

FILM AND EXTRACTION

Introduction to Media and Extraction: On the Extractive Film

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Accounts of how films have facilitated the transformation of our planet, its biota, minerals, and matter into resources for racial capitalism through cycles of conquest, enslavement, and the elemental separation of “human” from “nature” can feel like a profound indictment of film itself—a relentless and brutal disenchantment with cinema. And yet, as this stream on “The Extractive Film” shows, it is through the careful parsing of film’s technical apparatus, archives, institutions of sponsorship, creative affiliations, and formal registration or elision of such histories that we begin to see the scale and scandal of exploitation foundational to global modernity. When held as a witness and testimonial to the industrial reshaping of multiple worlds and communities, film becomes an unfaithful ally to the extractive industries that have deployed the medium.

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Sunlight falling on Congo sometime in 1952 remains etched on the photosensitive silver halides coating a celluloid film.

Sunlight falling on Congo sometime in 1952 remains etched on the photosensitive silver halides coating **the vegetal-animal-plastic substance of** a celluloid film.

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Sunlight falling on Congo sometime in 1952 **and filtered through cinematographic machines sponsored by an Italian public relations company for Fiat to film Africa** remains etched on the photosensitive silver halides coating the vegetal-animal-plastic substance of a celluloid film.

Sunlight falling on Congo sometime in 1952 and filtered through cinematographic machines sponsored by an Italian public relations company for Fiat to film Africa **in order to foster access to the continent's raw materials, labor, and markets** remains etched on the photosensitive silver halides coating the vegetal-animal-plastic substance of a celluloid film, **mummifying the necropolitical realities of extraction.**

Accounts of how films have facilitated the transformation of our planet, its biota, minerals, and matter into resources for racial capitalism through cycles of conquest, enslavement, and the elemental separation of “human” from “nature” can feel like a profound indictment of film itself—a relentless and brutal disenchantment with cinema. And yet, as this stream on “The Extractive Film” shows, it is through the careful parsing of film’s technical apparatus, archives, institutions of sponsorship, creative affiliations, and formal registration or elision of such histories that we begin to see the scale and scandal of exploitation foundational to global modernity. When held as a witness and testimonial to the industrial reshaping of multiple worlds and communities, film becomes an unfaithful ally to the extractive industries that have deployed the medium.

The iterative statements above refer to corporate Italian films analyzed by a contributor to our stream. As we learn from Simone Dotto, Alfa and Fiat, two leading Italian automobile companies, commissioned car journeys crisscrossing the African continent after World War II, on roads built under the fascist Italian state during the 1930s (Dotto, “Raiding Africa”). These postwar road trips were organized as part of a larger series of so-called *raid automobilistico* or “motor raid” films. In the mid-twentieth century, faced with anticolonial resistance and militant labor uprisings, Western nations redrew local and global spheres of influence as they adapted to an era of economic imperialism rather than territorial control. The Italian automotive companies were attempting to open new markets and spur domestic car production by sponsoring drives in “off-road” automobiles in what was then called the “Belgian” Congo. Essays in this stream show us that the land, labor, and resources of Congo, Libya, Somalia, and Algeria (Dotto), the gold and diamonds of South Africa (Sandon), the rubber of Indonesia (Siregar), the oil of Iran (Cook), and the industrialization of agriculture in the United States and the United Kingdom (Schultz-Figueroa; Long) took on a new significance for West European and North American public and private entities amid the changing geopolitical demands of the early twentieth century and the postwar years. Films commissioned, sponsored,

and funded by industries, corporations, and governments exemplified these shifting relations and were deeply embedded in the political-economic conflicts of their era.

Our stream is about films that abetted the work of national and global extractive institutions during a critical period in the development of cinema and geopolitics, stretching roughly from 1895 to 1955. The historical focus of this stream should not obscure the pressing contemporary relevance of the essays. Congo, for instance, remains central to current realities “of extraction and predation” (Mbembe 2019, 4) that stretch back to the terrors of enslavement commodifying African peoples into what Achille Mbembe starkly describes as the “living *ore* from which *metal* is extracted” (2017, 40), by forcing them to labor on the resource frontiers of American plantations where prior histories of extraction and racial-imperial capitalism entwined (Williams 1944; Rodney 1972–2018; Robinson 1983–2020).¹ The mining of rare-earth minerals in the Democratic Republic of the Congo for cobalt—integral to the twenty-first century’s digital revolution, which initially gathered pace under postwar research and development (R & D) efforts in computation funded by the US military—would eventually facilitate the extraction of information from the social lives of populations to generate political control and vast corporate profit (Kara 2023; Edwards 1996; Zuboff 2019; Grieveson 2022; Mejias and Couldry 2024). This stream describes the past that created current architectures of circulation, wherein matter is extracted by exploited workers from Africa and the Americas, assembled into devices in free trade zones in China, and circulated through infrastructural networks and global logistics. In 2024, it comes as a banal but shocking reality that we live in intimate accord with digital media-information-communication machines built on the foundation of US military R & D programs and the violence and extractions that facilitate them.

Unraveling the extractivism that underpins and shapes global media cultures today while combating its deep legacies unfolding in our quotidian realities calls for the collective work of many. This understanding led us to put out a call in 2020 for allies working in the broad area of “media and extraction.” With its imposed isolation, inchoate sense of time, emphasis on virtual conversations, and paradoxical encounters with unconscionable race, class, caste, sex, ageist, and ableist social divides amid the shared experience of human precarity, the summer of a zoonotic global pandemic was strangely well-suited for this reflection. Building on the work of scholars, artists, and activists across disciplines, we called for collaborators “curious about

¹ Emphasis in the original quote. Scholarship explicating the convergence of settler colonialism, imperialism, anti-Blackness, and capitalism is now voluminous. Put simply, it illustrates that racism is not extrinsic to capitalism and that the inequalities structural to capitalism are racialized. It has required new understandings of colonial mechanisms of extraction, expropriation, and histories of dispossession that reorient capitalism’s history. See Williams 1944; Rodney 1972–2018; Robinson 1983–2020; and for discussion Melamed 2015; Wolfe 2016; Kelley 2017. The slave trade expanded to the Congo in the later sixteenth century after the “resource depletion” of genocide in the Gulf of Guinea. See Moore 2015, 183.

the political histories of the *materiality* of media (of copper, camphor, silicon, lithium, oil, silver, coltan, tin, and so on); the *energy* sources that power media technologies; the extraction of *labour* necessary to produce this materiality; and the mining of *information* about people in the service of commercial and political interests bent on further degrading environments as property” (Jaikumar and Grieveson 2020). Researchers, authors, artists, activists, students, and institutional leaders responded generously to our call, and this issue is best considered as part of ongoing conversations among a larger community of scholars currently thinking about media’s entanglements with extraction and extractivism (including Alexander and Mukherjee 2023–2025; Gómez-Barris 2017; Jacobson 2020, 2024; Jacobson and Jaikumar 2024; Jaikumar and Grieveson 2022).

With this stream of *Media+Environment*, we initiate a forum for archivally based research that expands upon little-known histories of the role played by state- and corporate-sponsored films in fostering the extraction of matter, mineral, and biological resources transformed into property during a crucial period in the emergence and formalization of cinema. Essays in this stream are informed by recent scholarship on industrial nonfiction and nontheatrical films, but take a specific interest in films enmeshed in the legacies of environmental and human degradation related to extraction (Acland and Wasson 2011; Dahlquist and Vonderau 2021; Grieveson and MacCabe 2011; Grieveson 2018; Hediger and Vonderau 2009; Hediger, Hoof, and Zimmermann 2024; Jacobson 2024; Rice 2019). With a focus on the early to mid-twentieth century, contributors pay particular attention to films that expanded markets in petroleum, rubber, gold, agriculture, animal husbandry, and petroleum by-products to expose the subterranean yet foundational ways in which films shaped domestic industry and international geopolitics and were in turn shaped by them. The transformation of nature, labor, life, and energy into an extractable resource from colonized and settled lands, waters, and peoples unfolded across the globe in a planned as well as contingent manner, driven by decisions of empires, nation-states, and corporations pursuing growth—entities that often remained offscreen, hidden behind a scrim of public relations, or by the commodity fetishism endemic to capitalism. Consequently, a search for the frequently hidden archival traces of extraction is central to media historiographies that take global extractivisms to task.

