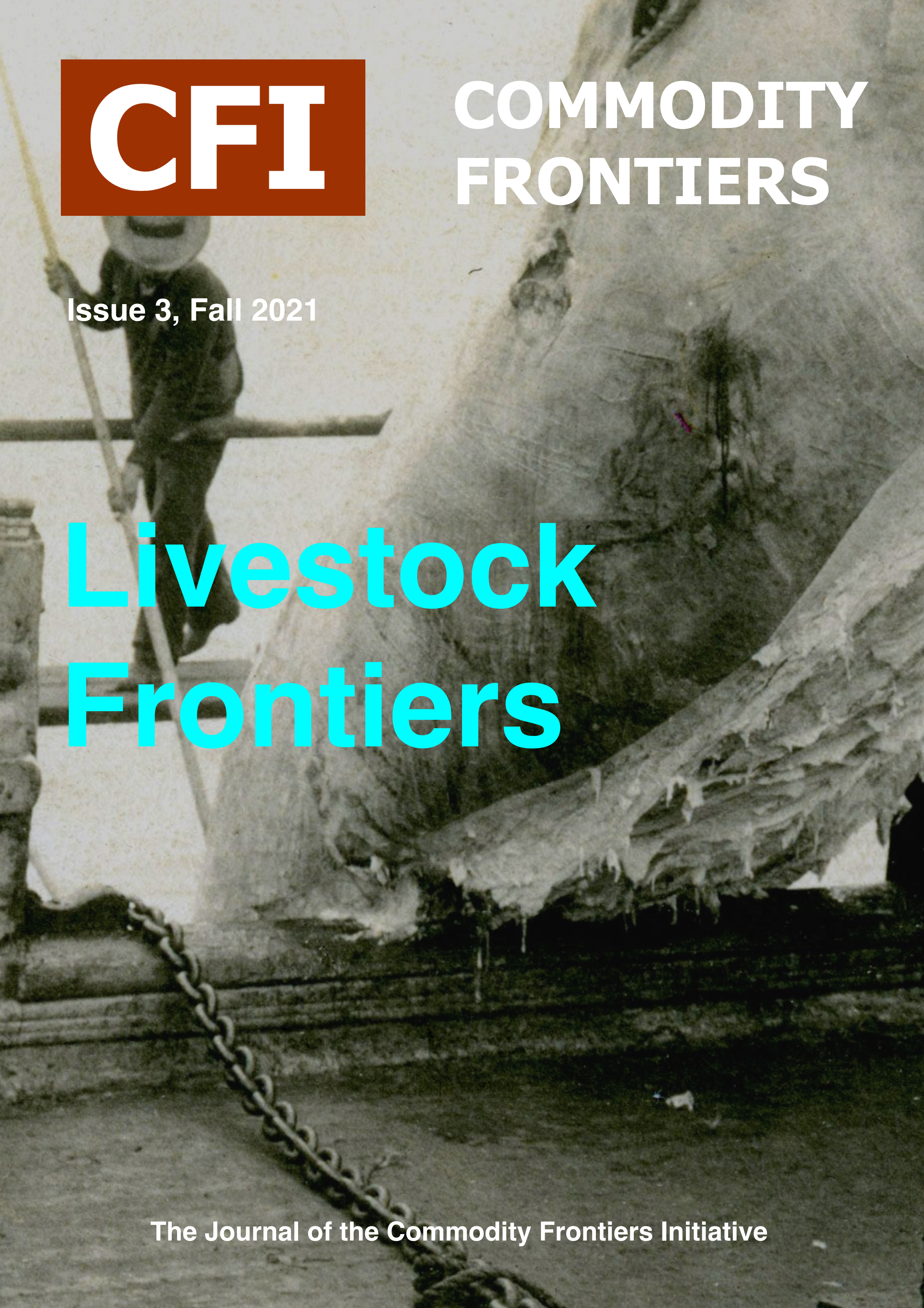

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COMMODITY
FRONTIERS

Issue 3, Fall 2021

Livestock Frontiers

The Journal of the Commodity Frontiers Initiative

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Commodity Frontiers

Capitalism, Contestation, and the Transformation of the Global Countryside
The Journal of the Commodity Frontiers Initiative

Image*: Llamas grazing behind the old signboard of the "Cuprita" copper mine, Bolivia.* Source: Hanne Cottyn, 2018.

Mission Statement

Commodity Frontiers is the Journal of the Commodity Frontiers Initiative (CFI). Edited by a group of scholars and researchers from various disciplines and organizations in the CFI Network, the Journal explores the history and present of capitalism, contestation, and ecological transformation in the global countryside. The point of departure is the commodity frontier concept, which describes sites and processes of the incorporation of "resources" into the expanding capitalist world economy; resources like land, raw materials, knowledge, and labor. In the past 600 years, commodity frontier expansion has been characterized by ecological and distributional conflicts; the displacement and dispossession of Indigenous peoples and other groups; racialization and othering across colonial, settler colonial, and postcolonial geographies; and the production of class, gender, race, and other inequalities.

Each themed issue of *Commodity Frontiers* includes articles about theorizing, studying, and teaching with commodity frontiers. The Journal features reflections and reviews on the uneven and often violent dynamics of capitalist expansion, social change, and ecological transformation on global as well as local scales, in the past and at the present. Contributors include historians, social scientists, (political) ecologists, artists, and activists who work on global commodity production and circulation, rural societies, labor history, the history of capitalism, colonial histories, social metabolism, and conflicts and counternarratives in the countryside. *Commodity Frontiers* endeavors to carry out one of the central goals of the CFI: to provide long historical perspectives on problems that are often assumed to be modern, and to link historical and contemporary research to critically recast our thinking about sustainability, resilience, and crisis.

Commodity Frontiers is a biannual open-access publication housed at commodityfrontiers.com, through *Commodity Frontiers* in the Open Journal System at Wageningen University, and distributed through email subscriptions. Its editorial collective is committed to inclusive, anti-racist, anti-sexist, decolonial scholarship and politics.

Objectives

Commodity Frontiers aims to provide accessible content from multiple perspectives on the past, present, and future of commodity frontier expansion and dynamics. We feature research and educational activities undertaken by academics, artists, activists, and other civil society actors. By inviting short contributions from our multidisciplinary and multi-sectoral networks, and distributing the open-access Journal through our website and the Open Journal System, we aim to reach a broader audience than typical academic publishing allows. We strive for "real-time" reports and reflections on contemporary issues, and contributions that link past and present.

Editorial Process

The articles in *Commodity Frontiers* are not double-blind peer reviewed. Rather, Section Editors purposely invite contributions related to the theme of each issue from experts in respective fields. All articles are reviewed by Section Editors and at least one Editor-in-Chief.

Contributions

Articles that appear in *Commodity Frontiers* are invited contributions. We do not accept uninvited manuscripts. If you would like to contribute to *Commodity Frontiers* or the CFI, there are four routes.

Article contributions: If you would like to contribute an article to one of the sections of the *Commodity Frontiers* journal, please send a short note with your contact information and your area of expertise to the section editors (contact information is on the website) and to Mindi Schneider (mindi.schneider@wur.nl).

Journal theme proposals: If you have an idea for a themed issue of the journal, please send inquiries to Mindi Schneider.

Lexicon entries: We are building a *Commodity Frontiers Lexicon* that will be housed at the CFI website. If you would like to contribute an entry to the Lexicon, or if you would like to write a response to an entry that's been published, please contact Eric Vanhaute (eric.vanhaute@ugent.be), Hanne Cottyn (hanne.cottyn@york.ac.uk), and Claudia Bernardi (clod.zeta@gmail.com), the Lexicon editors.

Round Tables: We will occasionally host virtual round tables on the website and social media to debate concepts, approaches, and politics surrounding commodity frontiers. If you would like to contribute a round table proposal, please email Mindi Schneider.

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Acknowledgements: Mindi Schneider does the design and production work for *Commodity Frontiers,* and manages the Open Journal System and the CFI website. Special thanks to Marjolijn Dijkman for our logo and cover design, and for invaluable design advice. Thanks to Rachel Steely for her essential work as our social media manager. Thanks to all of the contributors to this issue for sharing their work and insights.

Cover image: Whaling ship, 20th Century, USA. Source: New Bedford Whaling Museum.

Editorial Introduction
Commodity Frontiers 3, Fall 2021

Livestock Frontiers

Mindi Schneider and Samuël Coghe

The word *livestock* itself suggests the reduction of animals as living things to animals as economic goods. Disaggregating the term into its component parts—live and stock—also suggest the difficulty of rendering things that are alive into things that are stocked, especially on large or predicable scales. The be alive is biological; living things breathe, eat, defecate, move, sleep, grow, reproduce, connect with others, get sick, die. To be stock, on the other hand, is economic; stocks are things held and exchanged. In capitalist relations specifically, livestock (and livestock parts) are owned, quantified, rationalized, commodified, specialized, simplified, contracted, accumulated, speculated upon, traded, sold.

Ongoing attempts to make living things into stocks, or commodities, are rife with contradictions and impossibilities. Fundamentally, biological bodies are barriers to accumulation. The unruliness of living stocks—including their biological needs, the time they take to grow and mature, their propensities toward genetic diversity, and their vulnerabilities in environments where diversity is strictly denied—make them particularly difficult to standardize and simplify for the market. Just as Karl Polanyi (1944) unveiled the fiction of land, labor, and money as commodities, animals must join this list.

As *species of life*, animals are not produced for the market, and are not commodities. What's more, the rhythms (timing) and characteristics of their lives and bodies do not easily align with capitalist demands for efficiency and standardization. But as *species of capital*, animals are produced precisely for the market, as sources of meat and profit, sometimes aiding state legitimacy in the context of "development," with increasing meat consumption a key marker of progress and growth.

Livestock as *species of capital* underlies the global boom in meat production and consumption over the past several decades. According to official FAO/OECD figures, in 2019, humans ate an average of 43 kg of meat per person per year. This was a dramatic increase compared to about 60 years ago, when the per capita global average was 23 kg/year, and reflects a doubling of global meat production between 1998 and 2018 to 320 million tonnes. These increases in meat consumption are uneven and reflect broader global inequalities. For example, average per capita meat consumption across African countries is 17 kg of meat per year, while in the US and Australia, consumption is over 120 kg/person/year. Counted in the aggregate at the national level, China is the world's biggest meat consumer. China is home to nearly half of all the farmed pigs on the planet, as well as nearly half of global pork production and consumption. The industrialization of livestock agriculture in China starting in the 1980s launched pork's rise as the most produced and consumed meat in the world (Schneider, 2017).

Official figures fail to capture meat consumed in households that raise and slaughter their own animals, and meat that circulates outside of formal markets. So while they are underestimates, these figures illustrate the sharp and steady increase in global meat consumption in the last century, which came about with the rise of capitalist, industrial livestock production. Although animals have been important parts of farming and pastoral systems for millennia, in the years following World War II, a radical transformation in livestock production was underway in the United States that would spur industrialization of livestock on a global scale. A convergence of military and industrial interests helped put these changes in motion.

Industrial Livestock

During the early 1940s, the US government constructed 10 large-scale facilities to supply ammonia for manufacturing explosives. When the war ended, the government shifted munitions facilities from bomb to fertilizer production, repeating an "arms-to-farms" project that began during World War I, subsidizing agricultural firms to become chemical manufacturers (Johnson, 2016). With the post-war flood of industrial nitrogen fertilizer, US agriculture was no longer dependent on manure, legumes, nitrogen-circulating farming practices, or other sources of nitrogen fertilizer to feed crops. Instead, farmers could purchase relatively inexpensive fertilizer, which in subsequent years, they used increasingly to feed monocultural fields of a narrow range of highly subsidized crops including maize, wheat, and later soy.

The fertilizer industry was one of the key forces underlying the separation and specialization of crop farms on the one hand, and livestock farms on the other, which intensified beginning in the 1970s. Building on Marx's ecology, John Bellamy Foster and Fred Magdoff (2000) termed the separation of livestock and crops in the post-war era as a second "metabolic rift" in human-nature relations under capital. In this metabolic rift, commodified industrial nitrogen (and

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New Tennessee Valley Authority synthetic ammonia plant in Muscle Shoals, Alabama, USA, 1 January 1942. Photographer: Alfred T. Palmer. Photo Source: Library of Congress, United States Office of War Information.

phosphorus and potassium) replaced "natural" nitrogen sources and cycles (especially manure) in farming systems as *the* primary way to provide crop nutrition. This broke a plant-animal nutrient cycle that had enabled and grounded farming for thousands of years; a nutrient cycle that came to be framed as an impediment to scaling, specializing, and modernizing agricultural production. As a result of the rift, specialized crop and specialized *concentrated* livestock production soared in the US, as large-scale and capital-intensive operations emerged and rose to dominance, pushing small-scale modes of farming to the margins. Excess nitrogen became a pressing crisis, both in the form of fertilizer run off from the degraded soils of crop fields, and importantly, in the form of the rivers of manure flowing from industrial livestock production facilities.

Despite the ecological and social problems that began to emerge with the rise of large-scale, specialized crop and livestock operations, this became the model that the US government and US-based firms would export around the world through development projects and financing, US-centered trade restrictions, and the disposal of US surplus production first as aid, and later as "cheap" grains. Referred to as a "livestock revolution," the production of livestock increased globally during this period, along with rising meat consumption and incomes. From the late 1970s, US-based transnational agribusiness corporations came to play increasingly powerful roles in crop and livestock production and circulation in the US, and in extending the capitalist logics and methods of the industrial mode of production around the world. Agribusiness firms involved in industrializing livestock were also developing in Europe.

Philip McMichael (2009) refers to this post-1970s era as the *corporate food regime*, observing the increasing power of agrifood capitals in the organization and operation of food production, circulation, and consumption. In this period, the profits, market shares, geographic spread, and influence of a narrow range of increasingly concentrated transnational agribusiness corporations (TNCs) has grown. Although agribusiness TNCs record the lion's share of profit in agrifood systems and enjoy extraordinary influence in policy circles and over other economic actors, they cannot—and do not—operate without strong financial and other supports from governments and intergovernmental organizations. State actors (ministries, courts, university scientists), international financial institutions and banks, and institutions of global governance facilitate the power of TNCs. Agribusiness-centered laws and regulations in and between countries around the world help to variously subsume the reproduction of contract and other farmers, farm workers, soil, water, nitrogen, and other "resources" into capitalist circuits.

As in other global agrifood sectors, TNCs are powerful in livestock and meat production, particularly in its industrial form. TNCs deal in livestock genetics, bodies, feed (including seed and agrochemicals), pharmaceuticals, equipment, and technological infrastructure. They operate as key components of what Tony Weis (2013) refers to as the *industrial grain-oilseed-livestock complex*.

> The industrial grain-oilseed-livestock complex is the dominant system of agriculture across the temperate world, and is spreading to significant parts of the tropics. Its landscapes can be likened to islands of concentrated livestock within seas of grain and oilseed monocultures, with soaring populations of a few livestock species reared in high densities, disarticulated from the surrounding fields. These islands of concentrated livestock and seas of monocultures are then rearticulated by heavy flows of crops such as corn/maize, barley, sorghum, soybeans, and rapeseed/canola cycling through animals. This disarticulation and rearticulation is mediated by an array of technologies, inputs, and large corporations, and marked by the loss of large volumes of usable nutrition. (8)

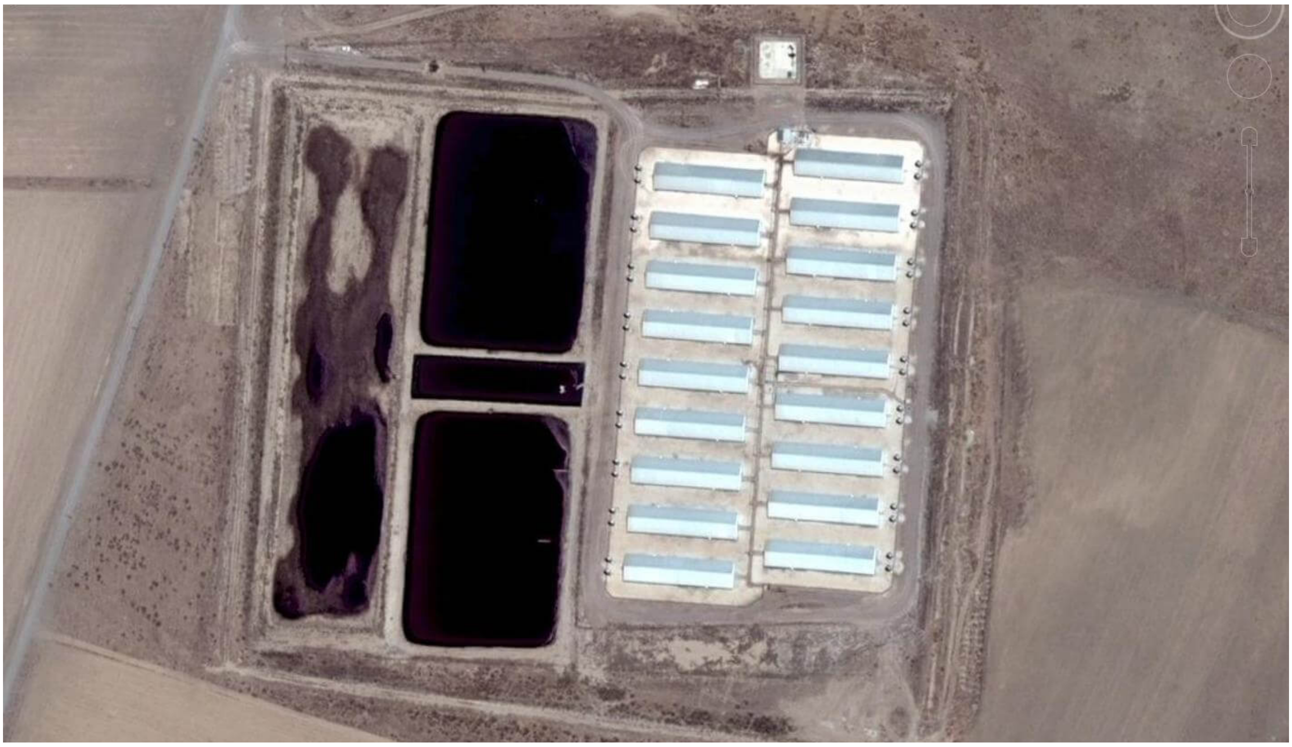
Weis's work builds on and echoes Harriet Friedmann's notion (2000, 481) that in the world food economy,

> Plants and animals have been turned into homogenous rivers of grain and tides of flesh, more closely resembling the money that enlivens their movement from field to table, than their wild ancestors.

