Arponen. 2020. "Incomegetting and Environmental Degradation." *Sustainability* 12 (10): 4007. <https://doi.org/10.3390/su12104007>.
- Ollinaho, Ossi I., and Markus Kröger. 2021. "Agroforestry Transitions: the Good, the bad and the Ugly." *Journal of Rural Studies* 82: 210–221. <https://doi.org/10.1016/j.jrurstud.2021.01.016>.
- Parenti, Christian. 2015. "The Environment Making State: Territory, Nature, and Value." *Antipode* 47 (4): 829–848. <https://doi.org/10.1111/anti.12134>.
- Patel, Raj, and Jason W. Moore. 2017. *A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature, and the Future of the Planet*. Berkeley: University of California Press.
- Patnaik, Utsa. 2017. "Revisiting the 'Drain', or Transfers from India to Britain in the Context of Global Diffusion of Capitalism." In *Agrarian and Other Histories: Essays for Binay Bhushan Chaudhuri*, edited by S. Chakrabarti, and U. Patnaik, 277–319. New Delhi, India: Tulika Books.
- Petras, James, and Henry Veltmeyer. 2014. *Extractive Imperialism in the Americas: Capitalism's New Frontier*. Leiden, NL: Brill. https://doi.org/10.1163/9789004268869_001.
- Petras, James F., and Henry Veltmeyer. 2017. "Accumulation by dispossession – and the resistance." In *The Class Struggle in Latin America: Making History Today*, edited by James F. Petras, and Henry Veltmeyer, 40–58. Oxon, UK: Routledge.
- Piketty, Thomas. 2014. "Capital in the Twenty-First Century: A Multidimensional Approach to the History of Capital and Social Classes." *The British Journal of Sociology* 65 (4): 736–747. <https://doi.org/10.1111/1468-4446.12115>.
- Plumwood, Val. 1993. "The Politics of Reason: Towards a Feminist Logic." *Australasian Journal of Philosophy* 71 (4): 436–462. <https://doi.org/10.1080/00048409312345432>.
- Polanyi Levitt, Kari. 2022. "Unravelling the Canvas of History." In *The Essential Guide to Critical Development Studies*, edited by Henry Veltmeyer, and Paul Bowles, 13–20. Second Edition, Routledge Critical Development Studies. Abingdon Oxon, New York, NY: Routledge. <https://doi.org/10.4324/9781003037187-4>.

- Potts, Shaina. 2020. "Law as Geopolitics: Judicial Territory, Transnational Economic Governance, and American Power." *Annals of the American Association of Geographers* 110 (4): 1192–1207. <https://doi.org/10.1080/24694452.2019.1670041>.
- Poulantzas, Nicos. 1978. *State, Power, Socialism*. London, United Kingdom: Verso.
- Preston, Jen. 2017. "Racial Extractivism and White Settler Colonialism: An Examination of the Canadian Tar Sands Mega-Projects." *Cultural Studies* 31 (2–3): 353–375. <https://doi.org/10.1080/09502386.2017.1303432>.
- Purcell, Thomas F. 2021. "Contesting Total Extractivism: Between Idealism and Materialism." *Journal of Agrarian Change* 12458. <https://doi.org/10.1111/joac.12458>.
- Radhuber, Isabella M. 2015. "Extractive Processes, Global Production Networks and Inequalities." *Refubium - Freie Universität Berlin Repository* 89. <https://doi.org/10.17169/refubium-23333>.
- Raftopoulos, Malayna. 2017. "Contemporary Debates on Social-Environmental Conflicts, Extractivism and Human Rights in Latin America." *The International Journal of Human Rights* 21 (4): 387–404. doi:10.1080/13642987.2017.1301035.
- Rasmussen, Mattias Borg, and Christian Lund. 2018. "Reconfiguring Frontier Spaces: The Territorialization of Resource Control." *World Development* 101: 388–399. <https://doi.org/10.1016/j.worlddev.2017.01.018>.
- Ricaurte, Paola. 2019. "Data Epistemologies, The Coloniality of Power, and Resistance." *Television & New Media* 20 (4): 350–365. <https://doi.org/10.1177/1527476419831640>.