Extraction has shaped national and planetary histories. Indeed, resource and labor extractions are leading catalysts in making local histories a planetary concern and planetary history a local/national matter. For this reason, the research of scholars contributing to our stream is multisited, spanning Italy, the United States, Iran, the United Kingdom, Indonesia, and the continent of Africa. Our contributors also draw upon a range of disciplinary approaches from environmental studies, animal studies, history, infrastructure, science and technology studies, documentary and nontheatrical film studies, and

colonial historiography to address cinema's entanglements with histories of extraction that shaped the first half of the twentieth century, and continue to impact our planet's interconnected present. Within the unifying themes of this stream are necessary variations produced by this diversity of scholarly affiliations. As coeditors, we similarly allowed our personal voices to take precedence in select sections of this collaboratively written introduction. In the next segment, "Four Technologies of Modernity and Five Matters of Media," Lee takes the lead to convey the *longue durée* of capitalist extractivism and sketch out the deeply entangled logics of extractive racial-imperial capitalism that highlight the essential role of media, communication, and information technology in modernity's extractive history and praxis. Following that, in "From a History to Historiographies of Media and Extraction," Priya accepts the charge to reflect on the challenges facing media scholars who investigate the variably experienced, if ultimately inseparable, planetary consequences of material, resource, and labor extraction.

Maintaining a sense of the distinctiveness of our voices within a collective mission was a necessary exercise in keeping alive differences in our intellectual approach, because as coauthors our internal conversations and debates created a provocative tension that felt essential to thinking through a fuller range of questions addressing media and extraction. As noted in our call for allies, one part of this dialectical project (close to Lee's research interests) is to account for media's material embeddedness in the overarching legacies of capitalist, industrial, and data extraction. The other part (proximate to Priya's concerns) is to interrogate forms and methods best suited to provide a historical account of media's extractivist roots, so that history serves as an impetus to fostering ways of thought, work, and being that actively counter the nihilistic realities of a ravaged planet and endangered lives.

Four Technologies of Modernity and Five Matters of Media

Up next for our collective exploration of the entwined histories of extraction and media is a map of deep histories that stretch backward across the "Capitalocene" and the structuring eras of racial and imperial capitalism, and forward through to the digital epoch of "surveillance capitalism" and "data colonialism" when extracting information is parsed into the commodity of prediction and influence (Foster and McChesney 2014; Grieveson 2022; Meijas and Couldry 2024; Zuboff 2019).² The particular place of media as material and ideological technologies of the Capitalocene provides a necessary context for our discussion of the "extractive film." For the purposes of orientation amid the deep history of the capitalist and extractive colonial nomos, it can be said that there are four core "technologies" that shape

² Discussed further, using "Capitalocene" rather than "Anthropocene" learns from recent work on the deep histories of capitalism that illustrate the ways capital, science, and empire appropriated nature and the unpaid work of women and racialized others in service to surplus value production. Useful guides include Moore 2015, 2016; Yusoff 2018, 2024; Vergès 2019.

the global remaking of environment into property, beginning in the long sixteenth century.³ Of these, the first is the **plantation**. Terror-forming land in the Americas with global labor enslaved and brutalized on the basis of the fabricated fictions of race and “the biopolitical category of nonbeing” were essential to the history of capitalism (Yusoff 2018, 13). This history begins with the mono-crops of sugar and cotton that were extracted amid the fashioning of new commodity-centered relations across the Black Atlantic (Mintz 1985; Moore 2015, 2017; Patel and Moore 2020; Yusoff 2024). Raiding Africa on one side of the Atlantic for the first time “by taking and consuming what could be called a biostock” that was “at once human and vegetal” and “forced to share the destiny of the object” required a new praxis of control and terror, to enable the transformation of an ecosystem into an “agrosystem” generating profit on the other side of the Black Atlantic (Mbembe 2019, 165, 166, 10, 165).⁴ The plantation became “the era’s decisive motor of capital accumulation and greatest commodity centered force for landscape transformation” (Moore 2015, 9). This was the inauguration of the “Plantationocene” as the first fashioning of a global capitalist world system converting peasant agriculture and the commons into “extractive and enclosed plantations, relying on slave labor and other forms of exploited, alienated, and usually spatially transported labor” (Haraway 2015, 162). Plantations reordered environments and human lives. They went hand in hand both with a new praxis of control and discipline and with the increasingly industrial means of processing materials that established machine-based factory systems (Berg and Hudson 2023; Federici 2004; Wolford 2021).

Related to these developments was the creation of new infrastructural networks and forms of energy to transport matter and people across the globe. The **steam engine** of the late eighteenth century stands as the second core technology of capitalism, transforming extracted coal into energy and motion, essential to the accelerated globalization of capital (Alliez and Lazzarato 2016; Malm 2016). At the outset, the steam engine was developed to drain water from coal mines, enabling the development of new practices mechanizing resource extraction and remaking society’s relation to nature (Bunker and Ciccantell 2005). The year 1840 marked the first time the British empire deployed steam-powered boats in a major war “opening up” the resource frontiers of Libya and Palestine and extending capitalist-imperial control over planetary life (Malm 2024). Coal-fueled steamships propelled

3 Scholars across both the Latin American modernity/coloniality paradigm and traditions of Black radicalism show that beginning the history of capitalism with slavery and the plantation decenters the history of Europe, the breakdown of feudalism, and histories of agricultural enclosures, repositioning them as part of an interconnected history of conquest, colonization, racialization, and accumulation by dispossession. Quijano’s expansive essay is a powerful explication of those logics and histories (Quijano 2000).

4 Racial thinking and racism generating the slaving genocides of the new world inaugurated the “necropolitical” order “as a form of organization for death” to enable endless accumulation (Mbembe 2019, 7). Quijano too writes: “In America, the idea of race was a way of granting legitimacy to the relations of domination imposed by the conquest ... race became the fundamental criterion for the distribution of the world population into ranks, places, and roles in the new society’s structure of power” (Quijano 2000, 534–35).

the accelerated global search for new resource frontiers, and it was through this projection of power and violence that Britain expanded its imperium to export the dependence on fossil fuels across the world (Malm 2016). Railways too enabled the “creation of the physical conditions of exchange” and “annihilation of space by time” that generated new “scales” of finance necessary to construct infrastructures that integrated “material and financial processes and relations across space,” enabling new rounds of settler and imperial plunder (Bunker and Ciccantell 2005, 6; Marx 1994, 516–39).

Oil then came to be integral to the transformation of matter into energy, particularly after the fashioning of the **internal combustion engine** in the late nineteenth century, as the third core technology of extractive capital that radically remade environments into circulatory infrastructures, shaping the geopolitics of empire across the twentieth and twenty-first centuries. British oil interests colluded with US and UK state interests to overthrow the Iranian regime in 1953 (see Malcolm Cook’s essay in this stream as one example of that grimly expansive and ongoing history). Oil oozes out across capitalist culture in all sorts of ways. It transforms into the plastics essential to commodity cultures of commercial media that expand across the American Century and now pollute environments in the Black Atlantic and other sea spaces of globalization (Liboiron 2022). Roughly \$800 billion a year is spent by the US military, the single most polluting institution in the world, to police the world system and specifically to control the extraction and circulation of primeval matter from the deep past transfigured into energy and commodities in the present (P. Anderson 2013).

The fourth core technology of capital, innovated by that US military in 1945 and linked to the fashioning of the US imperium across the American Century, is the **digital computer** and its related machine learning systems that were used first for military and counterinsurgent purposes before they reshaped the praxis of capital accumulation and indeed everyday life (Dobson 2023; Edwards 1996; Grieveson, forthcoming; Levine 2018). The digital era relies on the extraction of rare earth minerals, energy, and global logistics networks and supply chains from the Americas and Africa through Asia that limn the current contingent configuration of extractive capitalism, forging a continuum from conquest and slavery through empire and globalization.