The edifice of Weis's livestock-feed complex is built upon attempts to override the animal's biological body as a *species of life*; to override the barriers to accumulation that eating, moving, defecating, vulnerable-to-disease things create. Industrial livestock production is an edifice—and an enterprise—built on precarious biological foundations.

Today, the spatial separation of livestock from feed production–a separation that can span the globe as pigs in China are fed with soy grown in Brazil and the United States—is one of the hallmarks of modern, capitalist, industrial livestock production. Capitalist firms produce industrial livestock and meat through arrangements with farmers, governments, research institutes, and other firms. Firms and farms feed livestock through the transnationalization of crop monocultures and trade, and work to keep animals productive through infrastructure and technology (especially the confined animal feeding operation, or CAFO), pharmaceutical interventions, and biosecurity measures that discipline hog house labor (Blanchette, 2015). A global livestock genetics industry is steadily reducing genetic diversity in livestock breeding, commodifying genetic materials and bodies, and narrowing of the genetic pool. Commodified livestock genetics are sold in the form of semen and sexual services, and commodity livestock are sold in live animal form as carriers and embodiments of the genetics that they will pass on to future generations. Commodity livestock are also, of course, sold as flesh.

The industrial livestock production that began in earnest in the US in the years following WWII has come under increasing attack in the past 20 or so years. Scientists and activists have drawn out the tremendous social and ecological costs of rearing domesticated animals such as pigs, cattle, and poultry, and sometimes sheep and goats, in large-scale industrial facilities. The list of "crimes" is long. The FAO estimates that livestock production in general is responsible for 14.5 percent of greenhouse gas emissions. While these figures include all forms of livestock rearing, extensive cattle ranches in countries like Brazil and intensive pig and poultry production in places like the US and China are the major drivers of livestock-related climate change. These extensive and intensive systems are also connected to environmental degradation (through deforestation, water and air pollution, topsoil loss and degradation,



Confined animal feeding operation (CAFO) near La Gloria, Veracruz, Mexico. April 2006. Photo Source: Flickr.

biodiversity loss from pesticide use in fodder production and overuse of synthetic fertilizers and manure), violating animal rights, compromising food safety, and increasing public health risks through zoonoses. At the same time, discourses about the health benefits of animal proteins (meat, eggs, and dairy), virulent throughout much of the twentieth century, have been more and more challenged by a discourse stressing the value of plant proteins and the health risks of (red) meat (over)consumption. Labor abuses, inhumane working conditions and hours, and the degradation of human lives working in industrial production and slaughter facilities are also common, persistent, deepening, and steadily racialized and gendered (see the interview with Carrie Freshour in this issue).

Ranges of Livestock

But while industrial livestock production is the fastest growing and most dominant form of raising animals for meat in the world today, it is one of a broad range of livestock production systems. On one end of the spectrum, concentrated animal feeding operations, or CAFOs, that house hundreds to thousands of animals together in enclosed structures are the ultimate form and expression of industrial livestock production. Corporate and state-owned CAFO firms and farms in the United States, China, and Europe produce most of the meat sold and (over) consumed in the world today.

At the other end of the spectrum are various forms of extensive livestock production, most notably pastoralism. Pastoralism, the "extensive keeping of locally adapted animals on natural bush and grassland" (Meat Atlas: 48), emerged and evolved after the domestication of livestock in the Fertile Crescent about 10,000 years ago and involves various degrees of mobility, from highly nomadic systems to sedentary agropastoralism. Today, the number of pastoralists is estimated at 200 million and, together with their cattle, goats, sheep, yaks, camels, llamas, reindeer, and other animals, they inhabit extensive and often marginal rangelands on all continents except Antarctica.

Between these two poles, people around the world raise animals to work, eat and/or sell in a variety of systems, at a variety of scales, and through a variety of exchange relations. It is a mistake to consider livestock production systems only in the aggregate; a monolithic view of livestock raising centers the dominant industrial mode, with the risk of invisibilizing a range of not-necessarily-capitalist systems, practices, food- and lifeways (see Curley, this Issue; see also Houzer and Scoones, 2021).

Although livestock production in general makes use of more than 50 percent of the world's lands surface and provides a livelihood for hundreds of millions of people (Meat Atlas: 48), its changing modes of production and its role in transforming the global countryside and shaping the modern world have been long overlooked by historians and other scholars of global capitalism and commodities. The reasons for this neglect are puzzling, especially since livestock and livestock commodities have been shipped and traded over long distances in different parts of the world for centuries, long before the 'livestock revolution' in the second half of the twentieth century, and also played a key role in early European colonization efforts (Sluyter, 2012; Woods, 2017).

Livestock are commodified in multiple ways: their meat, milk, and eggs are sold (in many different forms) for human consumption; their genetics are selected, recombined, patented, and sold; their hides, wool, and feathers and other body parts are processed, traded, used, and turned into new commodities (see Marten Vanden Eynde's interview with Christien Meindertsma in this issue); and some animals are themselves commodified as breeding stock. Beyond commodification (and sometimes including commodification), how humans engage livestock animals is also multiple from using manure as fuel and fertilizer, to enrolling animals as draught animals (e.g. cattle, yaks and buffaloes), to using them as human transport (e.g. camels, horses and mules), to serving as "mobile banks" that can be sold when school fees or other bills come due, to carrying out cultural and familial "traditions." Moreover, in many societies, cattle have long been and still are accumulated to enhance the social prestige and economic security of their

A nomad milks a group of goats that have been tied together by their necks, 21 June 2012. Photo Source: Taylor Weidman/The Vanishing Cultures Project, Wikimedia Commons.

owners and/or to be used for specific transactions such as bridewealth, uses that have not necessarily vanished with the spread of capitalism.

Livestock Frontiers

In this issue of Commodity Frontiers, contributors take up issues relating to animals, livestock, and livestock production through a commodity frontiers lens. Fueled by increasing (local, national, imperial, and global) livestock production "developments" and demands for livestock products—most notably (but not only) meat—and reinforced by technoscientific innovations, new livestock frontiers have emerged and spread across the globe. With livestock frontiers we mean both processes and sites in which animals are bred, reared, cured, traded, and commodified in novel ways, by re-allocating land, labour, capital, knowledge, and other resources, to enhance productivity and maximize gains. By doing so, livestock frontiers have changed human-animal and interhuman social relations, economic systems, and ecological landscapes in various and often unintended ways. Furthermore, livestock frontiers have become deeply entangled with frontiers in agriculture, securing the production of fodder crops such as soy and corn. These changes include, but are not limited to, the industrialization of livestock production that we discussed above.

Given the multitude of actors and processes involved in transforming livestock production and livestock-based commodities in the past and present, there are many possible angles from which to study livestock frontiers. This Issue opens with Tony Weis's contribution entitled, Animals as and on Resource Frontiers, in which he helpfully differentiates the exploitation of non-human animals in two forms: wild animals as "resource frontiers," and domesticated animals as and on "resource frontiers." Weis's piece begins in the confluence of European hunting and trapping of fur-bearing animals with the transformation of ecosystems and the destabilization of Indigenous societies in the development of settler-colonial economies in

North America. He concludes with present and mounting concerns over links between industrial cattle, pig, and poultry production with de-faunation and climate change.

In a similar vein, Joana Medrado examines the history and present-day dynamics of deforestation and cattle grazing in Brazil, one of the most important sites in the industrial grain-oilseed-livestock complex. With a focus on the long-standing alliance between agribusiness and the Brazilian state, she discusses the legal theft of Indigenous lands and the deterritorialization and deforestation of the Amazon.

In their interview with Carrie Freshour, the piece by Hanne Cottyn and Stha Yeni takes us to the "poultry capital of the world" in the US South. They discuss Dr. Freshour's research on racist exploitation of workers in poultry production facilities, including workers' resistance, capitalist and state backlash, and the impacts of COVID-19 on workers' health and safety.

Rounding out the contributions related to industrial livestock production is Maarten Vanden Eynde's interview with Christien Meindertsma, the Dutch designer who researched and wrote a booked called Pig 05049 that chronicles the many consumer products made from a pig called 05049. They discuss Meindertsma's motivations for making the book and reflect on some of the challenges of promoting and brining about social change regarding meat (and other) consumption.

Andrew Curley's piece looks at frontiers as "literal sites of struggle," discussing the violence of colonialism in the US Southwest and the resilience of Diné (Navajo) relationships with sheep. He considers how Diné connections to sheep are part of decolonial struggles, including among young people and in a locally based organization that promotes "sustainable livelihood through the Navajo way of life."

Sustainable ways of life are also at the center of Natasha Maru's contribution about the Salim Mama Youth Course in Gujarat state of Western India, which trains youth in pastoralism and ecosystems. Maru argues that in addition to raising enthusiasm and knowhow around pastoralism, the course contributes to ongoing resistance against state induced corporate capture of economy, society, and nature in the region.

Eric Vanhaute's article examines peasant work historically and today. As predominantly unwaged labor, he looks at how peasant work underlies the expansion of civilizations, empires, states, and economies for the last ten millennia, and argues that peasant work is foundational for resolving contemporary socio-ecological crises, including those related to capitalist industrial livestock production.

This Issues closes with Jonas M. Albrecht's review of Joshua Specht's book Red Meat Republic.

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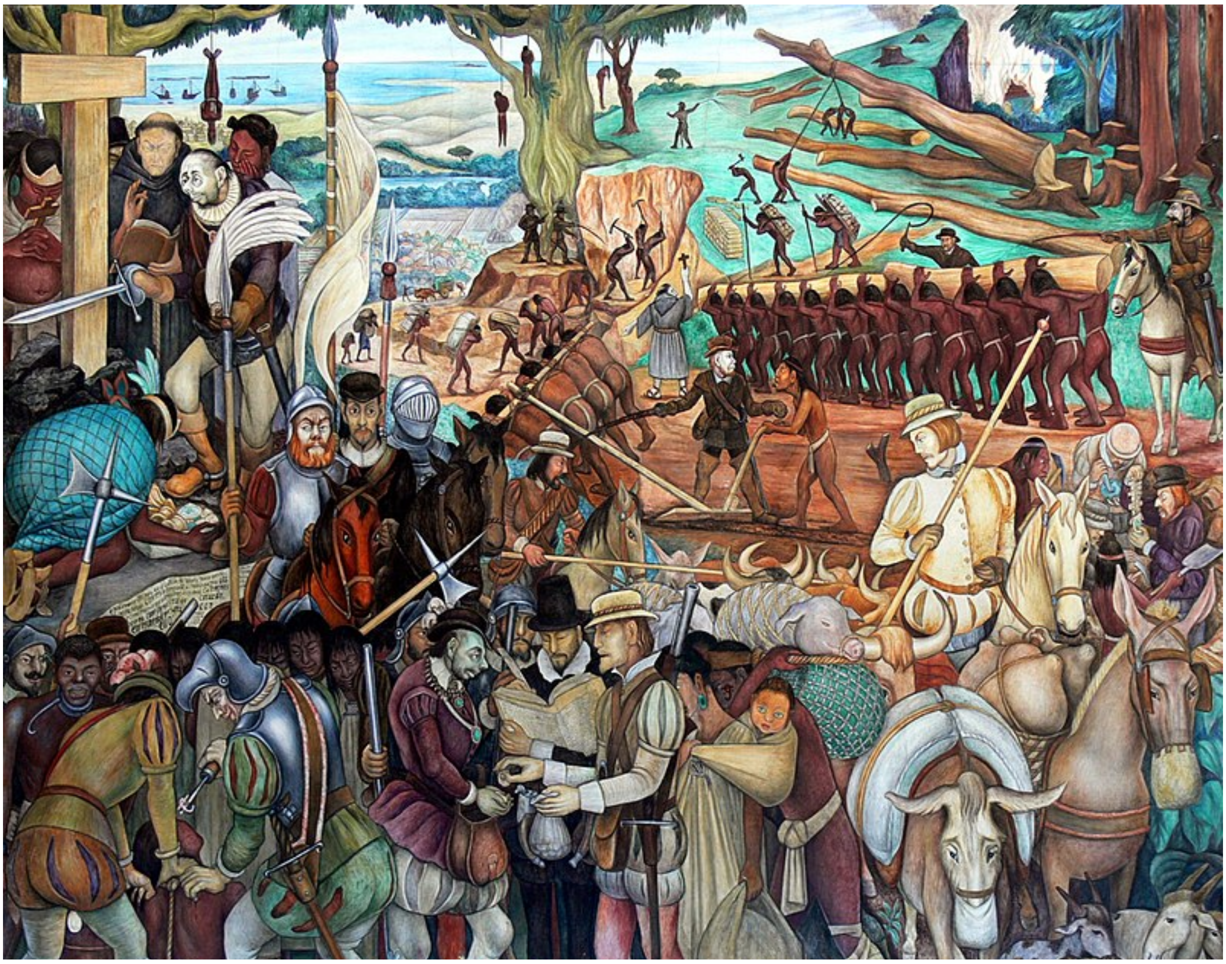
Animals as and on Resource Frontiers

Tony Weis

Keywords: settler colonialism, de-faunation, livestock, enclosures

Abstract: This paper attempts to locate changing interspecies relations in the dynamism and violence of capitalist expansion on a world scale, setting out two primary ways that the rising exploitation of non-human animals contributed to the development of settler-colonial economies, destabilization of Indigenous societies, and transformation of ecosystems. One path was set by burgeoning demand essentially turning some wild animal species into increasingly valuable commodities and driving the rising scale and systematization of extraction and trade, which tended to quickly undermine conditions of abundance and make these animal frontiers very mobile. The second path started from the introduction of domesticated animals, with the muscle power and bodily commodities derived from proliferating populations valued not only in the expansion of agricultural landscapes but also in the formation and functioning of other resource frontiers, and ultimately bound up in waves of enclosures and expulsions. This framework seeks to simultaneously pose challenges for historical analysis and provide insights that help to understand the trajectory of animal life today.



Mexico City - Palacio Nacional. Mural (1929 - 1945) by Diego Rivera: *Exploitation of Mexico by Spanish Conquistadors.* WikiMedia Commons.

The conquest of new resource frontiers has been an important part of the expansion of capitalism since the 15th century, with cheap nature repeatedly fuelling widening circuits of accumulation and productivity gains. At the heart of this cheapness is a denial of the intrinsic value of other species and self-organizing ecosystems, paired with a denigration of other human modes of living in relation to them (Moore 2015). This paper suggests that radical changes in interspecies relations should be understood as a central feature of this dynamism and violence, and identifies two primary ways that the rising exploitation of non-human animals has featured in settler-colonial expansion, Indigenous expulsions, and sweeping ecological change, with reference to some important historical examples.

The first involves the sudden transformation of some wild animal species into valuable commodities, leading to a rising scale and systematization of killing, processing, and trading animal body parts. Because these resource frontiers hinge on a fundamental biological contradiction – requiring abundant populations of wild animals while incentivizing rates of harvest above natural rates of reproduction – they have tended to be extremely mobile. The second involves introductions and rising populations of domesticated animals, which at once became major sources of value in themselves as well as being crucial to the extraction of other resources. This obviously starts from the production of food and other bodily products, and also includes the use of animals to demonstrate private property rights over land (i.e., as a mechanism of enclosure), the role of coerced muscle power in extending agriculture and extracting other commodities, and the effective subsidy to further development afforded by the unplanned spread of feral animals beyond settler-colonial frontiers.

The paper concludes with some brief reflections on how this framework for approaching animals as and on resource frontiers relates to the fast-changing present context, in which populations of wild animals are crashing almost everywhere while soaring populations of livestock animals command immense areas of land.

Wild Animals as Resource Frontiers

Improving techniques and growing prowess in hunting, trapping, and fishing were fundamental to the radiation of the human species around the world, along with land bridges created in the last Ice Age. The movement of Paleolithic humans into new landscapes coincided with the extinction of some large herbivore and predator species in a range of settings, from Australasia to the Americas, though it is impossible to entirely distinguish hunting pressures from climatic stress in Pleistocene mega-fauna extinctions (Browswimmer 2002; Flannery 2001). However, beyond these extinctions and the associated destabilization of food webs, animal species had to become sufficiently wary of human predation to survive. While subsequent human hunting and trapping might have caused extirpations (especially of large herbivores and top predators) or periodic declines in some populations, it did not cause animal extinctions (apart from some islands), even as the rise and spread of agriculture and herding slowly but surely reduced habitats over the past 10,000 years. It was not until the rise of colonialism and capitalism that hunting and trapping pressures again began driving new waves of extinctions, as well as greatly expanding the scale at which animals were extirpated from ecosystems (Dawson 2016; Richards 2014; Broswimmer 2002).