- Robles, Wilder, and Henry Veltmeyer. 2015. *The Politics of Agrarian Reform in Brazil: the Landless Rural Workers Movement*. New York, NY: Palgrave Macmillan.
- Röpke, Inge. 2021. "From Value to Valuation and Appropriation. A Comment on Pirgmaier's Paper 'The Value of Value Theory for Ecological Economics'." *Ecological Economics* 187: 107102. <https://doi.org/10.1016/j.ecolecon.2021.107102>.
- Rosales, Antulio. 2016. "Deepening Extractivism and Rentierism: China's Role in Venezuela's Bolivarian Developmental Model." *Canadian Journal of Development Studies / Revue Canadienne D'études du Développement* 37 (4): 560–577. <https://doi.org/10.1080/02255189.2016.1208605>.
- Rosales, Antulio. 2019. "Radical Rentierism: Gold Mining, Cryptocurrency and Commodity Collateralization in Venezuela." *Review of International Political Economy* 26 (6): 1311–1332. <https://doi.org/10.1080/09692290.2019.1625422>.
- Sadowski, Jathan. 2019. "When Data is Capital: Datafication, Accumulation, and Extraction." *Journal of Big Data* 6 (1): 1–12. <https://doi.org/10.1177/2053951718820549>.
- Sadowski, Jathan. 2020. "The Internet of Landlords: Digital Platforms and New Mechanisms of Rentier Capitalism." *Antipode* 52: 562–580. <https://doi.org/10.1111/anti.12595>.
- Sankey, Kyla. 2020. "The Political Economy of Mining in Colombia: The New Face of Globalization?" In *Latin American Extractivism: Dependency, Resource Nationalism, and Resistance in Broad Perspective*, edited by Steve Ellner, 33–54. Lanham: Rowman & Littlefield.
- Santos, Boaventura de Sousa, ed. 2008. *Another Knowledge Is Possible: Beyond Northern Epistemologies. Reinventing Social Emancipation toward New Manifestos 3*. London, UK: Verso.
- Scoones, Ian, Marc Edelman, Saturnino M. Borrás Jr., Ruth Hall, Wendy Wolford, and Ben White. 2018. "Emancipatory Rural Politics: Confronting Authoritarian Populism." *Journal of Peasant Studies* 45 (1): 1–20. <https://doi.org/10.1080/03066150.2017.1339693>.
- Scott, James C. 2017. *Against the Grain: A Deep History of the Earliest States*. New Haven, CT: Yale University Press. <https://doi.org/10.12987/9780300231687>.
- Shattuck, Annie. 2021. "Generic, Growing, Green?: The Changing Political Economy of the Global Pesticide Complex." *Journal of Peasant Studies* 48 (2): 231–253. <https://doi.org/10.1080/03066150.2020.1839053>.
- Smart, Sebastian. 2020. "The Political Economy of Latin American Conflicts Over Mining Extractivism." *The Extractive Industries and Society* 7 (2): 767–779. <https://doi.org/10.1016/j.exis.2020.02.004>.
- Stammler, Florian, and Aitalina Ivanova. 2016. "Confrontation, Coexistence or Co-Ignorance? Negotiating Human-Resource Relations in Two Russian Regions." *The Extractive Industries and Society* 3 (1): 60–72. <https://doi.org/10.1016/j.exis.2015.12.003>.

- Stensrud, Astrid B. 2016. "Climate Change, Water Practices and Relational Worlds in the Andes." *Ethnos* 81 (1): 75–98. <https://doi.org/10.1080/00141844.2014.929597>.
- Stensrud, Astrid B. 2019. "Water as Resource and Being: Water Extractivism and Life Projects in Peru." In *Indigenous Life Projects and Extractivism: Ethnographies from South America*, edited by Cecilie Vindal Ødegaard, and Juan Javier Rivera Andía, 143–164. Cham, CH: Palgrave Macmillan. https://doi.org/10.1007/978-3-319-93435-8_6.
- Strambo, Claudia, and Ana Carolina González Espinosa. 2020. "Extraction and Development: Fossil Fuel Production Narratives and Counternarratives in Colombia." *Climate Policy* 20 (8): 931–948. <https://doi.org/10.1080/14693062.2020.1719810>.