If this sketch can stand as a rough outline of the deep time of extraction and capital built into the metal of transformative machines, let us now turn specifically to the matter of media and the machines fashioned to generate value from information, entertainment, spectacle, and affect. The following idiosyncratic sketch enfolds media history back into the deep logics of racial-imperial capitalism from which media emerged, and from which it was set to work, reordering reality and sustaining the empire of capital. This story can start with **wood**. Itself one of the three core materials of early capitalism, preceding coal and oil, essential to the building of ships that navigated the

Black Atlantic, reliant on deforestation and the mingling of materials from across the globe, wood pulp also formed the paper fed into printing presses after 1440 at about the same time that forests in Brazil were being cut down to form the enclosures of the first sugar plantations (Bunker and Ciccantell 2005, 10).⁵ The printing press was an epochal reordering of the production, mechanization, and accelerated circulation of knowledge that had extraordinary repercussions for a capitalist world forming around the exchange and circulation of matter and information (B. Anderson 1983; Habermas 1962–1989; Innis 1950). It is the root of the mass media form we still call “the press,” approximately 600 years after the invention of the pressing of moveable type onto paper in Germany and 250 years after its combination with steam power to accelerate the mass production of information. Two examples from those expansive histories: in the 1490s, Christopher Columbus’s letters about the exploration of the Caribbean were fixed in printed form and circulated widely across Europe at the outset of the insertion of European power into the Americas (Kovarik 2018, 36).⁶ Circa 200 years later, in 1686, the insurance company Lloyd’s of London created one of the longest lasting newspapers, to gather information about current events related to the company’s interests in generating profit from insuring the wooden ships involved in the triangular trade of slavery that was at the root of racial capitalism (Marks 2016, 115–17). Put concisely, reaped from deforestation to first create agricultural enclosures as well as ancillary products such as paper (so quickly, in fact, that these practices are now widely thought to have contributed to the mini-ice age of the seventeenth century), the materiality of wood was integral to the first iteration of mass media as the information nexus entwined with the globalization of capital. Histories of matter, media, and capital braid together across the era of racial-imperial capitalism.

The second material enabling the global flow of information and media was **copper**, which enabled the building of telecommunication networks beginning with the telegraph in the 1830s and the laying of submarine cables to radically speed up the global circulation of information essential to capital’s accelerated globalization. The first trans-Black-Atlantic cable was laid in 1858 and became fully operational by 1868, in advance of the British-controlled telegraph line to colonial India in the 1870s (Starosielski 2015). Communication networks circulating information and media used the conductive properties of copper smelted from ore extracted from mines, and encased in insulating materials sourced principally from Southeast Asian

5 Moore suggests that the three great hegemonic eras of capital from the Dutch to the British to the US can be correlated with the materials of wood, coal, and oil (Moore 2015, 156).

6 Or another example germane to the focus on extraction in this stream is the “father of mineralogy” Georgius Agricola’s 1556 printed book *De Re Metallica*, which explored geology, mining, and metallurgy and “remained the authoritative source on mining for the next 180 years” (Crawford 2021, 26; Kovarik 2018, 44–45.)

plantations that became integral to empire and globalization (Tully 2009).⁷ Chalk this up as another example of the braiding of matter, media, information, and capital integral to the history of capitalism. This entanglement has other dizzying knock-on effects on the history of geopolitics and empire. For instance, imperial Britain's hegemonic state control over submarine telecommunications led the United States to experiment with radio waves during World War I, to find alternative communication channels by inventing a media form that came to be called radio (Douglas 1987; Headrick 1991). Radio was quickly shaped by state policy into a commercial media practice financed by advertising to generate consumption, setting the terrain for subsequent media policy frameworks starting with television in the mid-century and including digital/social media in the early twenty-first centuries (Grieverson 2018, 207–13; McChesney 1993). In short, the circulation of information through wired networks built from extracted matter and sustained by geopolitical imperial rivalry became integral to globalizing the empires of media and capital.

Or take another example of the history of copper later in the American Century, amid the fashioning of a new configuration of economic imperialism. Chile's democratically elected socialist president Salvador Allende proposed to nationalize the Chilean holdings of large global corporations and subsoil resources in 1973, including the large copper deposits in the north of the country. Responding to this, the globe-spanning US telecommunications corporation International Telephone and Telegraph colluded with the US state and security forces to orchestrate a coup, overthrowing Allende and installing a fascist dictatorship congenial to the interests of the US state and its media corporations (Morozov, n.d.). This turn of history resembles that of Iran (from 1953), Guatemala, Indonesia, Iraq, Venezuela, and so many more (P. Anderson 2013). The year 1973—and the imposition of the shock-doctrine of economic deregulation—is often seen as the starting point of the neoliberal revolution securitizing capital (Klein 2007). It begins with fascist-imperial violence overthrowing democracy to secure resources in the Americas essential to the global flow of information-media.

Other experimentations with geological elements and chemicals sped up amid what Harry Braverman describes as “the transformation of science itself into capital” to generate the materials and technologies of media (Braverman 1974, 167; Parikka 2015, 1–28). One curious example is the history of camphor,

⁷ Gutta-percha formed the insulating material for submarine cable technology; this was secured mostly from British-controlled Malaysia. Jungles in Malaysia and Singapore were stripped to produce the huge quantities of gutta-percha needed to encase the cables to secure the global flow of information essential to capitalism, imperialism, and globalization. As Richard Maxwell and Toby Miller argue, “The prevailing myth is that the printing press, telegraph, phonograph, photograph, cinema, telephone, wireless radio, television, and the internet changed the world *without* changing the Earth. In reality, each technology has emerged by despoiling ecosystems and exposing workers to harmful environments, a truth obscured by both symbolic power and the power of moguls to set the terms by which such technologies are designed and deployed” (Maxwell and Miller 2012, 9).

derived from trees in China (and what is now Taiwan, or the Republic of China) to create a distillate that reacted with cellulose from cotton, together with nitric acid, to form one of the earliest plastics, commonly referred to as celluloid (Hill 2022; Von Stackelberg 2023). Cinema grew from this materiality. Kodak in the United States used Chilean nitrate to make nitric acid to nitrate the cotton farmed principally by Black sharecroppers, a chemical emulsion including silver derived mostly from Mexican ore, plus **gelatin** extracted from cattle to fix the photographic images on flexible plastics (Von Stackelberg 2023, 106–11). As Benjamín Schultz-Figueroa argues in this stream, the “existence of the cinematic image itself” was predicated “on the material rendering of animal bodies” (see “From Cattle to Beef Onscreen”). Of course, **silver** was long a matter of interest to the European colonizers from 1492 onward. It was integral to the early global system of capitalism moving matter from the new world to the old, before becoming part of the money supply circulating globally (Arboleda 2020; Moore 2017, 19–21; Quijano 2000, 37). The mining of silver, beginning amid settler-colonial genocide, spans the long arc of racial capitalism. In the mid-1920s, about the time that radio was becoming commercial media, film entrepreneur Adolph Zukor approached investment banks in Chicago and New York to borrow capital to create a vertically integrated and enclosed media corporation. One of the bank reports noted in passing that US film uses more silver than the US Mint (Grieverson 2018, 247–51). Indeed, up until the mid-1950s, the globe-spanning photographic film and celluloid corporation Kodak was the largest buyer of silver in the United States (Von Stackelberg 2023, 83). In short, the emergence and consolidation of the form of media that is “film,” of interest to the authors gathered together here, required myriad materialities from metals to trees and animal carcasses sourced amid the second-stage industrial revolution of chemicals and electricity, to generate profit for large corporate-financial entities that controlled film production, circulation, and exhibition. (See also Angus 2024; Bozak 2011; Dootson 2023; Duncan 2022; Lovejoy 2019; Parikka 2015; Past 2015; Vaughan 2019.)

Moving from the press, radio, and cinema, we arrive at the contemporary digital world and planet-wide “computational infrastructures” that surround us, through which much of life and its mediation is now led (Crawford 2021, 24). Roughly put, the digital revolution grows from the twinned imperatives to secure state interests and generate capital, effecting a revolution in governmentality and accumulation of an order akin to that of the printing press some five hundred years earlier. The digital-AI complex growing in the years after 1945 comes to subsume and reorder the production and circulation of information-media-communication. It speeds up after the invention of the **silicon** transistor in 1947, facilitating the production of ever-smaller computers cycling through desktop computers from 1970, laptops from 1981, and the smartphone from 2007 onward, as the last of these becomes the latest transformative machine meshing matter, technology,

information, communication, and media together with novel forms of biometric control and surveillance capitalism (Beiser 2018; Gertner 2012, 92–115; Miller 2022). This new order remains dependent on extractions from the “planetary mine” (Arboleda 2020) that underpins the affordances of the digital. Such operations require also the extraction of vast amounts of information from the collective commons of humanity, to be enclosed into black-box operating systems controlled by large tech-media-information corporations in a process that may be called “the propertization of culture and information” (Dahlin and Fredriksson 2017, 263). Parts of this machine learning are directed toward discerning patterns in information, often fostering the age-old function of media to generate consumption as yet another act of enclosure. Other parts are directed toward the governmental management of populations as a praxis of control, visible particularly in authoritarian and imperial states including China, Israel, and Russia.