Capitalism established a new motive force for hunting, trapping, and fishing, such that bodily materials from certain species of wild animals began to be conceived not only in terms of meeting basic needs but also increasingly as sources of value that could be exchanged for other things. As indicated, a basic condition for these frontiers is abundant populations of certain species, which typically depends upon relatively self-organizing ecosystems (or only modest levels of human intervention) and implies that animals maintain autonomous lives up to the point they are killed. However, when various body parts become valued commodities it incentivizes increasing killing beyond natural rates of reproduction, and without regard for how the depopulation or extirpation of certain species can affect the health of ecosystems. As this frontier is essentially a free gift of nature to begin with, the simple response is to rip into other such gifts; that is, to move into new spaces where desired populations are still abundant, or turn to other species. Although this cycle of plunder and movement might leave behind less evident ecological destruction than other resource frontiers (i.e., without tearing down forests, tearing up natural grasslands, or filling in wetlands), big population declines or the complete elimination of some animals can fundamentally alter the nature of food webs, with cascading effects on how ecosystem function (Dirzo et al. 2014)[1]. Part of this dynamic is powerfully conveyed by the notion of increasingly 'empty forests' (Redford 1992).

Two important examples help to illustrate this sort of commodity frontier. The first case arose from the value that European elites placed on the pelts of particular fur-bearing animals, which were used in items like hats and coats that not only helped some people cope with cold winters but came to play a part in displays of class status. After Europeans ravaged local populations of fur-bearing animals, Russia became Europe's first great fur frontier, as well as exporting to temperate parts of Asia where furs were also in demand. By the early 16th century, a network of harvesting and trading routes was already well established far to the north of Moscow, with pelts extracted from a range of small and large mammals, and export earnings from furs came to be dominated by the monarchy and provided a crucial source of revenue for the early modern state. Thus, as populations of key species were decimated, there were powerful interests determined to keep pushing Russia's fur frontier eastward and northward across Siberia, contributing to successive territorial acquisitions and the colonization of Indigenous peoples. By the mid-18th century, Russian explorers and fur traders had moved eastward into North America, with bountiful continental and maritime furs (especially sea otters) the key motive for the establishment of Russian settlements in Alaska at the end of the 18th century (Richards 2014; Gibson 1980; Fisher 1943).

The wealth and ultimate declines of Russian fur frontiers led early European explorers in North America to quickly recognize that abundant assemblages of furbearing animals there could generate great riches. The fur frontier in North America was characterized by the familiar cycle of decimation followed by further incursions in pursuit of healthy populations, with the establishment of fur trading posts marking the geography of colonial expansion westward and northward. Furs provided a major source of export revenue for British and French colonial governments and stoked the rivalry between them, as well as exacerbating or generating new tensions between some Indigenous nations[2]. Well into the 19th century, the mercantile Hudson's Bay Company largely governed Euro-settler exploration and economic activity across a vast area of modern-day Canada once named Rupert's Land, and the centrality of beaver was reflected in the fact that its fur (or what was referred to as 'made' or 'prepared' beaver) acted as a barometer of exchange for other furbearing animals, and a sort of currency could be traded for commodities such as cloth, alcohol, hatchets, and guns (Innis 1999)[3].

The fur trade also had a vanguard role destabilizing Indigenous cultures. While subsistence hunting, trapping, and fishing continued amidst European incursions, these activities increasingly unfolded alongside

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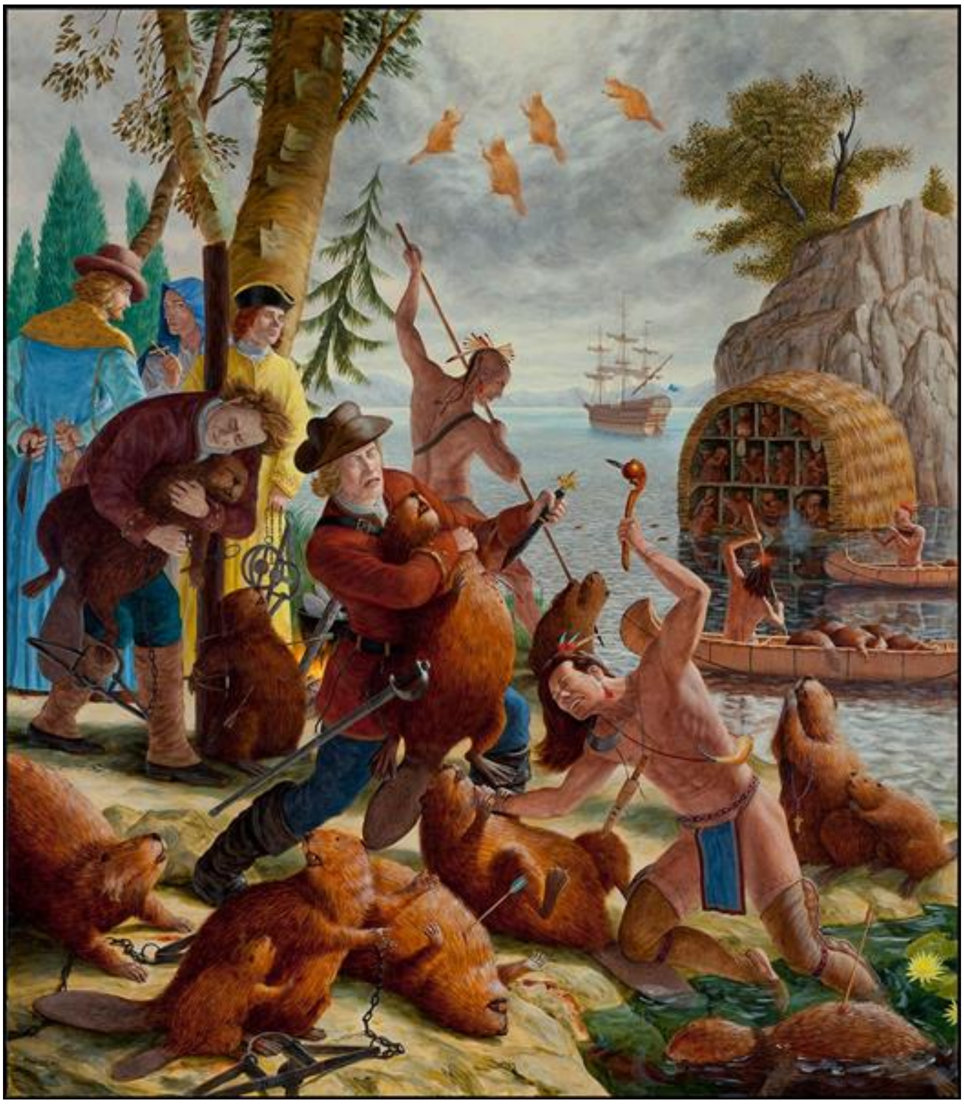
[1] Trophic cascades are most often discussed with respect to top predators and large herbivores, though some smaller animals can also have unique and important functional roles.

[2] The most famous instance of this was the so-called Beaver Wars of the 17th century in the St. Lawrence Valley and Great Lakes region, which were driven by British and French competition but reverberated in conflict and warfare between Iroquois and Algonquian nations.

[3] Beavers have a remarkable capacity to reshape microenvironments to a degree that they collectively affect the configuration of whole watersheds where populations are healthy. The decimation of beavers on a continental scale is a dramatic illustration of how the removal of some animal species (and not only top predators or large herbivores) can profoundly alter the dynamics of ecosystems.



Kent Monkman. (2011). *Les Castors Du Roi.* Acrylic on Canvas. Photo source: WikiArt.

attempts to kill, prepare, and sell as many furbearing animals as possible, as quickly as possible. The ensuing exchanges deeply eroded self-sufficiency over time, as Indigenous peoples became more dependent on buying and selling and as more goods moved from perceived luxuries to necessities, which both amplified extractive pressures and entrapped many in relations of debt (Richards 2014; Innis 1999). This not only involved profound material changes to ways of life, but also deep perceptual changes about animals and interspecies relations, with acts of killing severed from cultural mores that had long venerated restraint and sufficiency.

Whales are another very significant example of a group of species becoming suddenly prized as a resource frontier and subjected to increasingly systematic extraction. While smaller-bodied whale species were hunted in nearshore environments over millennia, this was only possible at an extremely small scale relative to populations and ranges and could not affect abundance. Ships dedicated to whaling in the North Atlantic Ocean began to emerge in the 17th century, but commercial whaling did not truly erupt until the Industrial Revolution. Industrialization created booming demand for a variety of bodily products, most of all whale oil (derived from blubber) as a lubricant in factories. In the first half of the 19th century, the eastern seaboard of the US was the heart of the global whaling frontier and the scale of US whaling industry increased roughly tenfold (Richards 2014; Thompson 2012).

Although the US whaling boom burst in the second half of the 19th century, outmoded

Whale oils casks, New Bedford, Massachusetts, late 1800s. Photo source: *New Bedford Whaling Museum*.

by discoveries of oil that represented a cheaper, more abundant, and easily substitutable resource, global whaling frontiers continued expanding on a world scale into the 20th century, enabled by bigger, stronger, and faster oil-powered ships. The rising scale of extraction was such that by the 1940s, scientific experts were issuing dire warnings that most large whale species would be driven to extinction within just a few decades if actions were not taken, a prospect that led to the establishment of the International Whaling Commission (IWC) in 1946. However, it was not until the 1960s and 1970s that the IWC started to impose stronger limits, followed by a complete global moratorium on commercial whaling in 1986[4], which has helped reverse the population decline of a few greatly imperilled species. Still, many of the largest species continue to survive on a knife's edge, with populations just a tiny percentage of their extent two centuries ago. The magnitude of whale population and biomass declines is such that it has been shown to have affected the dynamics of carbon sequestration in the oceans (Pershing et al. 2010).

Both fur and whaling frontiers have played out over massive areas, contributed to great economic changes, and drastically altered the populations and geographic distributions of a range of species in the space of just a few centuries. But wild animals can also constitute resource frontiers at much smaller scales, and affect more localized social, economic, and ecological changes, and there are many cases that warrant further study, both historically (e.g. the dynamics and impacts of the harvest and trade for things like elephant ivory, tortoise shells, and maritime furs in various settings under European colonial rule) and as part of contemporary conservation challenges, as discussed in the conclusion.

Domesticated Animals as and on Resource Frontiers

The long course of domestication was highly uneven, with Eurasia possessing most of the species of large mammals that were good candidates to be tamed and herded, whereas the Americas contained far fewer possibilities and Australasia almost none (Fagan 2017; Diamond 2002)[5]. As well as providing readily accessible stores of protein-dense foods, domestication also established important sources of muscle power on farms and to transport goods over space, with cattle, horses, donkeys, water buffalo, and camels the most important 'beasts of burden' for human civilizations. The growth of domesticated animal populations played a crucial part in the slow expansion of agricultural frontiers in Eurasia and Africa over long periods of time (Fagan 2017), both in the heavy work of tilling land and carrying materials, and in the increasing organization of land for crops and pasture – although some migratory herding unfolded across natural grasslands and livestock were often fed in ways (e.g. crop stubble, fallowed lands, household food wastes, and surrounding ecosystems) that did not significantly augment the land under cultivation.

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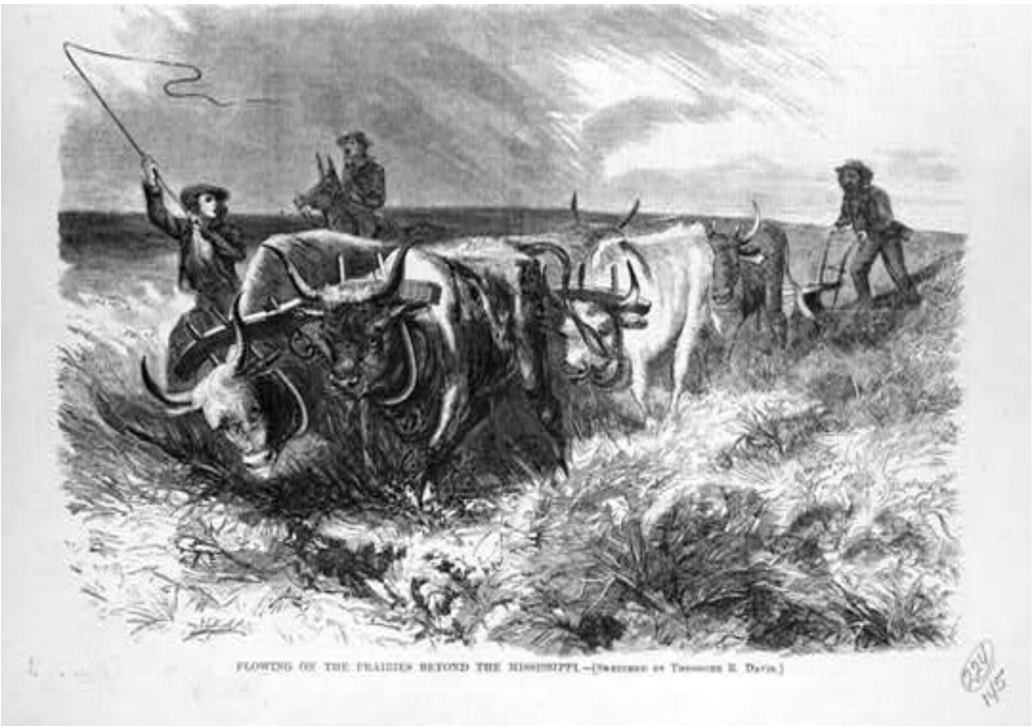
[4] Other mechanisms allowed some whaling to subsequently continue at reduced levels, most notably by Japan, which for decades used scientific permits to sanction some hunting (before withdrawing from the IWC in 2019), and Norway and Iceland, which issue some whaling permits on the grounds of tradition and culture.

Domesticated animals played significant parts in Europe's colonial wars, military rule, and resource extraction in various parts of Africa and Asia (Hevia 2018), but the impacts of introduced animals were most dramatic in the regions where the course of domestication had been radically different: the Americas and Australasia. At the point of European conquest, llamas and alpacas were the only domesticated mammals in the Americas that provided any muscle power, and they were relatively limited in geographic extent and paled in strength in comparison to the livestock species of Eurasia and Africa. Australasia had no large domesticated mammals at all. The rapid introduction of domesticated animals was a pivotal aspect of European colonialization in both the Americas and Australasia, including cattle, pigs, horses, donkeys, sheep, goats, and chickens, dogs, and cats[6], greatly enhancing the ability of settler-colonists to sustain themselves in new bioregions and the speed with which they were able to transform ecosystems (Flannery 2001; 1995; Crosby 1986; 1972).

The east coast of Brazil and the islands of the Caribbean were early resource frontiers in the Americas that introduced domesticated animals helped to operationalize, through



Theodore R. Davis. (1868). *Plowing on the Prairie Beyond the Mississippi.* Photo source: USA Library of Congress.

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[5] In essence, these were large herbivores that live in herds and are not too skittish or picky about what they eat.

[6] In Australia, the introduction of rabbits and foxes was also very ecologically transformative.

both the provision of food and muscle power. In the Caribbean, introduced animals spread like wildfire from the arrival of Columbus onwards, without any large native predators to contain them, and with the Tainos and Carib populations decimated by the introduction of new infectious diseases and the violence of conquest (Crosby 1986; 1972). While the Spanish quickly turned their attention towards the mineral riches of central Mexico and the Andes, the populations of introduced animals – both managed and those that went feral and had to be hunted – helped make Caribbean islands significant refueling stations for transatlantic shipping to Spain, as well as providing sources of leather and tallow for the mining economy as it emerged. After sugar and slavery came to define the colonial economies in both eastern Brazil and the islands of the Caribbean, the muscle power of animals was still needed for tasks like pulling plows, dragging felled trees, and carting materials, and horses and dogs were used to help track and capture escaped slaves[7].

Europeans immediately introduced domesticated animals wherever they established colonies in North, Central, and South America[8], and the growth of livestock populations became important sources of value through flesh, milk, hides, and other bodily products, which helped spur speeding expulsions and enclosures – a dynamic that was again greatly accelerated by a series of epidemic diseases that ravaged Indigenous populations (Crosby 1986; 1972). The labour-intensive agricultural systems that had previously prevailed in the most densely populated regions of Mexico, Central America, and South America were swiftly transformed under Spanish colonial rule, with surviving Indigenous populations pushed to more marginal lands and much of the best fertile land devoted to haciendas comprised of extensive livestock ranching and grain monocultures (Wolf 1982).

As Crosby (1972:109) put it, the expansion of "livestock provided not only much of the muscle with which exploitation of America was undertaken, but was in itself an important end-product of that exploitation, and a factor spurring Europeans to expand the areas being exploited," with cattle repeatedly at the forefront of advancing colonial frontiers. Livestock simultaneously provided an invaluable source of power in extensive agricultural systems, helped settler-colonists assert property rights over land, and generated commodities with relatively little human labour in contexts where labour was often scarce. In the Spanish and Portuguese colonial realms, the values of both muscle power and bodily products were deeply entwined with the extraction of the mineral riches of central Mexico, the Andes, and Minas Gerais. While mining enterprises hinged on the compulsion of Indigenous labour and enslaved Africans in the first instance (Wolf 1982), they were also inconceivable without the strength and endurance of horses, donkeys, and mules hauling heavy materials over long distances and often rugged terrain. The commodities produced in extensive ranching and grain farming were not directly exported to Europe, but helped enable the mining economy and other sorts of resource extraction, foremost through food but also with other essential materials, such as leather bags and tallow lamps.