- Svampa, Maristella. 2015. "Commodities Consensus: Neoextractivism and Enclosure of the Commons in Latin America." *South Atlantic Quarterly* 114 (1): 65–82. <https://doi.org/10.1215/00382876-2831290>.
- Svampa, Maristella. 2019. *Neo-Extractivism in Latin America Socio- Environmental Conflicts, the Territorial Turn, and New Political Narratives*. 1st ed. Cambridge, UK: Cambridge University Press.
- Szeman, Imre. 2017. "On the Politics of Extraction." *Cultural Studies* 31 (2-3): 440–447. <https://doi.org/10.1080/09502386.2017.1303436>.
- Teràn Mantovani, Emiliano. 2016. "Las Nuevas Fronteras de Las Commodities En Venezuela: Extractivismo, Crisis Histórica y Disputas Territoriales." *Ciencia Política* 11 (21): 251–285. <https://doi.org/10.15446/cp.v11n21.60296>.
- Tetreault, Darcy. 2020. "The New Extractivism in Mexico: Rent Redistribution and Resistance to Mining and Petroleum Activities." *World Development* 126: 104714. <https://doi.org/10.1016/j.worlddev.2019.104714>.
- Tetreault, Darcy, Cindy McCulligh, and Carlos Lucio. 2021. "Distilling Agro-Extractivism: Agave and Tequila Production in Mexico." *Journal of Agrarian Change* 21 (2): 219–241. <https://doi.org/10.1111/joac.12402>.
- Thorat, Dhanashree. 2020. "Modalities of Data Colonialism and South Asian Hashtag Publics." *Feminist Media Studies* 21 (1): 151–153. <https://doi.org/10.1080/14680777.2021.1864874>.
- Tilzey, Mark. 2019. "Authoritarian Populism and neo-Extractivism in Bolivia and Ecuador: the Unresolved Agrarian Question and the Prospects for Food Sovereignty as Counter-Hegemony." *Critical Agrarian Studies* 46 (3): 262–652. <https://doi.org/10.1080/03066150.2019.1584191>.
- Toivanen, Tero, and Markus Kröger. 2019. "The Role of Debt, Death and Dispossession in World-Ecological Transformations: Swidden Commons and tar Capitalism in Nineteenth-Century Finland." *Journal of Peasant Studies* 46 (7): 1368–1388. <https://doi.org/10.1080/03066150.2018.1503173>.
- Tola, Miriam. 2018. "Between Pachamama and Mother Earth: Gender, Political Ontology and the Rights of Nature in Contemporary Bolivia." *Feminist Review* 118 (1): 25–40. <https://doi.org/10.1057/s41305-018-0100-4>.
- Torraco, Richard J. 2005. "Writing Integrative Literature Reviews: Guidelines and Examples." *Human Resource Development Review* 4 (3): 356–367. <https://doi.org/10.1177/1534484305278283>.
- Tsing, Anna Lowenhaupt. 2003. "Natural Resources and Capitalist Frontiers." *Economic and Political Weekly* 38 (48): 5100–5106. <https://www.jstor.org/stable/4414348>.
- Turner, Lowell. 1994. "Social Partnership: An Organizing Concept for Industrial Relations Reform." *Workplace Topics* 4 (1): 83–97. <https://hdl.handle.net/1813/76107>.
- Uhl, Christopher, Dominik Kulakowski, Jeffery Gerwing, Michelle Brown, and Mark Cochrane. 1996. "Sustainability: A Touchstone Concept for University Operations, Education, and Research." *Conservation Biology* 10 (5): 1308–1311.
- Ulloa, Astrid. 2020. "The Rights of the Wayúu People and Water in the Context of Mining in La Guajira, Colombia: Demands of Relational Water Justice." *Human Geography* 13 (1): 6–15. <https://doi.org/10.1177/1942778620910894>.
- Velásquez, Teresa A. 2018. "Tracing the Political Life of Kimsacocha: Conflicts Over Water and Mining in Ecuador's Southern Andes." *Latin American Perspectives* 45 (5): 154–169. <https://doi.org/10.1177/0094582X17726088>.