Zigzagging from plantation to information economy, this is but one sketch of a historical arc that uses “extraction” as an optic to center urgent problems of ecological destruction, global heating, and “accumulation by dispossession” (Harvey 2004) across the long epoch of racial capitalism that re-situates media’s instrumentalization of matter, energy, labor, and information within that expansive manifold.

From a History to Historiographies of Media and Extraction

What has been presented so far is the long arc of media’s material histories in relation to the histories of resource extraction propelled by capitalism’s early modern incarnations in settler, colonial, and plantation economies. Our emphasis on the “Capitalocene” and “Plantationocene” over the “Anthropocene” to describe the extractive epoch follows the lead of scholars such as Jason Moore (2015, 2016), Christian Parenti (2016), Justin McBrien (2016) and Francoise Vergès (2019). Lauding the ways in which the notion of the Anthropocene has raised environmental awareness, Moore nevertheless expresses frustration that “the Anthropocene, at its core, is a fundamentally bourgeois concept ... the rich and powerful create problems for all of us, then tell us we’re all to blame” (Moore 2017, 6). Arguing against an undifferentiated sense of the Anthropocene as the geological period when human activity began to alter planetary destiny (with Europe’s industrial revolution of the 1600s and the “great acceleration” of the 1950s being signal events), Moore (2017), Haraway (2015), Yusoff (2018) and others attend to the corrosions, conceptual dualisms, and predatory interspecies dependencies introduced by the long tail of capitalist modernity from the 1400s onward, at the expense of Indigenous lives, people of color, depleted zones, and endangered species. The generic concept of the “Anthropocene” obscures the extent to which economic practices of capitalism and marketization, the political systems of slavery and colonialism, and the philosophical

underpinnings of Cartesian dualities bear the overwhelming brunt of responsibility for planetary endangerment that disproportionately devastates frontline communities.

In the “Anthropocene versus Capitalocene” debate, this special stream puts its finger on the scale in favor of the Capitalocene argument. Such an acknowledgment should give us pause to recognize that modernity’s relation to capitalist extractivism has been up for vigorous debate because there is always a politics to historical periodization and to attributions of causality. Herein lies a suppressed dialectic that emerges when we interrogate how we (or other scholars, scientists, artists, citizens, journalists, and activists) enter the fray of writing and thinking about modernity’s extractive foundations. So far, we have clarified that there is much to learn from narrating media’s entanglements with capitalism’s extractive histories. We now ask: What is in danger of falling out of sight when we reconstruct film and media histories primarily in relation to the history of extractive capitalism? What are some of the challenges? Why and how are media scholars or media historians qualified to narrate these histories?

An opening caution regarding media histories of extraction is that such narratives should not lead us to reinforce, yet again, Western Europe and the United States as primary historical actors of consequence. It is incumbent upon media historiographies of extraction to accept the challenge of contending with the realities of territories, environments, matter, bodies, communities, and species whose autonomy was stolen, overlooked, or minimized in making extraction the primary motor of a modernity hailed as technological advancement. Our work is not to change modernity’s theme song from paeans of enlightened progress to dirges of environmental decimation, leaving its lead actors undeposed. The argument for the specificity of the Capitalocene over the abstractions of the Anthropocene *reorganizes* the frame. It does so to create space for ways of being and knowing outside the entrenched dualisms of nature and culture, human and other than human, organisms and microorganisms—dualisms that can be attributed to the transformative ontologies and ecologies of racial capitalist extractivism rather than to all of humanity across the stretch of anthropic time. Despite best intentions, however, histories of media’s embedment in resource extraction risk becoming circumscribed by their single-minded focus on capitalist extractivism. Too easily, imperialist, capitalist, and corporate propertization begin to look (once again) like the only game in town, and our present depredations like the naturalized culmination of an inescapable onrush of capitalist industrialization.⁸ In fact, capitalist extractivism became the logic of power governing our present because it generated altered

⁸ Imre and Wenzel raise a different but related concern over the lack of “terminological precision” in discussions of extraction and extractivism (2021, 6).

lifeworlds. Extractive industries---for instance, mining for lithium in Chile, Argentina, and Bolivia, or digging for coal in the Carmichael mine in Queensland, Australia---succeed by promising and creating jobs affiliated to resource extraction. They create zones of neglect that engender new communities of care and protest; they elicit new modes of inventiveness, survival, adaptation, and resistance; they generate new aesthetics and sensibilities; they leave territories with infrastructures that elicit patterns of human habituation and attachments; they expand grids that provide power to everyone expecting 24/7 electricity (Bond 2022; Gómez-Barris 2017; Kale 2020; Larkin 2013, 2016; Riofrancos 2017; <https://www.adaniwatch.org>; Schwartz 2020; Tsing 2015).

To perceive media's entanglement with resource extraction, we have to identify the underlying extractive logics of media while being alive to the strange and insinuating plenitude created by extractive ecosystems, which is fundamental to their pervasiveness and resilience. The reification of an extractivist narrative is also mitigated when we examine the actual mechanics, contingencies, errors, aberrations—in short, the microhistories that have brought us to our “deranged” present in a multiplicity of ways (to rephrase Ghosh 2016). Our contributors show that despite the long Capitalocene, the theft of resources and the consequences of that theft have been anything but a singular act or cohesive experience. Although extractivism has been the overbearing rationale of power that continues to run roughshod over our planet's lifeworlds, there have been perpetual agonisms, antagonisms, and a multiplicity of players driven by different agendas and subject to changing oppressions in this story. For instance, tackling current fossil fuel investments in coal mining by new energy societies such as India and China, which have an urgent need to expand their domestic electric grids, calls for a different range of strategies and epistemes than decarbonizing advanced energy societies with low fossil fuel emissions in absolute terms, but persistently high per capita coal consumption, such as Germany and Australia.⁹ Researching media's role in the resource extractions that have entangled our diverse world into a singular hyperpolluting mass teetering on the brink of collapse alerts us to the fact that bird's-eye narratives of imperialism, colonialism, and globalization are, upon close examination, composed of a patchwork of fragmented, differential, and dispersed events and conditions around the world. One part of our work is to demonstrate how these pieces fit together by exposing the long arc capitalist extractivism. The other part is to refute the inevitability and universalizing logic of extractivism by staying alive to particularities.

⁹ See <https://worldpopulationreview.com/country-rankings/coal-consumption-by-country>, August 18, 2024.

With a focus on the intricacies of film form and variable contingencies of infrastructural policies, media scholars are adept at combining the particularity of circumstance with broader understandings of systemic structures. Training in film and media sensitizes us to variations in spatial and temporal scale; and maintaining this constant *duality* of vision is crucial to the task of critically engaging with the structural forces of extraction. Despite the unifying elements of extractive capitalism—such as accumulation through dispossession, privatization of profit, socialization of risk, destruction of the commons, legal insulation of corporations—individual encounters with extractivism’s devastations remain distinct. South African gold miners confronting British labor conditions in the 1950s (discussed by Emma Sandon in our stream) would have found recognizable solidarities with Indonesian rubber farmers indentured under Dutch and US policies during the same period (analyzed by Hirefa Siregar in the stream), had they known of each other’s existence. But their lives, realities, environments, and struggles were bound by their geography, their social class, their skin. As another of our contributors informs us, the corporate fortunes of the global Royal Dutch Shell corporation depended on normalizing chemicals that could be used in agriculture, which in turn hinged on publicity campaigns that utilized color photography to frame an abounding species of insects as “pests” (Long, “Photography versus the Pest”). The glossy photomicrography used by Shell to film small insects was simultaneously a propaganda tool aimed at teaching farmers about insect anatomy in order to chemically annihilate them and a marketing device that neatly sidestepped the health risks caused by Shell’s pesticides. In this instance, chemical and technological experimentations with color and visual techniques to perfect photographic images of an aphid or a moth were inextricably linked to the corporation’s bottom line. In turn, the corporation’s success depended on chemicals sold by invoking a terror of contamination and invasion, enhanced by insect microphotography. By refusing to flatten visual or aural details that do the affective work of persuading, entertaining, or moving (historical and contemporaneous) audiences, media histories of extractivism help us traverse back and forth between the minutiae of an experience, an image, or a trace element and its monumental significance in deep capitalist and geological time.