Unlike the Caribbean, introduced domesticated animals faced large predators in North, Central, and South America, but many nevertheless had similar success in going feral, especially cattle and pigs, with progeny capable of moving beyond European-controlled landscapes. Nowhere was this more dramatic than with the large populations of feral cattle that came to thrive on some South America's great grasslands. Pigs also proved extremely hardy and adaptable, aided by their ability to eat almost anything, which contributed to their ecological destructiveness, from damage to tree seedlings to preying on a variety of animals not adapted to their presence (Crosby 1986; 1972). Sheep are clearly less equipped to cope with large predators, but high rates of reproduction still allowed them to become major agents of ecological change in some regions, most dramatically in large areas of modern-day Mexico (Melville 1994).

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[7] The terror associated with hunting dogs also comprised an important part of the disciplinary apparatus.

[8] Horses and fighting dogs were also part of the military superiority of the Spanish conquistadores, and their incredibly fast conquests of the powerful Aztec and Incan Empires.

Although feral livestock had agency of their own in moving into new landscapes, this still served to subsidize settler-colonial interests, as it established a sort of hybrid frontier where abundant populations were hunted for food and other resources while food webs were destabilized, initiating a process of biological simplification that made ensuing conversions of land easier. The Pampas region is a prime example, as wild cattle were hunted on horseback for a significant period of time, reaching into the foothills of Patagonia, before natural grasslands were more systematically reorganized for agriculture (especially wheat) and cattle ranching (including the introduction of plants like clover and alfalfa for grazing), transformations that enabled Argentina to become one of the first major exporters of wheat and beef in the late 19th century. The expansion of cattle also helped propel enclosures and conversions of land in other parts of South America, such as the Cerrado, Chaco, Pantanal, and Llanos regions, both under Spanish and Portuguese colonial rule and beyond independence (Crosby 1986; 1972; Prado 1967).

In the modern-day US and Canada, introduced livestock mostly advanced with the westward march of settler-colonial enclosures, with cattle and pigs the most important species in the mixed crop and livestock model of family farming that emerged. Cattle were prized in mixed farms for their flesh, milk, manure, and muscle power, and pigs were prized for their reproductive speed and the relative ease with which they could be tended and fed, scavenging close to farms and households and consuming otherwise unusable farm wastes and household scraps (although, as elsewhere, some pigs succeeded in going feral from early on[9]). In addition to oxen, the muscle power of horses, donkeys, and mules played immeasurable parts in: the conversion of forests to fields; the production and movement of outputs from family farms (which were characterized by chronic labour shortages and a high degree of market-orientation); and the functioning of the forestry frontiers from the eastern seaboard to the Great Lakes, dragging massive logs over snow and ice in the winter to water bodies where they could be floated in the spring.

In the early 19th century, settler-colonists still had only a limited agricultural footprint on the Great Plains and Prairies of the US and Canada, and the commercial harvest of wild animals was still a primary form of resource extraction. However, in the second half of the 19th century, especially after the US Civil War, there was a tidal wave of enclosures, expulsions of Indigenous peoples, and destruction of ecosystems, with the radical reconfiguration of animal life a fundamental part of the violence that swept over the grasslands (Wishart 2016; Daschuk 2013; Isenberg 2000). A key aspect of this was the onslaught of bison hunting, one of the greatest flurries of wild mammalian slaughter in world history, as the bison population that numbered in the tens of millions in 1800 was driven to the brink of extinction by 1900. This bears some resemblance to the transfiguration of certain species into resource frontiers, as new markets emerged for bison hides (as belts in eastern factories) and ground up bones (as fertilizers on eastern farms), but market signals were also augmented by direct government payments as part of a pacification strategy in the late 19th century. The basic goal of these subsidies was to obliterate the ways of life and cultures that revolved around the bison, starving remaining Indigenous resisters into submission and forcing them onto small land allotments. Thus, while the race to slaughter bison was partly driven by their value as commodities, there was also a de facto military expense at play, one tragic reflection being that countless carcasses were simply left to rot (Wishart 2016; Isenberg 2000).

Along with this mass slaughter, the proliferation of introduced livestock was integral to the breakneck pace that land – held as a commons over millennia by Indigenous

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[9] Later introductions of wild European boars for hunting augmented the feral turn of some domesticated pigs, and the descendants of both continue to be a highly destructive invasive species across large areas of the US to the present day (Snow et al. 2016).

Photograph 1892 of a pile of American bison skulls waiting to be ground for fertilizer. Burton Historical Collection, Detroit Public Library. Photo source: Wikimedia Commons.

societies – was summarily enclosed for settler-colonists, from Texas to Saskatchewan. Because these grasslands were composed of dense assemblages of plants with deep and hardy root systems, that had evolved to cope with considerable variability in rainfall, it took the innovation of the steel plow paired with the muscle power of draft animals to tear up thick roots and unlock the bounty of this rich soil frontier, enabling farmers to plant crops like wheat and corn and ranchers to introduce new grasses for grazing animals. As production boomed, pigs began to be conceived as a new way for farmers to store and add value to corn and other coarse grains, with the abundance of both corn and pigs in the Ohio River basin having already given rise to the industrialization of animal slaughter in Cincinnati (Cronon 1991). By the late 19th century, core dynamics of the industrial grain-oilseed-livestock complex had been established, with rising populations of animals reared in greater densities, commanding increasing shares of arable land (with animals serving to profitably absorb chronic grain surpluses), and oriented towards large slaughter and processing facilities – a model that has subsequently spread across large areas of the world's best agricultural land (Weis 2013; Cronon 1991).

Although there are no rich soil frontiers left to be discovered, livestock continues to be a major part of the ongoing colonization of some low-quality agricultural frontiers, most destructively in the Brazilian Amazon, where marginal cattle pasture – marked by low stocking densities and high rates of erosion – now covers much of the deforested land in the region. This enormous region was largely unexploited until the 1960s, when the Brazilian state began to aggressively subsidize deforestation, fired by a combination of political (i.e., as a means to asserting sovereignty) and economic motives (i.e., speculating on energy and mineral resource potential). Large landholders reaped windfalls of direct payments and tax concessions when they could demonstrate control over land, with cattle ranching the cheapest means to accomplish this. In other words, the advance of ranching frontiers across the Brazilian Amazon has been much more complex than simply the direct earnings (Hecht and

Cockburn 2010), although rising beef production is increasingly lucrative in itself, influenced by cheap land and Brazil's powerful meat-processing sector (Philips et al. 2019). In addition to rising beef production and exports, livestock are also entwined with the soybean boom in Amazonia, as it is by far the dominant crop cultivated in the region and primarily used as animal feed, both domestically and through exports (Song et al. 2021; Oliveira and Schneider 2016).

Beyond the tropics, the only other possibility for developing new agricultural frontiers lies in boreal regions, as climate change could soon establish warm enough average temperatures and sufficiently lengthen growing seasons to allow for cultivation, provided soils could be duly enhanced (Hannah et al. 2020). While one can only speculate on the roles that ranches, mixed farms, and industrial operations could play in this development, it would surely bring disastrous outcomes for wild animals, many of which (especially large carnivores and herbivores) are already reeling from habitat loss to other resource development.

Some concluding thoughts

The context of non-human animal life is drastically different today than it was when mass harvests of wild animals comprised important resource frontiers or when domesticated animals played vital roles establishing, extending, and operationalizing resource frontiers, in ways that involved food values but also extended far beyond them. The reduction and fragmentation of natural habitats combined with climate change are at the center of the process of de-faunation, a term that describes the widespread impoverishment of animal life, which is not only reflected in worsening extinction risks but also steep population declines across a wide range of not-yet threatened species (ZSL/WWF 2020; Ceballos et al. 2017; Dirzo et al. 2014). De-faunation can also be seen in the fact that wild mammals and birds comprise a small and declining share of the total biomass of all animals on earth (Bar-On et al. 2018; Smil 2013).

As habitats and wild animal populations wither, there are obviously far fewer regions where significant wealth can be made from extracting large numbers of cheap bodies. With respect to fur-bearing animals, the declining abundance of populations in the wild has been met with increasing intensification, as the vast majority of the annual global volume of fur produced now comes from 'fur farms', which are marked by extraordinary densities, sensory and behavioural deprivation, and suffering (Harris and Pickett 2015). The value of wild animals as resource frontiers now increasingly derives from conditions associated with de-faunation; that is, rarity, the difficulty of extraction, transhipment, and sales (including the clandestine nature of black markets), and high unit prices, from tiger pelts to elephant tusks, shark fins to tortoise shells. Rarity and high prices per individual mean that the frontiers for extracting animals are increasingly pressing within parks and protected areas, and urgent efforts to stop these micro-frontiers are vital to the near-term survival of a number of charismatic mega-fauna, including increasingly militarized conservation efforts (Duffy 2014). Growing demand for exotic pets in recent decades has also created some new micro-frontiers for extracting and trading live animals that rest upon high prices (at least at the point of final sale) for individuals (Collard 2020).

In addition to the ecological and ethical implications, the extraction and trade in exotic animals increases the risks of zoonotic disease transfer and evolution, as it presents new conditions for infectious bacteria, viruses, and other germs to move between long-term reservoirs (i.e., the animal species where they chronically reside) and new hosts, with opportunities for contact that were previously impossible or far more improbable. The great danger with these opportunities is that occasionally new strains of established diseases can emerge with more virulence and/or transmissibility, and eventually spillover into human populations – risks that should be abundantly clear amid the Covid-19 pandemic, whatever its ultimate origins are determined to be. Zoonotic disease risks are also being magnified by the ongoing expansion of agricultural, forestry, and mining frontiers into tropical forests, which increases the proximity of wild animal disease reservoirs to both domesticated animals and humans, and decreases the possibilities that more virulent emergent strains will simply 'burn out' in the forest before they could spillover into a human host (Wallace 2020; Davis 2020; WWF/ZSL 2020).

The flipside of de-faunation is fast-rising populations of a small number of livestock species, a growing share of which are reared in great densities and brought from birth to slaughter with great speed. Livestock command close to one third of all habitable land through pasture and feed crops and are responsible for the lion's share of the total greenhouse gas emissions associated with agriculture and food (IPCC 2019; Weis 2018; 2013; Machovina et al. 2015). The enormity of this presence can also be sensed in terms of weight with a converse dynamic to that of de-faunation, as livestock now comprise the majority of all mammalian and bird biomass on earth (Bar-On et al. 2018; Smil 2013), and systems of industrial production also bear heavily on future risks of zoonotic disease evolution (Wallace 2020; 2016; Davis 2020).

It is impossible to overstate the urgency of stopping the ongoing advance of all agricultural frontiers in the tropics and resisting future conversions of boreal regions for pasture or crops, both for the future of wild animals and for any prospects of climate change mitigation, given the magnitude of carbon stored in forests, soils and wetlands, and the reduction of sequestration capacity that the conversion entails. But ultimately biodiversity conservation and climate change mitigation require much more than this, and must also involve the ecological restoration of large amounts of land presently devoted to pasture and crops – which demands drastic reductions in global livestock populations and levels of animal consumption (WWF/ZSL 2020; IPCC 2019; Weis 2018; 2013; Machovina et al. 2015).

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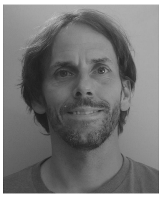

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Cattle Grazing and Forest Devastation in Brazil: Environmental Resources and Territorial Trajectories

Joana Medrado

Keywords: agribusiness, deforestation, Brazil, cattle, environment

Abstract: This article examines the history and present-day dynamics of deforestation and cattle grazing in Brazil's Amazon. It discusses the long-standing strategic alliance between agribusiness and the Brazilian state, as well as the role of livestock grazing in Brazil's developmental ideology of the frontier. It shows how the livestock industry is enlaced with soy production in the deterritorialization and deforestation of the Amazon, as well as the legalized theft of Indigenous lands. It places these Brazilian dynamics into larger international context and analyses the class structure and state capture of Brazil's agro-industrial sector.

Livestock seen in a farmed area near the forest in the municipality of Apuí, Brazilian Amazon. Bruno Kelly/Amazônia Real/09/08/2020. Licensed under the Creative Commons 2.0 license.

The environmental agenda in Brazil is today significantly threatened by overt and covert economic interests. Ailton Krenak speaks of the widespread "myth of sustainability" that (not only in Brazil) adopts a rhetoric allying economic growth and environmental protection, but which only serves to intensify the exploitation of the soil through the legitimation of "sustainable use." "Natural resources for whom? Sustainable development to what end? What should be preserved?" These are the provocative questions that Krenak (2019) asks, showing that the paradigm of sustainability is based on a separation of people from the land such that natural resources come to be managed only by those seeking to exploit them economically.

The new Brazilian forestry code, sanctioned in 2012, particularly the law no 12.727 from October 17, 2012, dealing with protection of native flora, makes use of this rhetoric, taking as its guiding principle for sustainable development the "reaffirmation of the importance of the strategic function of cattle grazing and of the role of forests and other forms of native vegetation in sustainability, economic growth, and in the improvement of the quality of life of Brazilians and in Brazil's presence in national and international food and bioenergy markets."

In practice, it has been impossible to reconcile these demands. But why does the forestry code and its adjacent laws maintain a perspective that is so problematic for Brazil? And what has the role of the livestock industry been in this unending process of deforestation, predatory land use and displacement of populations that live *in* and *from* the forests?

During the colonial period, raising cattle met two main requirements: occupation of territory and fulfilling domestic food needs. It is well known that raising cattle was one of the main vectors of colonization in the American territories. Alfred Crosby argued that the "European quadrupeds" were responsible for the success of the colonial enterprise given that "the advantage of the Europeans over the Indigenous peoples of their overseas colonies was not so much the plants cultivated, as the animals domesticated" (Crosby, 2011, p. 182). While the pastoralists moved further inland, subjecting the original populations to progressive displacement (or colonial assimilation), the economic activity that generated income for the metropolis was the monocultural agriculture occurring along coastal regions. This context of near complete separation between farming and grazing was observed by intellectuals such as Caio Prado Junior, who argued that it was "one of the most important facts and most profound consequences of our economic lives," amongst other reasons, because it deprived "the cultivated soil of one of its most important fertilizers: animal manure," but also because it separated products destined for exportation from those destined for the domestic market (Prado, 2011, p. 197). Therefore, since colonial times, animal rearing/breeding was a factor in domestic (and not international) capital accumulation, and therefore, fundamental for the development of capitalism in Brazil.

This situation changed drastically at the start of the 20th Century, during the first years of the Brazilian republic. In this context, cattle breeding progressively left behind the nomenclature and praxis of "pastoralism" to become "grazing." This was a function of its main product, meat, becoming an exportable agricultural product, and the cattle reared falling under the productive and commercial logic of commodities. At the same time, they continued to be an instrument for the expansion of domestic borders and, therefore, for concentration and accumulation of landholdings. The First World War expanded the sector, considerably increasing the value of Brazilian bovine meat on the international market, (Simonsen, 1932), while also leading to a reduction in traditionally exported products such as coffee and rubber (Linhares, 1979, p. 30).

Ironically, in today's Brazil, it is impossible to consider the livestock industry without considering the current, main monocultural export: soy. They are interconnected and depend for their success on the possibility of expanding landholding frontiers. Therefore, it is also necessary to look at these two remorseless vectors of agribusiness to understand deforestation. In a recent study carried out by scientists in the United States, Argentina and Brazil, it was found that soy farming was responsible for 10% of deforestation in South America over the last two decades up to 2019. Another study from the *Universidade Federal de Minas Gerais* found that in 2018, around 20% of the soy exported from Brazil came from deforested areas (Garcia, 2011). What is curious is that the producers do not acknowledge this data, arguing that their crops are cultivated in pasture areas and not forests. Soy farming however, is frequently preceded by pasture for cattle grazing, in a systematic dynamic of deforestation already widely recognized in Brazil.

The socially and environmentally predatory use of natural spaces and environmental resources is not a recent phenomenon. Its origin is found in the colonial past but it also represents an important moment in the processes of independence and the neocolonial assimilation of colonized countries into the internationalized capitalist system. Important historical watersheds were the law of territories from 1850 – which instituted the land market and formalized immense landholdings – and the legal abolition of slavery in 1888. This freed the enslaved population from their old masters but did nothing to guarantee their survival through access to land. Additionally, the implantation of the Republic in 1889 assisted the projects of monocultural agriculture exporters from Brazil. By situating itself in the international capitalist market as a provider of raw materials and agricultural commodities, Brazil, sovereign through its republican pact, reaffirmed the idea of being an "essentially agricultural country," and of continuing the colonial efforts of advancing frontiers to reinforce the exploitation of the country's "natural advantages."