- Veltmeyer, Henry. 2020. "Latin America in the Vortex of Social Change: Development and Social Movement Dynamics." *World Development* 130: 104916. <https://doi.org/10.1016/j.worlddev.2020.104916>.

- Veltmeyer, Henry, and Edgar Záyago Lau, eds. 2020. *Buen Vivir and the Challenges to Capitalism in Latin America*. New York: Routledge.
- Verbrugge, Boris, and Sara Geenen. 2019. "The Gold Commodity Frontier: A Fresh Perspective on Change and Diversity in the Global Gold Mining Economy." *The Extractive Industries and Society* 6: 413–423. <https://doi.org/10.1016/j.exis.2018.10.014>.
- Vindal Ødegaard, Cecilie, and Juan Javier Rivera Andía. 2019. "Introduction: Indigenous Peoples, Extractivism, and Turbulences in South America." In *Indigenous Life Projects and Extractivism: Ethnographies From South America*, edited by Cecilie Vindal Ødegaard, and Juan Javier Rivera Andía, 1–50. Cham, CH: Palgrave Macmillan.
- Wallerstein, Immanuel. 1984. "The Development of the Concept of Development." *Sociological Theory* 2: 102–116. <https://doi.org/10.2307/223344>.
- Wallerstein, Immanuel. [1983] 2011. *Historical Capitalism with Capitalist Civilization*. London, UK: Verso.
- Weis, Tony. 2010. "The Accelerating Biophysical Contradictions of Industrial Capitalist Agriculture." *Journal of Agrarian Change* 10 (3): 315–341. <https://doi.org/10.1111/j.1471-0366.2010.00273.x>.
- Whittemore, Robin, and Kathleen Knafl. 2005. "The Integrative Review: Updated Methodology." *Journal of Advanced Nursing* 52 (5): 546–553. <https://doi.org/10.1111/j.1365-2648.2005.03621.x>.
- Willow, Anna J. 2018. *Understanding ExtrACTIVISM: Culture and Power in Natural Resource Disputes*. New York, NY: Routledge. <https://doi.org/10.4324/9780429467196>.
- Wilson, Emma, and Florian Stammler. 2016. "Beyond Extractivism and Alternative Cosmologies: Arctic Communities and Extractive Industries in Uncertain Times." *The Extractive Industries and Society* 3 (1): 1–8. <https://doi.org/10.1016/j.exis.2015.12.001>.
- Wolford, Wendy. 2021. "The Plantationocene: A Lusotropical Contribution to the Theory." *Annals of the American Association of Geographers* 111 (6): 1622–1639. <https://doi.org/10.1080/24694452.2020.1850231>.
- Ye, Jingzhong, Jan Douwe van der Ploeg, Sergio Schneider, and Teodor Shanin. 2019. "The Incursions of Extractivism: Moving from Dispersed Places to Global Capitalism." *Journal of Peasant Studies* 47 (1): 155–183. <https://doi.org/10.1080/03066150.2018.1559834>.
- Záyago Lau, Edgar. 2022. "The Triangle of Underdevelopment: Technology, Patents, and Monopoly." In *The Essential Guide to Critical Development Studies*, edited by Henry Veltmeyer, and Paul Bowles, 233–240. Second Edition, Routledge Critical Development Studies. Abingdon Oxon, New York, NY: Routledge. <https://doi.org/10.4324/9781003037187-35>.
- Zhang, Hongzhou. 2019. *Securing the "Rice Bowl": China and Global Food Security*. Singapore: Palgrave Macmillan.
- Zhen, Zheng. 2020. "From the 'Greening Motherland' Campaign to the 'Ant Forest' App: Tree-Planting in China's Environmental Politics." *World Rainforest Movement* 251, September 24. <https://www.wrm.org.uy/bulletin-articles/from-the-greening-motherland-campaign-to-the-ant-forest-app-tree-planting-in-chinas-environmental-politics>.
- Zimmer, Zac. 2017. "Bitcoin and Potosí Silver: Historical Perspectives on Cryptocurrency." *Technology and Culture* 58 (2): 307–334. <https://doi.org/10.1353/tech.2017.0038>.

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