Extractive media histories can shine a diffracted light on the past by looking through the optic of media and extraction to macro- as well as microhistories, with a turn to particularity that sensitizes us to the autonomy and generative centrality of bodies, species, and matter otherwise rendered into objects of exploitation or subject to West-centric globalization and narrativization (Bennet 2010; Green 2020; Mani 2022; Shiva [2005] 2015; Tsing 2015). This, then, is a reason to hold on to microhistorical modes of apprehending film and media images, informed by ethnographic, formalist, ekphrastic, phenomenological, corporeal, and subatomic attention to detail, while also crucially grappling with media’s role in the long arc of capitalist extractivism. Capitalocene’s deep time is encountered, and potentially addressed, from

within the finitude of mortal and creaturely lifetimes. Understanding the granularity through which the large forces of racial capitalism, “market socialism,” and state totalitarianism take variably extractivist paths through history shows us the places where they intersect with the experiences of a populace, a flora, an animal, a person; where they falter or labor to succeed; and where they are potentially overturned. De-abstracting corporate or state machinery is essential to making room for the possibility of intervention, action, and hope.

Experiencing ecological disasters and gaining knowledge of their deep roots in racial extractivism can produce an overwhelming sense of grief and climate nihilism (Hamilton 2010; Lynas 2008; Wallace-Well 2019). Scholarly research, journal writing, and intellectual debates over the chronology of the Capitalocene or the Plantationocene appear arcane given the enormity of the planetary crisis. However, without conflating different registers of intervention in the climate and biodiversity crisis, it is important to remember that (largely student-led) fossil-fuel divestment movements have been a part of North American universities because these universities have historically invested in, and conducted research on behalf of, large oil and petroleum corporations (<https://divestmentdatabase.org>). What aids the extractors can also desist and dismantle that support. Cultural apparatuses such as universities have been central to the production of petroknowledge, providing moral and intellectual justification for extractive industries. The weight of bringing the work of such industries to light lies heavily with the universities, particularly when any of us have an opportunity to shape their institutional cultures.

Conducting research on media and extractivism also brings its own emotional load. Climate apocalypse and species decimation have been a reality for peoples and regions devastated for centuries by extractive regimes, so work of this kind emerging now from film and media departments feels shamefully late and hopelessly insignificant (Horne 2017; Mintz 1985; Williams 1944). Simultaneously, the labor of critique grows exponentially when a photographic or cinematic image unravels into confrontations with its broader capitalist, geological, and planetary implications through the vicious cycles of extractivism. Writing about the experience of a “humanist historian” encountering the “abyss of deep geological time,” Dipesh Chakrabarty likens it to a falling (2021, 15). He talks of his disorienting confrontation with the humanist historian’s “environmental blindness,” produced in his case by the subaltern critique that “all claims about the ‘oneness’ of the world had to be radically interrogated by testing them against the reality of all that actually divided humans and formed the basis of different regimes of oppression: colony, race, class, gender, sexuality, ideologies, interests, and so on” (2021, 17). The corrective is not to abandon a reckoning with persistent social difference, but to acknowledge the reality of multiple truths: that (a) the instrumentalization of our planet and the dehumanization of certain lives

have been part of the *same* project; (b) the planet's survival depends on urgent decarbonization and regeneration to counter capitalist extractivism; (c) alternatives to capitalism, constructions of different modes of living, and principles of degrowth must reckon with the populace that never received the benefits of industrial modernity, largely in the global South; and (d) any project of regeneration must be cognizant of the fact that lives and regions harmed by the carbon-fueled pursuit of Eurocentric modernization are once again at the highest risk of impoverishment, displacement, and decimation because of the extractions (of rare earth metals, lithium, cobalt, land, and labor) demanded by accelerating transitions to clean energy and load expansions for grids powering the digital-AI order. Consistently, each of these realities involves assumptions regarding time (who/what represents the future and who/what stands in for the past in any calculus?), space (where are the geographies of consumption located relative to sites of "resource" extraction, violence, and distribution?), and being (whose lives matter and who/what is dispensable?).¹⁰ To think of this another way, one could say that the study of extractive films leads us, in essence, to study the assumptions perpetually made and remade about any person, animal, plant, or insect's relative valuation in the ordering of space, time, matter, and being within a system. Our focus in this special issue is on films sponsored by the gold, rubber, agriculture, petroleum, and automobile industries over the last century, produced to justify the growth or mining of one commodity, the development of one chemical, or the production of one crop over a range of others, always driven by the logic of a corporation's use, need, and profit motive.

In an essay published in this journal a few years ago, Nicole Starosielski noted (citing Melody Jue's provocation) that by investigating "media's material and conditioning substrates," conventional ways of framing media and the environment were being dismantled by the emergence of elemental studies (Starosielski 2019; Jue 2020). Starosielski issued an invitation to new configurations of media studies, and this stream may be considered as one response. Our contributors analyze media's entanglement with the extractive industries by following the base materials and elemental substrates of industrialization to a range of linked political-economic systems that deployed film to create and sustain their enterprises. If a creative survivalism is necessary to live in and combat the "extractive zones" of our times, these essays show us that research into extractive industries necessitates its own kind of inventiveness (Gómez-Barris 2017). Extractive global industries and corporations often preserved their records, but their archives are largely populated with promotional and propaganda material or with transcripts of labor surveillance and crisis management. The essays, described next, use

¹⁰ This is the guiding framework, albeit within a different analytic context, for the spatial film historiography articulated in Jaikumar 2019.

an inventive hermeneutics to counter the extractivism of the archives. They pursue infrastructural traces including internal telegrams, road itineraries, manufacturing techniques, fragments of scripts, and surviving films to read for context while working against the grain of their political intent. Thus the films they analyze are both a context for, and testimonial against, the extractive worlds depicted onscreen.

The Essays

In the 1920s, South Africa's Transvaal Chamber of Mines began commissioning films from the African Film Trust (AFP) to promote gold and diamond mining from the land. In her essay for our stream, Emma Sandon explores this history in "Mining' the Film Archive." She carefully parses through the AFP's utilization of films leading up to the National Party's victory that would result in the founding of South Africa's apartheid regime. Reading across dispersed archives and nonextant films that leave few traces beyond shot lists and paper records, Sandon finds a wealth of evidence pointing to the conjoined efforts of a new film industry and a developing mining industry to aggressively push for the extraction of precious minerals, metals, and labor from South Africa. These films were meant to serve multiple ends: some were commissioned to recruit cheap local and migrant African labor, while others aimed to attract white settlers and financial investment to the land; they worked to popularize extractivism as a safe and profitable national economic policy; and they countered international criticisms of mining. Sandon lays bare the strategies behind films acculturating a diverse public to the brutalizing labor conditions and disparities between white versus Black and migrant African miners, in ways that display a visual apartheid setting the stage for racial extractivism in industry and government.

Around the time that the Transvaal Chamber of Mines contracted the production of films to foster mining in South Africa, the US rubber company Goodyear purchased land in what is now the North Sumatra province of Indonesia. At the time, it was called the "Dutch East Indies." In 1920, Goodyear made a film in collaboration with Hollywood's Universal studio titled *Conquering the Jungle* to document lands that the company was rapidly converting into a rubber plantation, for the supply of raw materials to America's expanding automotive industry. The film was remade and rereleased with a voice-over and soundtrack in 1939. In "Indonesia, Rubber, and Modern Techniques," Harifa Siregar explores the intriguing history behind both films through a close textual analysis to demonstrate continuities in the company's extractive agenda through changing times and shifting publicity pitches. If the first version of the film tells a familiar colonial story of unproductive "jungles" and swamps at the imperial periphery that needed to be "conquered," its remake in 1939 underscores the rhetoric of "development" marking the mutation of an empire's territorial control into the economics of neoliberalism gathering pace in the postwar years.

Goodyear continued to own land in North Sumatra after Indonesia became a sovereign state in 1949, selling the plantations to Bridgestone in 2005 in an ongoing collusion between Indonesia's national elite and a revolving door of transnational corporations degrading the land and its people under new forms of securitization. Siregar's history of imperial plantations in Southeast Asia peers through two films to uncover the historical realities of environmental degradation that still devastates Indonesia today.