The livestock industry, which established itself during the emergence of the Brazilian Republic, also inaugurated a new relationship between the agricultural elites and the State. This relationship underwent significant institutionalization and legitimation through the creation of the Ministry of Agriculture in 1909. This became a space of converging interests and a "shopfront for business" for the non-coffee producing agricultural elites who until then only had the National Society of Agriculture (SNA) as the entity representing their interests. According to Sonia Mendonça, this ministry represented the "governmental institutionalization of the interests of non-hegemonic elements in the dominant agricultural class, organized around the SNA and typically identified by historiography as grain oligarchs." By aggregating these sectors, including grazers, the Ministry of Agriculture spearheaded political-institutional action, endorsing the discourse of the "the country's agricultural vocation through the diversification of national agriculture" (Mendonça, 1998, p. 17).

With the foundation of this ministry, there was increasing interference in the politics of the State, creating a near total mixing of private and public interests, between the livestock industry and the Brazilian state[1]. This was exemplified by agribusiness' self-proclaimed role as the savior of the Brazilian national economy, sustained throughout the 20th and 21st centuries with the support of media conglomerates. This ultimately led to the preposterous idea of "agro-pop" in modern day Brazil[2].

Alfredo Wagner Almeida, in one of his clear-headed writings regarding the impact of globalized capitalism on domestic resources, defines the processes of deterritorialization driven by agribusiness as imbued with what he labels *agristrategies*[3]. Agribusiness actors, through their class and commercial representative bodies, especially the Confederation for Agriculture and Livestock in Brazil (CAN), promoted "a range of initiatives to remove formal legal obstacles to the expansion of grain cultivation and to integrate new tracts of land to industrial interests" (Almeida, 2010, p. 102). To this end, intellectual institutions that acted as powerful "think tanks" seeking to directly intervene in the development of public policy were mobilized to create justifications and build policy coalitions, be they national or international agents, in this case a type of "green-colonialism" or "agri-imperialism" (p.113). Further, "in the Brazilian case, the dissemination of a triumphalist vision of agribusiness together with a hyperbolic image of Brazil and its agricultural potential were part of these agristrategies" (Almeida, 2010, p. 110). This vision was grounded in the previously noted understanding, widespread during the emergence of the Republic, of an "essentially agricultural country" whose wealth supposedly lay in open frontiers, replete with empty territories defined by Alfredo Wagner as a "mythical narrative of unlimited lands" (p. 110).

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[1] It is worth noting that social movements' accusation that the rightwing government has been co-opted by private agribusiness interests, was also always a criticism of progressive labor governments leveled by Brazilian liberal conservatives. Labor governments indeed created other institutional spaces to integrate the interests of the small-scale agricultural sector. This was the case of the Ministry of Agricultural Development, created in 2000 and strengthened in 2003 under Lula's government, which especially considered the interests of family agriculture. This ministry was extinguished in 2016, still during the term of Dilma Rouseff of the Worker's Party, but in practice driven by acting president Michel Temer, a central element in the coup/impeachment which took place in 2016.

[2] "Agro-pop" the an expression adopted by an advertising campaign for agribusiness presented by the Globo Television Network between 2016 and 2018, which identified commodities production with the "industrial wealth of Brazil."

The fundamental role of cattle grazing in dynamics of deforestation and deterritorialization through interference in agricultural and agrarian policies operated as follows: forcing pasture land further into forests by provoking (or taking advantage of) fires and advancing into Indigenous forest lands, to make more land available for agribusiness. Concomitantly, actors from the livestock industry in Brazil took advantage of the concentration of lands allowed by policies that legalized land occupations and gave impunity to violence in rural areas, to expand their business[4]. This is central to the livestock breeding complex, which together with mining makes up the main vector for forest devastation and genocide in Brazil today. First comes the fire that destroys the forests and opens up pasture for the livestock, and following that, soy is planted. Within this context, all sorts of arbitrary and violent actions by landholders are carried out and covered up to stitch together these two forms of production.

Another intriguing aspect is that the Brazilian livestock industry, regardless of all the factory farming technologies available, continued to be predominantly extensive (rather than intensive). In other words, the global transformation that occurred with the introduction of meat and derivatives into the international market as commodities, did not end the colonial use of animals for territorial occupation. Nevertheless, to ensure productivity in the extensive livestock system two elements proved crucial: the introduction of exotic foragers and the importation and racial selection of cattle. These elements in turn profoundly altered the environment, due to the homogeneity of the races created, of the grasses adopted, and the paddock fencing used, shaping the dynamics of land occupation more generally speaking.

Although some of the bovine races of European origin were adopted, especially in the colder regions of Brazil, it was the introduction of the zebu of Indian origin into central Brazil, that provided the main characteristics of the livestock for meat production. (Medrado, 2013). These cattle, which today constitute more than 80% of the

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[3] Almeida considers deterritorialization to be "the set of measures adopted by entrepreneurial interests, connected with agribusiness, to assimilate new land into their economic enterprises, especially in the Amazon region. To this end, these interests seek to liberate these lands, both from formal-judicial and political-administrative constraints and from the limitations associated with the presence of ethnic groups or of certain modalities of use of traditionally occupied land…" (Almeida, 2010, p. 116).

[4] Recent proof of this violence and of violence as politics, was the photo, published by the government's Secretary of Communication, marking the 'Day of the Farmer', showing an armed man in the middle of a field. An article published in the newspaper "Correio Braziliense" on the 28/07/2021, reports that the "Atlas of Violence in the Countryside, undertaken by the Institute of Applied Economic Research (IPEA), shows that between 2007 and 2017, homicides in rural areas increased by 75.4%, nearly double that observed in urban areas (40.6%). The largest increase in homicide rates was observed in areas of rural occupation (+10.2%), in Indigenous territories (+15.9%) and in areas belonging to the Legal Amazon (+18.7%)."

Brazilian herd, were imported and disseminated due to their hardiness, compatibility with the national ecotype (climate and epizootics) and adaptation to free range systems. The nationalist ideology of miscegenation, connected to the eugenic discourses widespread in Brazil in the first half of the 20th century, was mobilized to defend the selection and racial purity of the herd and the science of cattle breeding. Beyond simply reflecting advancements in science and zootechnics, the racialization of the bovine herd in Brazil structured and empowered the new rural elites who controlled the genealogical registration (patent) of the bovine breeds and policed the market for breeding – gate-keeping the opportunity for other breeders to enter the international meat market[5].

The reproduction of extensive grazing as the predominant agribusiness model in Brazil is underpinned by improvements to the bovine herd and management of grasses for foraging. Strategies in both cases seek to guarantee the necessary hardiness for raising cattle on pasture, cutting production costs while counting on the ever-expanding availability of land. To secure this model, changes to legislation are made, capitalizing on and driving the political instability in Brazil and ceaselessly maintaining the discourse of agribusiness as a national savior. At the same time, the genocide (and/or ethnocide) of the Indigenous population and the seizure of their lands, as well as the exclusion of the black population from legal ownership of their possessions continues.

The foundational pact between the Republican State and agricultural exportation is one of Brazil's strongest national characteristics. This pact includes the elaboration of diverse legal mechanisms that allow for the regulation of areas of the Union invaded by agribusiness interests, keeping in mind that Brazilian commodities always relied on deforestation and deterritorialization of communities traditionally connected to the land, to expand their "natural" territories[6]. In this sense, raising cattle on pasture has been a strategic activity.

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[5] Today, bovine meat exportation occupies sixth place out of the main Brazilian exports, a position maintained for some time now.

[6] While I was writing this article, the PL (legislative proposal) 510 from 2021 was being voted on in the senate. Nicknamed the land grab PL, it extended the size of an occupied area that could be legalized, specifically altering certain clauses in the Law 11.952/2009, which codified the legalization of the occupation of lands situated in the so-called "Legal Amazon." Unfortunately, this project was approved in the Chamber of Deputies and went through for evaluation by the Senate.

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Fieldwork in the Poultry Capital of the World: An Interview with Carrie Freshour about her work on Race, Place, and Labor in the US South

Hanne Cottyn and Sithandiwe Yeni

Keywords: poultry, fieldwork, labor, abolition, structural racism, carceral geographies

Abstract: Hanne Cottyn and Stha Yeni of the CFI spoke with Carrie Freshour about cheap meat, workers' care and resistance, and fieldwork in Georgia, USA, which has been named the "poultry capital of the world." The article is a lightly edited transcript of their conversation from 5 August 2021.

Aerial view of poultry processing plant in North Georgia. Photo credit: Kwamé Kang, 21 July 2021.

Q: What brought you to the "poultry capital of the world"? Why did you become interested in studying the global meat industry, and in Georgia in particular?

A: I was raised in North Georgia, in a rural place called Adairsville, where poultry farming was really big. Many people, including my parents' friends, were contracted poultry growers, so they had chicken houses, which dotted the landscape where I grew up.

I graduated in 2009, which followed on the global food crisis. It made me ask questions about food justice, access, and race, and their implications for people not only in the global South, but also in the US. North Georgia just seemed like the ideal place for this work, and a way to go back home, essentially.

For my research, I trace the longer history of the industry. This relates to the abolition of slavery, how plantation elites reorganized themselves through land monopolization and racial violence. This is what W.E.B. Du Bois (1935) calls the counter-revolution of property. This is also about how elites reinstated the racist exploitation of workers as a pillar of plantation agriculture to the region. All of these historical questions –questions of place and questions of futures- brought me back to Georgia.

Q: Can you tell us a bit more about how other commodity frontiers have shaped the U.S. South into the heart of the global poultry industry?

A: A lot of folks might start with the history of the innovators of the industry like Jesse Jewell [a pioneer in the poultry industry in Gainsville, Georgia], DW Brooks [who led Gold Kist Inc., in Athens, Georgia], and Don Tyson [the son of John Tyson, who established Tyson Feed and Hatchery, Inc. in Arkansas in 1947, now Tyson Foods]. They vertically integrated the industry around the 1950s. They are often celebrated for being able to combine their ownership of feedlots or their ability to acquire fertilizers, and their ability to transport chicks and eggs to farmers across the different parts of the South. That's one way to think about the role of these different commodity frontiers within this region. But taking a longer historical approach, questions come up around the role of agricultural production within the Black Belt South[1] (in the emergence of the global poultry industry), and the relationship of the transatlantic slave trade to the production and expansion of cotton across the region. In my field site and in Georgia, cotton was literally transformed into the poultry industry.

My analysis draws on Clyde Woods' (2017) work, in thinking about the plantation bloc in this region, understanding how power is distributed, and making and remaking of what we call the South, and particularly the Black Belt South.

In Georgia, I focus on D.W. Brooks, who went on to advise many US presidents, and was the director of the UN World Food program for a number of years. He was foundational in growing out and establishing the Cotton Producers Association of Georgia. The association was initially formed as a client cooperative for farmers, and then directly transitioned into poultry. By understanding that connection, I think we can connect to other people's work on the longer history of cotton in the region. It makes visible that these aren't just new industries that were supported through innovation and transformation of entire ecologies, but that they are traceable to this longer history of the attempted commodification of people through the transatlantic slave trade.

Q: What role does fieldwork play in unpacking these labor dynamics and their historical and global connections?

A: Between 2014 and 2015, I did ethnographic fieldwork at one of the state's largest poultry processing plants as a regular line worker for six months. Alongside this work, I also recorded oral histories with women workers and their families. I initially thought that telling them about my six months at the plant would help me to show that I have some understanding of the work, and maybe they'll respect that a little bit. But most of them kind of laughed. They were like "Oh your little time at the poultry, you couldn't last, could you?"

In addition to ethnographic work, I conducted archival research, and began what has become an ongoing collaboration with organizers, community leaders, and the children of poultry plant workers, which led to this documentary short that we are working on now.

I started fieldwork really focusing on this question of labor, and labor at the point of production, but also thinking with feminist Marxists about social reproduction. I think that in some ways I had some blinders on. I was not thinking nearly enough about the role of policing and criminalization, about expanding carceral geographies, which Ruth Wilson Gilmore (2007) makes us all pay attention to, and how these forms of policing are of course place-based and tied to social relations around housing, development and jobs within this field site. The fieldwork pushed me to think more about connectivity to other sites that attempt to produce and discipline a certain people and place that I was blind to in my obsession with labor and work.

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[1] A region in the American South characterized by thick, dark, fertile soil that became the centre of slavery in the USA.

Q: Who are the workers in the plant, what is the gender set-up and the age set-up, and where did they come from?

A: To give you a bit of context, there are two sides in the process. Evisceration is the first point of production, where the birds are slaughtered, feathered and viscera are removed. It prepares chicken for deboning, which is a phase of further processing, where it's cold, refrigerated. Across the two sides there are three shifts and 1600 workers in all levels of different positions. When I was there, there were four lines; 24 workers on the line. It's mostly women on the line, I would say 90%. Men who did work in the plant were mostly chicken catchers, live-hang, maintenance, and supervisors. There is a clear and historically gendered division of labor. In terms of age, most of the workers were in their 30s and above, and a lot of senior workers in their 60s and over. In this plant in particular, there's the saying that if you're Black in Athens, you know somebody who's worked at the poultry plant. Some workers told me that they had a poultry family because many generations have worked in the plants. I think this is changing now, but there is this deep and long relationship to the poultry for what people call Black Athens.

Q: When doing fieldwork, you start with some ideas and expectations, but you might find things that totally surprise you. Are there any unexpected findings that have emerged from doing fieldwork?

A: Yes, lots of things! I think that's the exciting and challenging part about doing research with people. Gilmore pushed me in so many ways. She reminds us that, "you find the answers to the questions you ask." I think I entered the field asking a set of questions that weren't the questions that needed to be asked. Many of the immigrant rights organizers, student organizers, labor organizers out of Atlanta I talked to before beginning fieldwork in northeast Georgia talked about the role of undocumented immigrants, largely Latinx [gender-neutral reference to people of Latin American cultural or ethnic identity in the USA] workers, in these plants. That was the racial transformation I thought I would focus on. That's also the story commonly presented in the media, even media that advocates worker rights and pushes the narrative of the exploitation of workers in this industry. But when I got to the region and was employed at the plant, the majority of the women I worked alongside were Black women, and this continues to today. There's a small pocket of women who worked for generations, since the 70s, and then there are some workers who worked anywhere from six to twelve years, and then there are many, many workers who worked less than two years and sort of rotated, very temporary. The role of Black women to this industry is largely erased from public conversation, and people's public perceptions of these places.

Q: How does fieldwork give insight into practices of resistance to contest the industry's disciplining of labor?

A: The plant ethnography really allowed me to see small forms of resistance. I don't mean small as in insignificant, but on a smaller scale than for instance from unionization. This plant in particular had a union but it was very weak because of Georgia's Right-to-Work Law[2] under which not everyone has to pay dues and or be a part of the union for the plant to be unionized. But there are other ways to think about how Black women on the line really took care of one another, and also resisted the kinds of bodily degradation that the plant requires. I think of Robin D.G. Kelley's (1996) work on "infrapolitics" or what James Scott refers to as "everyday resistance.[3]" Robin Kelley talks about foot dragging and just slowing down the pace of work. This is a way to resist the discipline of labor, but also the conditions of work. I tried to think about what I saw happening on the line and how Du Bois thought about abolition. He argues the abolition of slavery

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[2] https://aflcio.org/issues/right-work

[3] Scott, J.C. (1986). Everyday forms of peasant resistance. *The Journal of Peasant Studies*, 13(2), 5–35; Scott, J. C. (1989). Everyday Forms of Resistance. *The Copenhagen Journal of Asian Studies*, 4(1), 33.

Poultry houses out in Jackson county, GA. Photo credit: Carrie Freshour, 12 August 2021.

was also the abolition of the conditions of work. I understand these practices as connected to larger ideas and ideologies about work, especially against the backdrop of the plantation.

Another form of resistance is absenteeism as ways in which people are able to move in and out of the plants. To me, that speaks to James "Jimmy" Boggs' statement[4], who says very simply "a job ain't the answer" when he's talking about automation and the future of work. People aren't necessarily staying long enough to improve the conditions of work in a traditional sense through union organizing. Instead, people make life work in other ways, outside of this plant job, like different side hustles but also with unemployment or disability, and/or social security insurance. A normative, white supremacist way to look at this is to conclude that (racialized) people are lazy or people are trying to evade hard work. In reality, these strategies express a broader critique of the shitty jobs that are offered to working class Black folks in rural places, and working class people in the US South more generally.

If "a job ain't the answer," what does this actually mean for labor organizing and social movement organizing? What might the answer be? What does freedom look like in a racial capitalist global economy? I am thinking of movements for land and movements to cooperatively own one's labor that are also emerging in this region.

Lastly, there is the question of what really is the fight here. It is true that companies like Purdue Chicken, or Pilgrim's Pride, or Tyson Foods are not going away. They might automate the work and then there will be generations of unemployment, as we saw in the auto industry. People moving in and out of the plant or foot dragging and slowing down production in small ways tells us that the conditions of work are not viable and that there have to be alternatives. This is not just about living wages, but about a way of living, potentially a guaranteed basic income alongside forms of organizing that are continuing to happen inside the plants.

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[4] Jimmy Boggs was a Detroit auto worker from Marion Junction, AL and lifetime partner/collaborator with Grace Lee Boggs. He writes about the role of automation for the autoindustry and beyond in *The American Revolution: Pages From A Negro Worker's Notebook* (1963). New York: Monthly Review Press, 15, 3.

Q: What is the kind of backlash from capital to the way workers are resisting? Generally, when people resist, they're targeted and people are divided. Are workers being intimidated in any way?