Headquartered in the United States and Western Europe, corporations such as Goodyear, Fiat, and Alfa used film as linchpins in their strategy to reshape extractive industries, which were established on the strength of territorial colonialism during the late nineteenth and early twentieth centuries. In the case of Fiat and Alfa, the goal was to transform car manufacturing into profit-making industries in the emerging postwar market of so-called free trade. Colonialism provided the blueprint for global economic imperialism, and new financial techniques breathed life into the exploitative relations that had fueled past empires. Simone Dotto's article "Raiding Africa" offers a fascinating example of this by looking at the genre of what was referred to as the "motor raid" film. Dotto reconstructs the production histories of films sponsored by leading Italian automotive companies to record trans-African car crossings organized from Tripoli to Mogadishu and Algiers to Cape Town along road networks built during Mussolini's rule. By reanimating rhetoric and visual imagery from fascist imperialist propaganda to revive Italy's flagging overseas market in automobile trade during the 1950s, these films fulfilled Mussolini's interrupted fantasy of an Italian nation that would extend through African colonies, reimagined as a vast "empire of labor" (Dotto).

Interestingly, with their essay titles, Dotto, Sandon, and Siregar adopt and subvert the corporate/colonial terminologies of "raiding," "mining," and "conquering" minerals, trees, forests, peoples, and lands. In taking the extractors to task, the scholars offer creative counter-archival readings as a form of hermeneutical mining for the state's and corporation's strategic intent. In so doing, they reorient terms used unreflexively and unproblematically in corporate films and promotional material, disallowing the Chamber of Mines, Fiat, Alfa, and Goodyear to have the last word. As an example, Siregar calls out the lie of a voice-over narration that claims that "jungles" were "the one thing that held back the people of Sumatra." Citing Karl J. Pelzer's study of the agrarian struggles in East Sumatra (1978), Siregar observes that colonial Dutch policies prohibited locals from competing with Dutch planters in the cultivation and trade of agricultural crops. Film aesthetics and narrative forms obfuscated the ways in which concessions granted by Dutch administrators to the globe-spanning US corporation Goodyear profited imperial governments and overseas financial entities at the expense of the indigenous peoples, native flora, and the commons.

Industrial-strength agriculture, pesticide manufacturing, petroleum, petroleum-based chemicals, and by-products were among the largest extractive industries propelling corporations in North America and Western Europe to international geopolitical dominance in the postwar era. Cinema's centrality to the extractive machinery of these precise industries is elaborated in essays by Benjamín Schultz-Figueroa, Max Long, and Malcolm Cook. As we see, extractive film fosters the propertization of matter and domination of the subaltern. In "From Cattle to Beef Onscreen," Schultz-Figueroa expands the latter category to include cows reared on a massive scale by large agricultural corporations in the southwestern and western states of the United States and Canada, to be slaughtered and rendered into meat. In the 1940s, the US meat industry began making a series of films about these practices, extolling the virtues of industrialized agriculture and its promise of abundance for all Americans. Schultz-Figueroa astutely explores this history through a cluster of films to argue that cinema created an imaginary of efficient industrial and biological extraction as a means to advocate for terraforming land and extracting value from animal bodies. He opens with the 1955 film *Herds West* made by the educational filmmaker Avalon Daggett, in which a voice-over describes the land as an "empty wasteland" before the creation of cattle ranches. Films made by large US agricultural corporations enclosed the commons to promulgate a settler-colonial logic of *terra nullius* remarkably similar to Goodyear's *Conquering the Jungle*. As Schultz-Figueroa observes by naming many of the displaced First Nations, this land was home to Indigenous tribes eliminated or uprooted in the establishment of settler nations in North America. These settlers brought enormous cattle farms integral to the industrialization of agriculture, building the basis of a fast-food economy. "Livestock" films justified and rationalized dark passages that reduced land and animals into consumable and disposable objects, ushering in the relentless tumult of a fast-food market that pumps enormous quantities of methane into our planetary atmosphere today.

Industrialized agriculture was at both the supply and the demand ends of an expanding nexus of fossil fuels and fossil fuel by-products, repurposed to serve North America's domestic and overseas markets. This nexus included pesticides and rubber.¹¹ Following the stench of the twentieth century's fuels and chemicals leads us to the central role played by films from Royal Dutch Shell and British Petroleum, presented in important new essays by Max Long and Malcolm Cook. Royal Dutch Shell was one of the most

11 Roughly 15 percent of global oil is used for purposes other than energy or transport. In Adam Hanieh's words, the "petrochemical" revolution enabled the *syntheticization* of what had previously been encountered and appropriated only within the domain of nature: the very substance of daily life was transformed, alchemy-like, into various derivatives of petroleum" (Hanieh 2021, 27). Fostering the consumption of commodities derived from the petrochemical revolution has been a principal function of commercial media in the years after the formation of advertising-dependent radio in the 1920s. This process sped up in the 1950s in the wake of the spread of commercial television. In short, media has long been essential to societies being held in the thrall of commodity cultures "woven into the very fabric of our social existence" (Hanieh 2021, 28).

significant oil corporations in the early twentieth century in the aftermath of the invention of the internal combustion engine and the fashioning of automotive infrastructures. In 1929, the corporation created a chemicals division and invested heavily in research to identify and produce petrochemicals extricated from oil. Max Long explores the company's use of visual culture to foster this petrochemical revolution in his essay, "Photography versus the Pest." The company established its fabled Shell Film Unit in 1934 and Shell Photographic Unit in 1946. The photographic unit produced color images of insects to foster a market for petrochemical pesticides, which radically reshaped agricultural practices by the mechanized spraying of oil-derived chemicals onto crops. Films and photographs framed insects as "pests" to be exterminated by chemicals that did extensive damage to environments, lives, and bodies. Royal Dutch Shell's photographs and films also circulated widely through the company's outpost film units in extractive zones, including oil-rich Venezuela and Nigeria. In 1954, the company produced a series of color films in Kenya, East Africa, to sell pesticides derived from petroleum by-products. (This was one year after the Iranian coup orchestrated by the British and Americans to control Iranian oil, explored in Malcolm Cook's essay, described next.) As Long notes in his exploration of Shell's histories of visual culture, some of the company's films were made during the violent Mau Mau Uprising. They were shot in Kenyan internment camps using Africans who were almost certainly selected from among the coerced, imprisoned, and displaced people at the camps. The filming occurred even as the Kenyan Land and Freedom forces fought against British imperial dominion—a dominion that began in 1895 amid the Scramble for Africa. Viewed through this optic, the year 1895, frequently cited for the emergence of cinema as part of the second-stage industrial revolution, should also serve as a reference point for a medium mobilized in myriad ways to foster the imperialisms of violent extraction.

The early 1950s were a period in which Royal Dutch Shell's color films on "plant pests" were released in Kenya, and the Italian companies Fiat and Alfa planned and filmed *raid automobilistico* shorts in multiple African nations. It was also the period when British Petroleum (BP) started work on a series of animated films on oil. Repeatedly changing in form and content over the course of its planning, BP's animated film *Full Circle* (1953) registered the profound shocks of the decomposition and reconstitution of extractive empire in the early Cold War era. Malcolm Cook expertly takes us through the lengthy production of this animated film as a means of mapping America's changing policies toward Iran. In 1951, under the leadership of Dr. Mossadegh, the Iranian parliament voted to nationalize the oil industry and take back control over the resource from Britain. In retaliation against this expression of national autonomy, Britain allied with the United States to orchestrate a coup in the summer of 1953, installing Mohammad Reza Shah's regime, which was more congenial to global oil corporations and their Western state sponsors. Cook explores this extraordinary history refracted

through the fraught production of *Full Circle*—a film initiated to animate the virtues of petromodernity to Iranians but mutating over the three years of its production, in the face of changing control over resources essential to circulatory systems of capital.

Our special stream speaks to the ways in which states and corporations used media in the form of film in the first half of the twentieth century to foster practices of extraction that turned mineral, fossil, and biological matter into value. Our contributors' essays bring a revelatory emphasis on archives, geopolitics, and the stakes of conducting historical research on media forms and production practices that worked in tandem with industries of resource extraction to define the twentieth century's material and visual modernities. Research on the extractive functions and ontologies of cinema deserve their place in film history. These essays offer valuable models for exposing states and big businesses that instrumentalized our planet and its multiple species, putting us on call to be vigilant in our present moment of peril and possibility.