A: Capital's backlash within the industry goes back to the 1950s when white women dominated the plants as the main workforce. They actually organized in Georgia in 1954. Jesse Jewell, who was a key industry leader in Gainesville, Georgia, directly pushed back. There was a case taken to the NLRB [National Labor Relations Board] because of their anti-union efforts back in the 50s. So this anti-labor and anti-union push-back from poultry capital goes back to the founding days of the industry.

There have also been intentional efforts to displace Black labor through the recruitment of undocumented and immigrant labor from the US Southwest and outside of the US, sort of as a response to Black worker lead organizing. That was an initial backlash beginning in the 1980s and peaking in the 1990s. Once these workers, largely Latinx immigrants, began organizing, there was a very clear anti-immigrant backlash, at least within my site. The backlash responded not only to local plant organizing, but more broadly against immigrant rights organizing across the country.

Capital in Georgia responded with a combination of the expected xenophobic anti-immigrant organizing and actions alongside carpet and poultry industry leaders to pass legislation against what they call "illegal" immigration. In Georgia, there were mass layoffs within my fieldsite in 2008, 2009, 2010, that continued until HB-87, a massive anti-immigrant bill, was passed in 2011. But for those small, everyday forms of resistance, it's difficult to organize a backlash at the industry level. However, there are ways that they've worked to discipline absenteeism and attempts by workers to slow down the line which are tied specifically to the sort of physical spatial layout of the plant and the production line itself. One of the most shocking things is probably the point system, which means that workers who miss a day, or late evenings or weekend work days, get a point. After a number of points, they're fired, no excuses or negotiations, even during the global COVID-19 pandemic.

Another response targets workers' survival strategy of moving between different plants and between different low wage jobs. People I interviewed who worked in the 90s and 2000s were going from fast food to the poultry plant, to home healthcare, to side hustles, depending on their bodily and financial needs. The plant was seen as some quick, hard, but fast money. As little as it pays (currently US $ 12-13 per hour), it pays the highest among these kinds of jobs. The plant here instituted a policy to stop these practices. If you have worked at the plant twice before, you couldn't

Life in a Snow Globe
I Speak for th
AWARD
Dynamic Dancer
Andrew Dye

Wall in Diane's home honouring family members and celebrating sons' achievements. Diane worked in the plant 5 months, and was applying again at the time of interview. Her mother and several family members also worked in various poultry plants across the region. Photo credit: Carrie come back. Now that demand for workers has increased, because of COVID-19 and briefly expanded unemployment benefits, they have relaxed this policy.

Q: How has the current situation of global pandemic and the way the poultry industry is responding to the pandemic transformed the processes you are studying?

A: With the COVID-19 global pandemic, people began paying attention to the meat industry, in this country and globally. In March 2020, some of the first deaths were registered within the industry at the Tyson plant in Camilla, Georgia. All three women who died of COVID-19 were Black women, mothers, grandmothers, aunties, family members, community members who had collectively worked at the plant, around 70 years[5]. This caused a surge in attention and everyone suddenly cared about these places, because they were hotspots. Around the same time Donald Trump issued the Defensive Production Act and ensured that workers remain in the plants as these are essential industries that should continue operating. He received active guidance on this decision from the National American Meat Institute (NAMI). There's really great investigative journalism documenting that communication in ProPublica[6]. Scholarly attention also increased sharply, and then kind of waned. We see how the problems that occur at these plants continue despite us -scholars- telling and retelling the trauma, the exploitation, the degradation of this work and of people who work there.

Q: We've come to the end of our conversation, is there something you would like to add?

A: I guess I'd just like to reiterate the quote by Gilmore, that, "we find the answers to the questions we ask," to think about what kind of fieldwork matters. The big thing for me, and for students and other scholars working on poultry and livestock production, labor exploitation, and food sovereignty, is what are the stories that we can tell, or the discussions or questions we can raise, to actually move the needle?

I am just stuck because I think so many of us who work on the meat and poultry industries have told this story in a number of ways. Many people like Raj Patel and Jason Moore, Tony Weis, and Mindi Schneider have been really influential in thinking about the ecological devastation of these industries. And yet, what will move the needle when we know that poultry is terrible for the environment, for consumers, and for workers? How do we tell a different story? How do we build with people doing that work?

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*All photos provided by the author.

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From Tale to Tail: Unwinding the Twisted Life Story of *PIG 05049*

A Conversation with Christien Meindertsma

Maarten Vanden Eynde

Keywords: animal welfare, bio-industry, pigs, globalisation, food chain, design journalism, product design, memory, remembering

Abstract: *Pig 05049* is a book and research project by Dutch designer Christien Meindertsma that chronicles the many consumer products that were made from a pig called 05049. The book offers an insightful look into how this one animal, a single source, provides raw material for a vast number of everyday objects. Meindertsma's clinical presentation of each laboriously researched object, page by page, organised by body part, follows the progress of the dissection of *Pig 05049* and the subsequent use of each part. Some products, she found, are expected and familiar, whilst other diverge dramatically: ammunition, medicine, photo paper, cigarettes, conditioner, and bio diesel. *PIG 05049* is currently in its 5th edition. The book won the Dutch Design Award in 2008 and the Index award in 2009 in the category *Play*. The article is a lightly edited transcript of a conversation between Commodity Frontiers editor, Maarten Vanden Eynde and Christien Meinderstma in September 2021.

PIG 05049
1:1
CHRISTIEN MEINDERTSMA

Maarten Vanden Eynde: Thank you very much Christine for giving me your time to participate in this conversation. We are mainly going to talk about PIG, a project you produced already in 2007. At the time of the release of your publication I was still living in the Netherlands, and I remember reading in the newspaper that there were more pigs living in the Netherlands than people. I remember being very surprised about this but in retrospect it's strange because why wouldn't there be more pigs? Does it have something to do with the human tendency to put ourselves on top and this human arrogance to call ourselves homo sapiens sapiens, the double wise man? We named an entire geologic era, the Anthropocene, to human presence on earth, so maybe it has to do with that, but otherwise I think most animals are out numbering humans. In total there are at least 100 times more pigs than humans on the planet. So, I was just wondering if it has something to do with human nature that we want to dominate other species.

Christien Meindertsma: Yes, I understand your reasoning, but I think in this context for me personally it is a little bit different. The reason I find it odd is that we never see them even though they out number us. That is what is strange, that there are so many pigs and a very big industry, but they are invisible. Also, the massive number of pigs is not a wild representation of the species, but reflects those being kept as a product even though they are very close to humans and very intelligent. For example, the heart valve of a pig you can use as your own valve. They are raised in such closed systems and the only time you see a pig is when they are on a truck. Or at least the only time I see those pigs is when they are on their way to the slaughterhouse and you see their ears sticking out whilst you drive on the highway. It's so sad because it is their only time outside. So personally, I think that is what is very strange. The idea that you speak about placing ourselves on top of the ladder is not to do with the numbers of the pig but more for the fact that we think we can dominate them as if they are products and this is such a strange normality that we decided on in society. Of course, there are people arguing against this, vegetarians, and vegans, but most people are caught up in this chain system and conform to this as normality, when it is completely anything but normal.

MVE: I totally agree, and then you would expect that because we know about this that when the pig is made visible again through the likes of your work and animal rights activist who visualise these conditions that the animal endures that this would change our behaviour, but it seems we remain uncaring. It's like the blood minerals of which we all know now that they are part of our smartphones, but that doesn't change our behaviour to technology. Similarly, with fossil fuels we know that it causes global warming, but we continue to drive cars and fly planes. What creates this numbness that although we know that we are mistreating animals and effecting our planet, why can't we make this shift towards change?

CM: I think about this a lot, I think it depends a little bit on the subject. I do eat meat but very little, I am not against eating animals. I think if we consume a small quantity of meat, pay a fair price, along with treating the animal well it could be possible. Yeah, I do drive a car, but I only fly when it is really necessary for work and that means I haven't been on a plane in two years which I think is great. These are personally easy things for me to go without because I don't care for flying and if there was no meat, I would be ok without it. But for instance my car is quite important for me as it enables me to work on a personal level with a lot of people because I can visit them easily as they are often in complicated remote locations. So being without a car would hurt. I think everyone has their own personal relationship to processes that they can't be without and methods they can let go of. But then with the Corona Virus I find it so interesting to think about Schiphol airport during these last few years. Whenever I was there I though about how crazy it was, all these people that are there all the time flying. But now people are not there anymore, and you see that it is possible to not fly. What people missed the most was job availability and not seeing others, but not this crazy flying that we used to do. So, I think that's an interesting thought that a virus can completely and so quickly change our behaviour in a way that we never thought was possible.

SKIN

30

SKIN → COLLAGEN → GELATINE → CHEESECAKE

Home made cheesecake mixes contain gelatine in powder form that functions as a binding and gelling agent.

CHEESECAKE

2 578 g

BONES
MEAT
INTERNAL ORGANS

MVE: This was however a forced change in our behaviour. We didn't decide ourselves, knowing the implications of flying, that we should start to fly less. This virus came in and completely created a wall in front of us, showing that we couldn't continue.

CM: Yes, it shows that we can make enormous shifts with lots of people that we never thought were possible. In this case I think it could be super inspiring if we all decided together to eat meat once a week and we could collectively make the change. It would be so easy and have the results that we want.

MVE: So why can't we or why don't we? We know that this would be one of the easiest solutions for a lot of problems related to the meat industry.

CM: It's clear that it is a difficult question. What people say in surveys is not corresponding with the decisions that people make in the store.

MVE: Did it change for you? It's been almost fifteen years after the book, did this change your behaviour towards meat, and also towards wanting to know what is inside any product? Are you more conscious of ingredients and where they come from?

CM: Yes definitively, all my work is about that. In my daily life I'm a normal person with a family. Before I had children it was much easier to not shop at a store or ignore things. Now, with children, when you decide that you don't want to have a large mountain of plastic in the house it not that easy anymore. It just kind of happens. You are a part of the fabrication of daily life, and I would love to be more meticulous about it, but then I would need to work less because it's a serious task if you want to get away from the system of normal shopping. You have to make a serious lifestyle twist to change that.
But in my work life it is different. After the pig book I was quite sad about this pig story and so I decided to do a similar project but then with a material that I wanted to support instead of move against and so I made a

BONES

BONES → COLLAGEN → GELATINE → BULLET

In the production of bullets, gelatine is used to help transport the propellant,
for example gunpowder or cordite, into the bullet.

55

BULLET

7 588 g

MEAT
INTERNAL ORGANS

project with flax, the crop linen is made with mainly in Belgium and the Netherlands and that was very nice. It was a similar project but moved in another direction. Linen and flax are really a topic and material that people are choosing to work with and it's great to see. I am diving deeper into these sorts of elements, so it is similar to the pig book but now more towards the general system, now I am more interested to explore the longer chain of production. To see how a product changes from one thing to another and how this cycle works. I think the pig book is very much a part of my way of working but I don't really enjoy repeating myself so I wouldn't want to make a similar project about another animal, like a chicken.

MVE: I was thinking about whether a pig in that sense is more special or more used in different ways than a chicken for instance. Is it something particular about the pig that means there are so many possibilities of pig products? Or could you do the same thing with a chicken?

CM: Yes, you could. The first idea was to follow a cow but then with some logical reasoning along with the advice from a woman working in the meat industry, we concluded working with the pig as the subject would allow for a broader product range. Cows are used less as they suffered from the mad cows disease at that time, so the gelatine from cows was not used, therefore influencing fewer products. I thought the subject of a pig was interesting because you rarely see a pig in the landscape, but you are often able to see the cuddly looking cow in the field. Pigs are also very unloved, there is a culture that thinks they are a very unclean animal. Also, pigs are really close to humans, so there are a lot of reasons why they are interesting. I think a chicken would probably have less uses but would be super interesting as well. I would love to do a project around chickens but then I wouldn't make a book. It would be a different kind of outcome.

MVE: There are many more chickens than pigs (250 billion chickens worldwide) making chicken bones one of the possible leftovers to serve as a geologic marker that marks a transition between the Holocene into the Anthropocene. I found it shocking that they are so present all around the world that they will remain in the geological layer that we are constructing. But the other thing that I found very interesting is that pigs are so much closer to humans than cows or chickens. Now you already mentioned the heart valve and what I also understood is that scientists breed organs in pigs that can then be used for human transplants because they are so close to us. So, it is again another kind of astonishment, why don't we treat them better because they are so closely connected to us and indeed super smart? And recently there was the victorious Urgenda lawcase, the first time a government (The Netherlands) was held accountable for a lack of action against climate change. Something had to be done. There were many different options on how to immediately lower methane and nitrogen output and the first idea was to look at animals, and have less of them. However, the protest against this was so severe that in the end the Dutch government opted for a construction stop of buildings and they lowered the maximum speed on the highways to 100 just to make sure they could keep the same number of animals. So I wondered how they can prefer the option of reducing buildings and driving speed instead of having less animals or better conditions for them to live in. It seems so strange. When confronted with the opportunity to do something about the number and quality of livestock, we don't.

CM: One of the things I find interesting is that a lot of farmers feel that their country is not proud of them, so they have these stickers that say 'Trots of de Boer' (Proud of the Farmer) and whenever I see it I think this is very sad that they have these stickers. They need to almost shout at us to be proud of them because they are making our food. As a general reflection we aren't aware that we are paying too little money for the work that the farmers are doing, and we are defiantly paying a lot less than we were paying fifty years ago. On the other hand, they are also caught in a system that is so efficient they must continue to make these large productions to survive and thus become hostage in this system. I think every farmer would love to produce less for more money, but they somehow don't have the power to tell the system to be proud of them and that the money isn't the main issue. Even though it should be about the money because we should be paying more. This is a very interesting scenario in a conversation that we are not having together as a society.

MVE: Maybe that has something to do with globalisation because we used to pay more as the accessibility was less. It was more difficult to have pigs come from China which is where most pigs are now coming from. In order for local farmers to be competitive the government is subsidising farms to a level that is also not sustainable because it is then also too expensive.

CM: We are all caught in this complicated web where the rules of the game are changed because it is a global game and there are subsidies. This was why I tried to make the book as neutral as possible in terms of its opinion. If you choose sides within the layers of the story you also flatten the story. Of course, I am not always agreeing on how people interpret the book because it can be read in many different ways. One perspective could be that its positive that the pig is used for many different products, or you can think that it is horrible that the pig is in all these products that we use. Everyone who makes a different product in the book has a different story and I think looking back I am glad that it is as neutral as possible because I didn't want to condense a story that has so many perspectives and angels to it.

MVE: In that sense it is generous to leave it up to the reader to draw their own conclusion whether the use of a pig for a product is ethically, morally good, or not. I saw the book as a kind of monument, describing in a very neutral way what is made from the pig, a monument for the both the pig and strangely enough also the humans because we managed to make all this products. It made me think that we are successfully using every part of a pig which is also something we have always done as humans, to use an animal to its fullest capacity. We haven't changed much in how we deal with an animal so it has exactly this double feeling of goodness that we use every part of the animal but then on the other hand it is really cruel. A nice thing is that it also makes the same analogy as the book does: the pig is also shouting "be proud of me," look at what I am allowing you to make from me.

Perhaps in that sense your book is the bumper sticker of the pig saying "be proud of me."

CM: This is why I find the farmers sticker 'Proud of the Farmer' conceptually so interesting. Someone is saying: be proud of me! It could almost take the form of a one sentence play: be proud of me for what I am doing. Personally, I think yes, I am very proud of you farmers but are they proud of the person who makes their clothes or any of the other products you may own? Farmers are equally caught up in this commodity system and there is this same level of questioning the amount of respect we have for workers. Can a farmer also be proud of the person who comes to deliver a cardboard package who is equally not paid in a fair way or who doesn't have fixed working hours? It is through this 'Proud of the Farmer' sticker that I have all these thoughts. Ok, we should be proud of you for making the food but are we equally as proud of the underpaid delivery driver? It reflects on a much larger problem around products and production and what we pay for them. I understand them but they are as guilty as we are with the other professions that work in production which in turn makes it so difficult to solve. If it was easy to solve for the farmer, the model could be translated to other professions where products are produced. There are farmers in Holland, many people who are trying to change their way of farming, many people who are willing and enthusiastic to have farms that are more circular where all the crops and animals are in a balanced system the way it should be. But they are confronted with the issue that banks don't want to lend money for these alternative systems. So even when you are a farmer, and you want to try and make a change it is really difficult.

MVE: Totally true. I remember being an early user of the Triodos Bank in the Netherlands, but still today in other countries like Belgium, Triodos exists only as a saving bank. The other banks won't allow for Triodos to use their cash machines and act on the same level as them because of the competition. As soon as you want to change something in the system, it fights back because ultimately it doesn't want to change.

CM: This is what makes it so difficult to initiate the change we were talking about in the beginning. But I don't want to be super negative about it because we can make really big changes. I am now working on a project around wool. Nearly all of it is being thrown away. There are companies that make synthetic insulation materials and they are vilifying the sheep, addressing them as being a very polluting animal. But the sheep is assisting in another way, by grazing the land. This lack of transparency of the true costs and benefits is used by opposing companies to only read into the calculations that they want to use for their argument. It is in the calculating system where this miss-information takes place. And the same with our farmers, they are all the time fighting with ministers over all these kinds of calculations that are bigger than we can understand which makes it then difficult to change.

MVE: So is that a project you are currently working on?