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REFERENCES

- Acland, Charles R., and Haidee Wasson, eds. 2011. *Useful Cinema*. Durham: Duke University Press. <https://doi.org/10.1515/9780822394167>.
- Alexander, Zynep Çelik, and Debashree Mukherjee. 2023–2025. “Extractive Media: Infrastructures and Aesthetics of Depletion.” Columbia Center for the Study of Social Difference Workshop. 2023–2025. <https://www.socialdifference.columbia.edu/projects/-/extractive-media>.
- Alliez, Éric, and Maurizio Lazzarato. 2016. *Wars and Capital*. Translated by Ames Hodges. Pasadena: Semiotext(e).
- Anderson, Benedict. 1983. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. London: Verso.
- Anderson, Perry. 2013. “Imperium.” *New Left Review*, September–October, 83.
- Angus, Siobhan. 2024. *Camera Geologica: An Elemental History of Photography*. Durham: Duke University Press. <https://doi.org/10.1353/book.121491>.
- Arboleda, Martín. 2020. *Planetary Mine: Territories of Extraction under Late Capitalism*. London: Verso.
- Beiser, Vince. 2018. *The World in a Grain: The Story of Sand and How It Transformed Civilization*. New York: Riverhead Books.
- Bennet, Jane. 2010. *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press. <https://doi.org/10.2307/j.ctv111jh6w>.
- Berg, Maxine, and Pat Hudson. 2023. *Slavery, Capitalism and the Industrial Revolution*. Cambridge: Polity.
- Bond, David. 2022. *Negative Ecologies: Fossil Fuels and the Discovery of the Environment*. Berkeley: University of California Press. <https://doi.org/10.1525/9780520386792>.
- Bozak, Nadia. 2011. *The Cinematic Footprint: Lights, Camera, Natural Resources*. New Brunswick: Rutgers University Press. <https://doi.org/10.2307/j.ctt5hj37>.
- Braverman, Harry. 1974. *Labour and Monopoly Capital: The Degradation of Work in the Twentieth Century*. New York: Monthly Review Press.
- Bunker, Stephen G., and Paul S. Ciccantell. 2005. *Globalization and the Race for Resources*. Baltimore: The John Hopkins University Press.
- Chakrabarty, Dipesh. 2021. *The Climate of History in a Planetary Age*. Chicago: University of Chicago Press.
- Crawford, Kate. 2021. *Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence*. New Haven: Yale University Press. <https://doi.org/10.12987/9780300252392>.
- Dahlin, Johanna, and Martin Fredriksson. 2017. “Extracting the Commons.” *Cultural Studies* 31:2–3.
- Dahlquist, Marina, and Patrick Vonderau. 2021. *Petrocinema: Sponsored Film and the Oil Industry*. London: Bloomsbury. <https://doi.org/10.5040/9781501354168>.
- Dobson, James E. 2023. *The Birth of Computer Vision*. Minneapolis: University of Minnesota Press.
- Dootson, Kirsty Sinclair. 2023. *The Rainbow’s Gravity: Colour, Materiality and British Modernity*. New Haven: Yale University Press.
- Douglas, Susan J. 1987. *Inventing American Broadcasting, 1899–1922*. Baltimore: John Hopkins University Press.
- Duncan, Pansy. 2022. “Towards a Natural History of Film Form: Silver Salts and the Aesthetics of Early Studio-Era Hollywood.” *Screen* 64 (3): 411–26. <https://doi.org/10.1093/screen/hjac041>.

- Edwards, Paul N. 1996. *The Closed World: Computers and the Politics of Discourse in Cold War America*. Cambridge: MIT Press. <https://doi.org/10.7551/mitpress/1871.001.0001>.
- Federici, Silvia. 2004. *Caliban and the Witch: Women, the Body and Primitive Accumulation*. Brooklyn: Autonomedia.
- Foster, John Bellamy, and Robert W. McChesney. 2014. "Surveillance Capitalism: Monopoly-Finance Capital, the Military Industrial Complex, and the Digital Age." *Monthly Review* 66 (3). https://doi.org/10.14452/MR-066-03-2014-07_1.
- Gertner, Jon. 2012. *The Idea Factory: Bell Labs and the Great Age of American Innovation*. New York: Penguin.
- Ghosh, Amitav. 2016. *The Great Derangement: Climate Change and the Unthinkable*. Chicago: University of Chicago Press. <https://doi.org/10.7208/chicago/9780226323176.001.0001>.
- Gómez-Barris, Macarena. 2017. *The Extractive Zone: Social Ecologies and Decolonial Perspectives*. Durham: Duke University Press. <https://doi.org/10.2307/j.ctv1220n3w>.
- Green, Lesley. 2020. *Rock/Water/Life: Ecology and Humanities for a Decolonial South Africa*. Durham: Duke University Press.
- Grieverson, Lee. 2018. *Cinema and the Wealth of Nations: Media, Capital, and the Liberal World System*. Berkeley: University of California Press. <https://doi.org/10.1525/9780520965348>.
- . 2022. "Prediction Machines." *Critical Quarterly* 64 (2): 30–57.
- . Forthcoming. *The Digital Imperium*.
- Grieverson, Lee, and Colin MacCabe, eds. 2011. *Empire and Film*. London: British Film Institute. <https://doi.org/10.1007/978-1-349-92498-1>.
- Habermas, Jürgen. 1962–1989. *The Structural Transformation of the Public Sphere*. Translated by Thomas Burger and Frederick Lawrence. Cambridge: Polity Press.
- Hamilton, Clive. 2010. *Requiem for a Species: How We Resist the Truth about Climate Change*. New York: Earthscan.
- Hanieh, Adam. 2021. "Petrochemical Empire: The Geo-Politics of Fossil-Fuelled Production." *New Left Review* 130 (27).
- Haraway, Donna. 2015. "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin." *Environmental Humanities* 6 (1).
- Harvey, David. 2004. *The New Imperialism*. Oxford: Oxford University Press.
- Headrick, Daniel. 1991. *The Invisible Weapon: Telecommunications and International Politics, 1851-1945*. Oxford: Oxford University Press. <https://doi.org/10.1093/oso/9780195062731.001.0001>.
- Hediger, Vinzenz, Florian Hoof, and Yvonne Zimmermann. 2024. *Films That Work Harder: The Circulation of Industrial Film*. Amsterdam: Amsterdam University Press. <https://doi.org/10.2307/jj.11141794>.
- Hediger, Vinzenz, and Patrick Vonderau, eds. 2009. *Films That Work: Industrial Film and the Productivity of Media*. Amsterdam: Amsterdam University Press. <https://doi.org/10.5117/9789089640130>.
- Hill, W. Z. 2022. "The Life of a Film: Medianatures, Camphor, and the Ideology of Technological Modernity." *Journal of Cinema and Media Studies* 61 (4). <https://doi.org/10.1353/cj.2022.0048>.
- Horne, Gerald. 2017. *The Apocalypse of Settler Colonialism: The Roots of Slavery, White Supremacy, and Capitalism in Seventeenth Century North America and the Caribbean*. New York: Monthly Review Press.
- Innis, Harold. 1950. *Empire and Communications*. Oxford: Oxford University Press.