CM: Yes I returned to wool because I graduated with One Sheep Sweater eighteen years ago. It was always my dream to make an industrial or semi-industrial product from local sheep. Wool is deemed worthless and now eighteen years later the wool is still worthless, but the spirit of the times have changed and there are many people who are willing to invest on all different levels to think about ways not to throw away the sheep's wool. The city of Rotterdam has given me six thousand kilos of wool from the 'Rotterdam flock of sheep' that is grazing the city.

MVE: I didn't even know it existed, the 'Rotterdam flock' sounds great.

CM: Yes, it really is. When you drive over the Van Brienenoord Bridge of Rotterdam you can see the sheep standing there on the dike. The wool from these sheep was always thrown away and the shepherd decided to act and asked the city council if they had a plan to avoid throwing away this wool. A lot of people were asked if you were given this wool what would you do. I presented a plan and they said you can have it, go for it. It has now been one year since that point and the wool is being sent off to become all different types of sample products. It has been washed, combed, cleaned and separated into different

BONES
MEAT
ORGANS

SKIN

SKIN → COLLAGEN → GELATINE → WINE

In the production of wine, gelatine can be used as clarifying agent. The gelatine reacts with the tannins and bitter substances and absorbs cloudy elements that can then be separated from the drink.

35

WINE

2 613 g

kinds of qualities. The highest quality will be donegal tweed which is the most beautiful tweed there is. The lowest quality will have plants growing on it. There will be uses for insulation, it will be a whole range of beautiful things that can be made from the sheep's fleece. It really feels like the crown on my work to receive this assignment. It is such a nice statement to make, and it is so nice not to be bound to the economics of it. We will calculate the prices of course, but it is not about that. It is about showing possibilities and then choosing one that can hopefully overrule the current system where the wool is just burnt. We need to invent a way to use this wool better than to burn it because it is not just the Rotterdam sheep's wool that is being burnt. There is so much wool being discarded in this way, it is so sad. The fact that it is still allowed for high class brands like Hermes and Channel to continue to burn their products so that the market value doesn't devalue, now that should be a crime. To shred a new product just because otherwise the market value goes down is just so disrespectful.

MVE: Oh yeah yeah yeah, and it reminds me of inbuilt obsolescence, something that started a while ago to make a product break down at a certain moment. I think that too should be a crime. But it's nice that you somehow shifted after the book with pigs to turn toward something positive showing good things you can make from something not being used, compared with looking at bad things that are being produced from something. It's as if you made a switch to positivity and change from stagnation and resignation.

CM: Yeah, it is also like the pig book in leaning towards journalism, design journalism, which is a nice way to research because I think you find out different things. For example, with the flax project because I had ten thousand kilos of flax, you find out very different things than if you just did research in language form. You see a totally different world. Then with the pig book it stayed very much research in language, and I think as a designer that seems too easy to describe something but not give a solution in your own practice. I am product designer, so to just

FAT

FAT → BONE FAT → FATTY ACIDS → PAINT

Fatty acids derived from pork bone fat are used in paint as an agent to improve its dispersion, emulsification and settling properties. It also adds a glossy sheen.

161

PAINT

95 000 g

MIS-
CELLANEOUS

point at another product that I think isn't good enough is not enough. I should be the person trying to improve it, not just point at the person who I think is doing it wrong. So that is the feeling I had after the book, that even on a small scale, I would try to add something positive in a real situation, like baking a really nice bread.

Maarten Vanden Eynde is a visual artist and co-founder of the artist run initiative Enough Room for Space. His practice is embedded in long term research projects that focus on numerous subjects of social and political relevance such as post-industrialism, capitalism and ecology. Since 2020 he is a PhD candidate at the UiB / University of Bergen in Norway focusing on material traces that could represent human presence on Earth in the far future.

*All photos provided by Christien Meindertsma.

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Livestock, Colonialism, and Commodity Frontiers in the U.S. Southwest

Andrew Curley

Keywords: Navajo, livestock, settler-colonialism, commodity frontier, decolonization

Abstract: Commodity frontiers are a useful way to think about the expansion and rearticulation of capitalist modes of production across the globe. A weakness of this approach is to miss deeper histories of colonialism and domination at the sites of the metaphorical frontier. This commentary discusses Diné relationships with sheep to think through how livestock often contains older relationships that transcend colonial limitations.

Photo: Donovan Shortey, www.navajophotography.com, 2012.

The commodity frontiers concept euphemizes a kind of violence on people and the land. Frontiers are a violent, world-making process. They refer to the destruction of past worlds, brought into the control of new colonial logics. Much commodity frontiers scholarship largely takes its prompt from Jason Moore, who imagined frontiers as a metaphor – as a new space of capital incorporation of people, places, and their things (Moore 2000).

In this article, I want to push back against the metaphor – to say frontiers are literal sites of struggle.

For the Diné people in the southwestern United States, frontier-making was a violent process. It involved targeted racial killings, harassment, theft, and reprisals. The frontier was initiated as an abstract state making process – lines on a map with purposeful exclusion of people who were already there. Frontier making was a disciplinary project involving the use of the United States military, coordinated attacks against civilians and their infrastructures, and forced internment. In short, frontiers were plans of land dispossession realized through the barrel of a gun.

Focusing too intently (and abstractly) on the commodity and not the places where commodities are produced can elide questions of settler expansion, colonialism, and domination. Let's consider one site of colonial struggle as experienced between the history of two nonhuman "commodities," cattle and sheep.

Although Spanish brought sheep to the southwest (Weisiger 2011), the sheep didn't like their colonial masters and moved to live with the Diné, becoming an integral part of life. Diné and sheep built a reciprocal relationship. Dibe, the Diné word for sheep, were dependent on humans for survival. They needed guidance to know where to eat, drink, and sleep. On their own, without the protection of humans, Dibe had little chance against the area's natural predators, wolves, bears, and coyotes.

Diné people brought Dibe into their lives and expanded territory to fulfil their needs. It was a human-animal space making process distinct from the Spanish land grant system that dominated notions of land tenure in the Rio Grande Valley following the conquest of New Mexico.

Cattle, on the other hand, unmade and remade Indigenous geographies. Cattle destroyed worlds, decimated species such as the bison, and led to range wars that left Indigenous peoples on poorly resourced reservations.

Today's commodity frontiers analogize the colonial-capital drive of westward expansion. Once the lands of the west were conquered, they were turned into cattle range – feeding an expanding diet of meat consumption in settler communities through expansion of rail, technology, and markets (Cronon 1992, Specht 2019). Diné range land was circumscribed, and reservation boundaries strictly enforced (Kelley and Francis 2019).

While range land expanded in the southwest and rivers were dammed, desertification was blamed on Diné sheepherders. New Deal policies of soil restoration, a scientific approach to range management, targeted Diné sheep. During the 1940s, soil crop scientists imposed grazing restrictions and fixed boundaries on family's grazing lands. Historian Richard White suggested livestock reduction was responsible for the Navajo Nation's (colonial name for the Diné people) economic dependency today (White 1983).

With the imposition of U.S. style grazing restrictions, came a change in how Diné people understood the land and Dibe. Dibe weren't a companion on the landscape, but an object for consumption, abstracted to the idea of carrying capacity. The Commissioner of Indian Affairs imposed grazing districts on the tribe in 1943, translating carrying capacity into sheep units.
Range technicians estimate how many sheep the range can support. The sheep, as an abstract consumer of range, becomes an equation against the consuming capabilities of other range animals, namely horses and cattle. The ratio of sheep to horses is 1 to 5 while cattle is 1 to 4. This means 1 horse is worth five sheep. If the land has an estimated carrying capacity of 10 sheep, this means the land can alternatively support up to 2 horses[1].

Today cattle is a dominant industry in Arizona. It accounts for 73% of total land use and 98% of Arizona's agricultural land. In 2011, cattle sales were $800 million[2]. In the Navajo Nation, sheep are still dominant. In 2012 USDA counted almost 51,000 heads of

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1 https://www.ecfr.gov/current/title-25/chapter-I/subchapter-H/part-167.

2 https://economics.arizona.edu/contribution-beef-industry-arizona-economy.

Cattle in Window Rock, AZ, 2007. Photo source: Andrew Curley.

Diné be'iiná
The Navajo Lifeway

Image from the Diné Be'iná, "Sheep is Life" Facebook page. Diné Be'iiná logo was created by Harry McCabe. Imaged used with permission.

cattle in the Navajo Nation, but with 171,107 sheep[3]. The development of cattle and sheep in southwestern rangelands follow longer standing patterns of understandings of the land between two different kinds of living, colonizer and colonized.

For the Diné, the sheep remain central to subsistent life on the Colorado Plateau. It is a central area of decolonial struggle. In a 2016 report to the Navajo Times, then 17-year-old Vanessa Martinez (Diné), told reporter Arlyssa Becenti, "I have this concept of decolonizing myself, and this was a way to start. This was a way to do it and everything else will follow through … this makes you want to get sheep and do all that."[4] Today Martinez is a board member on the organization, "Sheep is life". The purpose of the organization is to "promote sustainable livelihood through the Navajo way of life."[5] Although the organization is small and their website isn't flashy, the idea central to their work – sheep is life – is a challenge to the settler-colonial ontology of land, commodity, dispossession. It signals a fundamentally different way of interacting with the natural world beyond the notion of frontiers and domination.

With force, colonizers killed bison, stole Indigenous lands, and put up barbed-wire fences around their vast ranches. Indigenous nations were forced to conform to this understanding of land, animals, and markets – but not completely. Even with land restrictions and grazing units, Diné traditional lifeways challenge commodity frontiers.

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Learning to Resist(ance) in Gujarat: Pastoral Pedagogy as Active and Positive Grassroots Resistance

Natasha Maru

Keywords: pastoralism, pastoral pedagogy, youth, education and resistance, Banni Grasslands

Abstract: The Banni grassland, of Gujarat state of western India, has emerged as a site of multipronged contestations over land and livelihoods. Structural transformations seek to refashion Kachchh's economy, society, and nature along capitalist and neoliberal lines threatening the livelihood of the 25,000 mobile pastoralists inhabiting the grassland. Embedded within this context, the Salim Mama Youth Course, initiated through the a collaboration between local civil society, research and academic organizations, trains youth in the region to recognize connections between pastoralism and their ecosystems. It achieves two main goals: firstly, the course attempts to secure the long-term sustainability of the grassland by developing the technical know-how of the youth as well as generating enthusiasm for pastoralism. Secondly, it contributes to the ongoing resistance against state induced corporate capture both practically, by providing information and tools to sustain contestations, and ideologically by reimagining the role and value of pastoralism in the region. This article unpacks the pedagogical approach of the course as a form of active and positive grassroots resistance against neoliberal environmentalism and commodity frontier expansion.

> *Amane thayu ke amme Banni na chiye toh amane Banni vishe jaan hovi joie. Amuk amuk chijo toh amane maa-baap thi khabar hati pan ghani chijo amane course dwara sikhva madi. Desh-videsh na maldhari vishe shikhwa madyu. Amane khabar nahoti ke bahar pan maldhari chhe. Amane thayu khali ame chiye.* – Paresh Marvada
>
> [We thought that since we are from Banni, we should know about it. There are some things that we learnt from our parents but many others that we learnt through the course. We learnt about pastoralists from across the country and abroad. We did not know that there are pastoralists abroad. We thought it was only us. – Paresh Marvada] Author's translation from Gujarati.

Paresh[1] is a young pastoralist from the Banni grassland region of Kachchh district, Gujarat state, in western India, one of India's largest and last remaining grassland ecosystems. He is talking about his motivation and experience as a student of the Salim Mama Youth Course, referred to as the *Banni course* in this article. The Banni course is organized to help young people in the region understand connections between pastoralism and their ecosystems, and to develop their ability to regenerate their ecologies.

By connecting the youth to their environment and associated cultural values, the course provides a crucial platform to interrogate discourses around land, livelihood, and ecologies. It serves as a tool for building grassroots resistance to counter the abstracting force of state developmentalism expressed through policies to enclose and appropriate the grassland and its surrounding territories.

At 2500 sq.km. the Banni accounts for over 45% of permanent pastures and 10% of grazing grounds in Gujarat (GUIDE, 1998).

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[1] All the names in this article have been changed to protect the anonymity of the respondents.

The landscape and pastoralists in the Banni grassland. Photo credit: Nipun Prabhakar for *Living Lightly*.

Once known as Asia's largest grassland, it nurtures a huge diversity of flora and fauna, including various hardy and nutritious grass species that sprout even with limited rains in its shallow saline soils. Banni's community of pastoralists make the most of the spatial and temporal variations in vegetation through shared resource use and mobility. The grassland is sustained, created, and re-created through pastoralists' mobile breeding and grazing practices, which derive from long-held ecological knowledge and a culture of the commons, and provide a range of ecosystem benefits.

Still, statist discourse sees Banni as "unproductive" and "barren" and pastoralism as "wasteful" and "inefficient." Embedded within wider structural transformations that seek to refashion Kachchh's economy, society, and nature along capitalist and neoliberal lines (Mehta and Srivastava, 2019), this discourse pervades policy and action on the ground. Attempts from the state's Forest Department to control and appropriate the grassland through a Working Plan issued in 2009 is a prime example. By proposing to enclose and fragment the grassland, the Working Plan undermines the local open grazing practices and livestock mobility that have sustained the grassland. It threatens to overturn the lived space that the pastoralists inhabit, experience, and act within and through.

With the slogan "Banni ko Banni rehne do" or "Let it be Banni" (Bharwada and Mahajan, 2012), pastoralists are making claims for the recognition of their community rights to the grassland. But rather than a simple state versus society dichotomy, they are engaged in multilevel and multi-layered negotiations with multiple, plural and heterogenous actors.

The Banni course is a unique intervention situated within this universe of claims making. It was developed by Sahjeevan, a local NGO; Research and Monitoring in the Banni Landscape (RAMBLE), an open research platform dedicated to the grassland; and the Banni Breeder's association, in conjunction with the Earth Science Department of the Kachchh University. Launched in 2020, the course facilitates a nuanced scientific understanding of the landscape and pastoralism.

At a practical level, the Banni course provides youth with skills and tools needed to navigate rapid shifts and exposes them to pastoral systems across India and abroad. It builds the capacity of youth to contribute to their

BANNI BREEDERS ASSOCIATION

Office of the Banni Breeders' Association where the course takes place. Photo credit: Nipun Prabhakar, personal collection.

community by participating in and leading projects, such as community-based grassland restoration. At a more affective level, the course seeks to renew a sense of wonder, appreciation, and pride in their ecosystem and the cultural norms that preserve it among the pastoral youth. It facilitates collective reflection and vision building in times of change and uncertainty.

In this article, I unpack both the practical and affective dimensions of the Banni course. The insights derive from sporadic field work in the Banni region starting 2015, involvement with discussions related to the course as faculty, and my own experience of interacting with the students.

The Banni Course

Ame Kalo Dungar gaya hata. Tyaan ame joyu ke Banni ni maati kem bane chhe, ane paani kyathi aave chhe [We went to Kalo Dungar. There we saw how Banni's soil is made and where water comes from], Paresh continues as he speaks about his favourite class of the Banni course – the one on soils. Close to the Banni region, Kalo Dungar [Black Hill], Kachchh's highest peak, is not just a good vantage point to observe the fascinating landscape of the region, but also to facilitate a locally embedded understanding of geological features like soil. Through an interactive session, the youth experientially learnt about the topography, soil, and water features of Banni.

Designed as a 300-hour certificate course, the curriculum of the Banni course is divided into several 2-day workshops on technical topics such as soil/geology, animal breeds, vegetation, faunal species, toxicology, animal health, and climate change, as well as more social science based examinations of topics such as pastoral communities, culture, economy, and laws. The tie-up with the Kachchh University came about through conversations with professors that are known within the civil society network. The idea was to provide legitimacy to the culturally bound and practice-oriented knowledge of the pastoralists that are not only left out of, but often clash with, formal curricula. This served as an incentive for prospective students and funders, and for the University to accredit more practical and situated knowledges.

Workshops are taught by subject-area experts that include academics, development practitioners, and policy consultants. Each workshop is led by someone based locally in Kachchh but they may invite experts from elsewhere to conduct parts of the session. For instance, the session on soils that Paresh is speaking about above was given by Sailesh Vyas, secretary and trustee of Satvik, an NGO promoting organic farming in Kachchh. Although the course is designed to follow a progression, the sequence of sessions is made flexible to accommodate the schedules of the faculty as well as the interests of the students.

Well aware of faculty positionality, the course relies on the wisdom of community elders, local animal experts, and insights from students themselves, amassed through their lived experiences within pastoral communities and grassland landscapes. Intergenerational transfer of knowledge is fostered through activities where students are actively encouraged to speak with their elders. In one exercise, students were sent to different villages to speak to skilled pastoralists from previous generations to learn the history of the region. In anther exercise, students were asked to bring old objects from their homes and describe what they were used for. One student, Altaf, brought and described an old utensil used in his great grandmother's time. He spoke about the material it was made of, the food that was cooked in it, and what place it held within the local economy and culture. He connected practices in his family to the shared culture of the pastoralist community, as well as the abundance of the grassland that formed a part of pastoral diets, and as deriving from the weather, soil, and geological formations.

This simple classroom activity yielded a rich description of the object, one that was threaded through a narration of the social, political, and ecological history and change in the region. It alluded to the experiential knowledge of the pastoralists, developed through close interaction with their environment, and passed down as instinct to the next generation. Speaking to their elders, observing their own environment, drawing connections between their practices, and learning about their own communal history were all part of this exercise. Role play, field visits, audio-visual material, and interactive icebreakers were used to make the sessions interactive and fun, and to keep the youth engaged.