- Jacobson, Brian R. 2020. "Prospecting: Cinema and the Exploration of Extraction." In *Cinema of Exploration: Essays on an Adventurous Film Practice*, edited by James L. Cahill and Luca Caminati. London: Routledge. <https://doi.org/10.4324/9780429469299-21>.
- . 2024. *The Cinema of Extractions: Film Materials and Their Forms*. New York: Columbia University Press.
- Jacobson, Brian R., and Priya Jaikumar. 2024. "Extraction and Media Methods." Presented at the Society of Cinema and Media Studies (SCMS) Round Table with Alice Lovejoy, Jennifer Lynn Peterson, Debashree Mukherjee, Joshua Neves, and Justus Nieland, Boston, March 16.
- Jaikumar, Priya. 2019. *Where Histories Reside: India as Filmed Space*. Durham: Duke University Press. <https://doi.org/10.1515/9781478005599>.
- Jaikumar, Priya, and Lee Grieveson. 2020. "CFA: 'On Extraction and Media.'" ———. 2022. "Media and Extraction: A Brief Research Manifesto." *Journal of Environmental Media* 3 (2): 197–206. https://doi.org/10.1386/jem_00085_1.
- Jue, Melody. 2020. *Wild Blue Media: Thinking through Seawater*. Durham: Duke University Press. <https://doi.org/10.1215/9781478007548>.
- Kale, Sunila S. 2020. "From Company Town to Company Village: CSR and the Management of Rural Aspirations in Eastern India's Extractive Economies." *The Journal of Peasant Studies* 47 (6): 1211–32. <https://doi.org/10.1080/03066150.2020.1825290>.
- Kara, Siddarth. 2023. *Cobalt Red: How the Blood of the Congo Powers Our Lives*. New York: Macmillan.
- Kelley, Robin D. G. 2017. "What Did Cedric Robinson Mean by Racial Capitalism?" *Boston Review*, January.
- Klein, Naomi. 2007. *The Shock Doctrine: The Rise of Disaster Capitalism*. London: Picador.
- Kovarik, Bill. 2018. *Revolutions in Communication*. London: Bloomsbury.
- Larkin, Brian. 2013. "The Politics and Poetics of Infrastructure." *Annual Review of Anthropology* 42:327–43. <https://doi.org/10.1146/annurev-anthro-092412-155522>.
- . 2016. "Ambient Infrastructure: Generator Life in Nigeria." *Technosphere Magazine*, November 15, 2016.
- Levine, Yasha. 2018. *Surveillance Valley: The Secret Military History of the Internet*. New York: Public Affairs.
- Liboiron, Max. 2022. *Pollution Is Colonialism*. Durham: Duke University Press. <https://doi.org/10.1515/9781478021445>.
- Lovejoy, Alice. 2019. "Celluloid Geopolitics: Film Stock and the War Economy, 1939–47." *Screen* 60:2. <https://doi.org/10.1093/screen/hjz009>.
- Lynas, Mark. 2008. *Six Degrees: Our Future on a Hotter Planet*. New York: National Geographic.
- Malm, Andreas. 2016. *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming*. London: Verso.
- . 2024. "The Destruction of Palestine Is The Destruction of the Earth." Verso Books Blog. April 8, 2024. <https://www.versobooks.com/en-gb/blogs/news/the-destruction-of-palestine-is-the-destruction-of-the-earth>.
- Mani, Lata. 2022. *Myriad Intimacies*. Durham: Duke University Press. <https://doi.org/10.1515/9781478022886>.
- Marks, Steven G. 2016. *The Information Nexus: Global Capitalism from the Renaissance to the Present*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9781316258170>.

- Marx, Karl. 1994. *Grundrisse: Foundations of the Critique of Political Economy*. Translated by Martin Nicolaus. London: Penguin.
- Maxwell, Richard, and Toby Miller. 2012. *Greening the Media*. Oxford: Oxford University Press.
- Mbembe, Achille. 2017. *Critique of Black Reason*. Translated by Laurent Dubois. Durham: Duke University Press. <https://doi.org/10.2307/j.ctv125jgv8>.
- . 2019. *Necropolitics*. Translated by Steven Corcoran. Durham: Duke University Press. <https://doi.org/10.2307/j.ctv1131298>.
- McBrian, Justin. 2016. "Accumulating Extinction: Planetary Catastrophe in the Necroocene." In *Anthropocene or Capitalocene? Nature, History and the Crisis of Capitalism*, edited by Jason W. Moore. Oakland: PM Press.
- McChesney, Robert. 1993. *Telecommunications, Mass Media and Democracy: The Battle for the Control of U.S. Broadcasting, 1928-1935*. Oxford: Oxford University Press. <https://doi.org/10.1093/oso/9780195071740.001.0001>.
- Mejias, Ulises A., and Nick Couldry. 2024. *Data Grab: The New Colonialism of Big Tech*. London: Penguin. <https://doi.org/10.7208/chicago/9780226832319.001.0001>.
- Melamed, Jodi. 2015. "Racial Capitalism." *Critical Ethnic Studies* 1 (1): 76–85. <https://doi.org/10.5749/jcritethnstud.1.1.0076>.
- Miller, Chris. 2022. *Chip War: The Fight for the World's Most Critical Technology*. New York: Simon & Schuster.
- Mintz, Sidney. 1985. *Sweetness and Power: The Place of Sugar in Modern History*. New York: Penguin.
- Moore, Jason W. 2015. *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. London: Verso.
- . ed. 2016. *Anthropocene or Capitalocene? Nature, History and the Crisis of Capitalism*. Oakland: PM Press.
- . 2017. "The Capitalocene, Part 1: On the Nature and Origins of Our Ecological Crisis." *The Journal of Peasant Studies* 44 (3).
- Morozov, Evgeny. n.d. "The Santiago Boys." <https://the-santiago-boys.com>.
- Parenti, Christian. 2016. "Environment-Making in the Capitalocene: Political Ecology of the State." In *Anthropocene or Capitalocene? Nature, History and the Crisis of Capitalism*, edited by Jason W. Moore. Oakland: PM Press.
- Parikka, Jussi. 2015. *A Geology of Media*. Minneapolis: University of Minnesota Press. <https://doi.org/10.5749/minnesota/9780816695515.001.0001>.
- Past, Elena. 2015. *Italian Cinema Beyond the Human*. Bloomington: Indiana University Press.
- Patel, Raj, and Jason W. Moore. 2020. *A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature, and the Future of the Planet*. London: Verso. <https://doi.org/10.1525/9780520966376>.
- Quijano, Aníbal. 2000. "Coloniality of Power, Eurocentrism, and Latin America." Translated by Michael Ennis. *Nepantla: Views from South* 1 (3).
- Rice, Tom. 2019. *Films for the Colonies: Cinema and the Preservation of the British Empire*. Berkeley: University of California Press. <https://doi.org/10.1525/9780520971813>.
- Riofrancos, Thea. 2017. "Extractivismo Unearthed: A Genealogy of a Radical Discourse." *Cultural Studies* 31 (2–3): 277–306. <https://doi.org/10.1080/09502386.2017.1303429>.
- Robinson, Cedric J. 1983–2020. *Black Marxism: The Making of the Black Radical Tradition*. London: Penguin.

- Rodney, Walter. 1972–2018. *How Europe Underdeveloped Africa*. London: Verso.
- Schwartz, Vanessa. 2020. *Jet Age Aesthetics: The Glamour of Media in Motion*. New Haven: Yale University Press.
- Shiva, Vandana. (2005) 2015. *Earth Democracy: Justice, Sustainability and Peace*. Berkeley: North Atlantic Books. <https://doi.org/10.5040/9781350219755>.
- Starosielski, Nicole. 2015. *The Undersea Network*. Durham: Duke University Press. <https://doi.org/10.1215/9780822376224>.
- . 2019. “The Elements of Media Studies.” *Media+Environment* 1 (1).
- Szeman, Imre, and Jennifer Wenzel. 2021. “What Do We Talk about When We Talk about Extractivism?” *Textual Practice* 35 (3): 505–23. <https://doi.org/10.1080/0950236X.2021.1889829>.
- Tsing, Anna L. 2015. *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton: Princeton University Press. <https://doi.org/10.1515/9781400873548>.
- Tully, John. 2009. “A Victorian Ecological Disaster: Imperialism, the Telegraph, and Gutta-Percha.” *Journal of World History* 20 (4): 559–79.
- Vaughan, Hunter. 2019. *Hollywood’s Dirtiest Secret: The Hidden Environmental Cost of the Movies*. New York: Columbia University Press. <https://doi.org/10.7312/vaug18240>.
- Vergès, Françoise. 2019. “Racial Capitalocene.” In *Futures of Black Radicalism*, edited by Gaye Theresa Johnson and Alex Lubin. London: Verso.
- Von Stackelberg, Emmet. 2023. “Seeing Through Silver: A Chemical History of Moving Images, 1880-1950.” PhD diss., Rutgers University.
- Wallace-Well, David. 2019. *The Uninhabitable Earth: Life After Warming*. New York: Tim Duggan Books.
- Williams, Eric. 1944. *Capitalism and Slavery*. Chapel Hill: University of North Carolina Press.
- Wolfe, Patrick. 2016. *Traces of History: Elementary Structures of Race*. London: Verso.
- Wolford, Wendy. 2021. “The Plantationocene: A Lusotropical Contribution to the Theory.” *Annals of the American Association of Geographers* 111 (6).
- Yusoff, Kathryn. 2018. *A Billion Black Anthropocenes or None*. Minneapolis: University of Minnesota Press. <https://doi.org/10.5749/9781452962054>.
- . 2024. *Geological Life: Inhuman Intimacies and the Geophysics of Race*. Durham: Duke University Press. <https://doi.org/10.1353/book.123469>.
- Zuboff, Shoshana. 2019. *The Age of Surveillance Capitalism*. New York: Profile Books.