Pastoral youth attending the Salim Mama Youth Course. Photo credit: Nipun Prabhakar, personal collection.

Through activities such as these, the course creates the space for an exploration of the values intrinsic to pastoralism as a cultural practice. For example, the pastoralists use the grassland resources in common; they believe that nature is god's gift and must be shared and preserved for future generations. Therefore, the livestock are allowed to graze openly across the region, and animals from drier areas have the right to graze in wetter areas. Discussions of the values that make open grazing possible were explored. The students examined extant practices where finders of a lost animal do not see themselves as its keeper but rather as a trustee of the animal and its income for the owner. Or of how it becomes incumbent on the village to help restore a herd of a colleague who has lost his herd to disease, accident, etc.

These values are connected to the social topics covered through the workshop, such as economic risk management through moral economy, or demands for community forest rights that draw from the ethic of shared resource use and its custodianship. Emerging opportunities in pastoralism, such as dairy processing, for example, are discussed through peer-to-peer engagements with pastoralists from other parts of the country and abroad. Both the content and the form of this pedagogic intervention are designed to reinvigorate pastoralism among the youth who have been leaving for jobs in tourism and industry.

The course also provides practical training for pastoralists on using Microsoft office, managing projects, conducting resource mapping, and building their photography skills. These modules were taught bearing in mind workplace requirements, as well as the expanding capacity needs within initiatives undertaken by Sahjeevan and the Banni Breeders' Association, such as community-based grassland restoration initiatives or organizing "forest management committees" as part of their rights-based claim making. From the perspective of the NGO, receiving rights to resources is only a means to an end; the goal is not just to prevent implementation of the 2009 Work Plan and receive rights, but to ensure the long-term sustainability of the grassland and to safeguard the livelihoods practiced therein by protecting human-environment relationships.

Natasha Maru teaching during a session of the Salim Mama Youth Course. Photo credit: Nipun Prabhakar, personal collection.

Tourists at the Greater Rann of Kachchh at the edge of the Banni grassland. Photo credit: Nipun Prabhakar, personal collection.

The students enjoyed the course. While many of them had had formal schooling, it followed de-localized state-based curriculum taught by teachers that had never been to the region before. At home, too, learning was by doing, by perceiving, rather than through any 'taught' channels. Hence, for many students, coming to the course was a way of re-discovering themselves and their homeland as well as learning. Some students have been able to incorporate ideas from the course into their daily and professional lives. Paresh, for example, wants to more carefully monitor the quantities of water and feed he gives to his herd after learning about animal health and nutrition and the economy of animal husbandry. For another student, Mir, the course helped him prepare him for the interview and job where he now works with another NGO in the region.

The Banni Course as Resistance

Following colonial policies, the government of newly independent India nationalized all land not assessed for revenue, taking over all non-agricultural land devoid of private ownership (Corbridge and Kumar, 2002). Banni was thus declared a Protected Forest in 1955, but, its "survey and settlement" pending, it remained stuck in an administrative logjam for decades. This meant that, depending on the situation, the State selectively owned or disowned matters related to Banni, pushing the region and its people to the margins of the state's imagination (Bharwada and Mahajan, 2012).

This changed following a new impetus to survey public lands following a devastating earthquake in Kachchh in 2001. Long ignored on the "economic map" of Gujarat (Tambs-Lyche and Sud, 2016), the "remote," "marginal" border district of Kachchh was re-positioned as India's premiere investment destination. It was "deliberately turned into a corporate business opportunity" (Menon et al, 2014) leveraging on its vast stretches of sparsely populated semi-arid lands. Operating on a narrow state-business alliance as opposed to a free play of markets (Sud, 2014), the development in Kachchh is an apt example, and, indeed, the laboratory for the now popular 'Gujarat model,' that is being promoted across the country since Modi's promotion from Chief Minister of Gujarat to national office.

The development of tourism, industry and commercialization of the grassland, along the lines of state developmentalism have served to "commoditize" the grassland, transforming the relationship between pastoralists and the grassland from that of reciprocity to that of exchange. With these developments, the

Banni is a layered commodity frontier in the making.

Tourists are invited to the annual Rannotsav, or Desert Festival, at the crown of Banni with the invocation, "Kachchh nahin dekha toh kuch nahin dekha" [You've seen nothing until you've seen Kachchh] (Gujarat Tourism, 2016). The Vibrant Gujarat business summit takes place alongside this festival bringing in high industrial investment to Kachchh and the region. Huge export oriented marine chemicals industries have now established themselves in the region surrounding Banni, such as Agrocel Industries Private Limited (28000 acres), Solaris Chemtech Industries Limited (subsidiary of Agrocel) (67000 acres), Archean Chemical Industries Private Limited (100,000 acres), and Satyesh Brinechem Private Limited (111,200 acres)[2].

The 2009 Forest Department Working Plan (WP) proposes the commercialisation of the Banni grasslands. Constructing the problems of the grasslands as mismanagement by local people, the Plan proposes to enclose the region, all the while aiming for its corporate control. Issued 54 years after Banni first received forest status, the WP enlists several schemes for the "rejuvenation" and the "scientific management" of the "highly degraded" grassland that is claimed to have been "heavily damaged" by the "open and uncontrolled grazing" followed by the pastoralists (Meena and Srivastav, 2009). Reeking of the widely contested "tragedy of the commons" treatise (Hardin, 1968), the WP recommended enclosing the grassland into plots that are "fenced through **double fencings** [original emphasis] with barbed and trenched [sic]," (Meena and Srivastav, 2009) and capitalizing the space for biofuel production by a multinational company.

These developments are all emblematic of the capitalist expansion, social change, and ecological transformation of the region. They have "encapsulated" a pastoral way of life by undermining their production relations, customary shared resource use, mobility, and traditional knowledges (Kavoori, 1999). They have abstracted the space of the grassland from the lived realities and daily practices of the pastoralists and eroded the tacit knowledge that comes from engaging with the resource over time, including the skills, routes and landmarks learnt through traversing the land. The Banni course seeks to counter the "cognitive enclosure" (Habeck, 2013) that accompanies such appropriation by renewing the relationship between the pastoral youth and their ecology.

In this context where pastoralism is being squeezed out, the Banni course serves as a space and practice of resistance where alternative imaginaries can be built. The course's focus on the socio-ecological connections and communal values that pastoralists derive from their lives and livelihoods counters the state's negative perception and discourse. It confronts the conflict between two contrasting philosophies: the market and capital on the one hand, and the culture of commons on the other. It builds on indigenous ethics and understandings and connects them to contemporary western science as a basis through which the pastoral youth can develop a counter discourse that views pastoralism more positively. Importantly, the course offers a tool for resistance that is based not on opposition, not a sentiment of "no", but rather a sentiment of "yes" or agreement - yes to the commons, yes to understanding the environment, yes to sustainable pastoralism.

Conclusion

Embedded within the rapidly shifting context of Kachchh, the Banni course is a unique intervention to counter the appropriation of pastoral territory and ways of being. It serves as a tool for raising awareness, building a shared consciousness, and as an organic form of grassroots resistance. Mobile pastoralism has long been viewed as "outdated, irrational, stagnant, unproductive and ecologically damaging" (Butt 2016: 463) within popular imagination. Broad processes of economic, social, political changes post the 2001 earthquake operationalise this view into policy and programmes, public perception, and the pastoralists' own understanding of self. The Banni course challenges these negative

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[2] Data found from company websites and popular news articles.

Pastoralism in the Banni grassland. Photo credit: Nipun Prabhakar, personal collection.

perceptions, privileging the intuitive and collective wisdom of pastoralists over the technocratic solutions proposed by the state through its various sessions and discussions.

The course achieves two objectives as shown in section 2 and 3 respectively: firstly, the course attempts to secure the long-term sustainability of the grassland by developing the technical know-how of youth as well as generating enthusiasm for pastoralism. Secondly, it contributes to the ongoing resistance against state induced corporate capture of the grassland both practically and ideologically – practically, by providing information and tools through which to sustain the contestation, such as an understanding of the Forest Rights Act, 2006[3] and claim-making within it, and ideologically by reimagining the role and value of pastoralism in the region.

By fostering a greater appreciation for pastoralism, the course disrupts the statist narrative and builds an alternative vision that values pastoral custodianship of the grassland and their traditional knowledges, through which the youth may reconnect with pastoralism. There are plans to invite non-pastoral students from the Kachchh University to take the course and work alongside youth from the region's pastoral communities. There are some ideas about extending the course to other pastoral communities and facilitating exchanges between them. These various initiatives help to ensure that the Banni course will remain relevant not only now, but also in the future as pastoralists reshape their interaction with the grassland and reimagine pastoralism and themselves in a region in flux.

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Photos provided by Nipun Prabhakar, an independent photographer and architect working at the intersection of built environments and people, artifacts, and folklore. Since 2016 he has been working on documenting the nomadic pastoralist communities in India. nipun.spab@gmail.com.

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[3] The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

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Peasant Frontiers and the Enigma of Peasant Work

Eric Vanhaute

Keywords: peasant, peasantries, peasant question, labor, subsistence

Abstract: Peasant households produce most of the food in the world today, as they have for millennia. Concentrated in China and India, and spread across the Global South, the variegated persistence of differentiated peasantries and their labor remains one of the most fundamental questions of the 21st century. In this contribution, Eric Vanhaute argues that peasants have underwritten and fueled the expansion of civilizations, empires, states, and economies for the last ten millennia, embodying what he calls "peasant frontiers." He reflects on how peasant work is foundational for resolving contemporary socio-ecological crises, including those related to capitalist industrial livestock production. The contribution is based on his new book, *Peasants in World History*, Routledge, 2021.

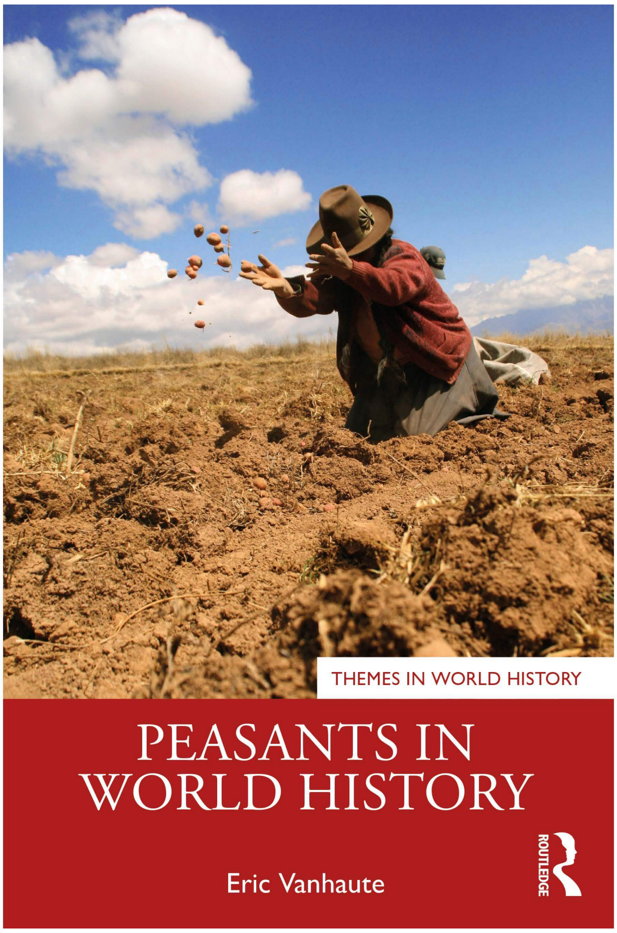
Unlike any other working and exploited class, the peasantry has always supported itself and this made it, to some degree, a class apart. In so far as it produced the necessary surplus, it was integrated into the historical economic-cultural system. In so far as it supported itself, it was on the frontier of that system. (John Berger, Pig Earth, xii)

Work, or labor, has been one of the big enigmas in historical and social sciences. It dominates human lives, human societies, and human history, but it remains hard, even impossible, to pin it down in a comprehensive definition. Jan Lucassen (2021) in his major epos on the history of work only needs one sentence, "I regard all human pursuits apart from free time or leisure as work". As Catharina Lis and Hugo Soly (2012) claim in their opus magnum, "Definitions of work are subject to dispute, since what matters in the end is who determines which efforts are worthy, i.e. meet 'socially recognized needs'". Sociologists Charles and Chris Tilly (1998) gave us probably the most useful working definition, "Work includes any human effort adding use value to goods and services." They continue with what has become a truism in global labor history, "Prior to the twentieth century, a vast majority of the world's workers performed the bulk of their work in other settings than salaried jobs as we know them today. Even today, over the world as a whole, most work takes place outside of regular jobs."

This applies, of course, to the majority of household-based and household-related work, most of which is undertaken by women without a wage. It is also true for the most important social group in human history of the last ten millennia, the peasants. All successful cultures and civilizations the world has seen, with the famous exception of the nomadic empires, have been built on extensive peasant economies comprising 90 percent or more of the population. Still today, according to the Food and Agriculture Organization of the United Nations, around 1.3 billion people are employed in agriculture, 97 percent of them in the Global South. In general, 2.5 billion people, one-third of the world population, derive their livelihood from agriculture. They live and work on more than 600 million farms, of which more than 90 percent are family-run. Family farms remain responsible for most of the world's agricultural and food production; it is estimated that they produce more than 80 percent of the world's food in value terms. A significant majority of these family farms, about 500 million, are peasant holdings smaller than two hectares, six out of ten of them located in China and India. While the number of farms continues to rise globally, the average farm size has shrunk significantly. Available data show that the number and the share of female workers in agriculture is rising. Still, female farmers tend to control less land and livestock, are less likely to use credit or insurance and have lower education levels.

Writing a peasant history is writing a history of peasant work. The United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas, adopted in 2018, defines a peasant as "any person who engages or who seeks to engage, alone, or in association with others or as a community, in small-scale agricultural production for subsistence and/or for the market, and who relies significantly, though not necessarily exclusively, on family or household labor and other non-monetized ways of organizing labor, and who has a special dependency on and attachment to the land." Throughout their history, peasants have been workers of the land. They live in rural, agricultural households and have direct access to the land they work, either as common users, tenants, or smallholders. They are organized in family bonds, village communities and social groups that we call peasantries.

These bonds pool different forms of income and meet a significant portion of their subsistence needs via networks of production, exchange, credit, and protection. Most of the time, peasantries have been ruled by other social groups that extract a surplus either via rents, market transfers or through control of public power (taxation). The minimum social conditions of peasant work include access to land, labor, tools, and seeds. Historically, the principal social units through which the means of farming have been secured are the rural household and the village household system, both varying greatly in size, composition and social relations through time and space.



A History of Peasant Work

Peasantries made societies and societies made peasantries. Surplus production from nature and the land, in various forms, has been a precondition for large-scale societal change. Societal change was necessary to group agricultural producers into peasantries. Agricultural-based economic systems facilitated vaster communal units and extended village networks. This provoked profound changes in the structure of social relations, population growth and village and supra-village institutions. The spread of agricultural village societies as the primary food system took millennia. By 5000 BCE, much of the world's population lived by farming; the first agricultural-based empires emerged by 3000 BCE. By then peasant economies had become sufficiently advanced and, in some regions, they supported more complex, urban-based societies and differentiated trade networks. Civilizations did not simply rely on agricultural producers; they also organized, dominated, and exploited them. Civilization equated complexity, sophistication, development, and grand culture. For peasants, it mostly corresponded to dominion. Sometimes formally free, mostly bound to the soil by their masters, they have almost always been the lowest class or caste, and women, in general, the lowest status among farmers.

The history of peasant work is the history of the struggle for the fruits of their labor. Social relations in agricultural societies have been built on the returns of the land. They were reproduced in institutions and norms that defined new rules of ownership, inheritance, transmission, and control. Peasantries did not only feed civilizations, empires, states, and economies; they also supported their ecological and social resilience and fueled their expansion. They were their socio-ecological frontiers.

Farming societies developed a new, more intrusive and aggressive attitude towards the resources of nature, land and labor. The expansion of plant and animal husbandry presumed the more radical exploitation of diverse ecosystems and the development of new tools, new modes of reclaiming lands and renewing fertility, and new modes of cultivation and animal breeding. This had an increasing impact on human-nature relations, predominantly resulting in massive worldwide deforestation. The history of peasants cannot be understood outside the societal systems that incorporated and generated them. Peasants develop strategies for survival and resistance in response to the expanding impact of state power, market relations, class struggles and ethnocultural identity conflicts. Over time, the scales upon which these social power relations are expressed have not only widened and multiplied, they have also become increasingly interdependent. The notion of peasant frontiers emphasizes that this incorporation has always been partial and that their history has never been linear. Frontiers map processes of incorporation, adaptation, and opposition. Frontiers help us understand and explain the different strategies that peasant populations have developed to defend and secure access to their essential means of production - nature, land, and labor - throughout history.

To gain a comparative-historical understanding of peasantries, we work with a gradual continuum: from strong to weak subsistence regimes and from weak to strong market-oriented regimes. This avoids fixed categories and a prescribed historical trajectory. Subsistence farming and market production have never been exclusive and, in many cases, were mutually supporting. Nonetheless, we can discern some basic types of peasant regimes by taking common access and land use rights as a central variable. Household-oriented peasant regimes were frequently supported by common land use arrangements. Family holdings, communal management and collaboration between farms were a central feature in this type of regime. The advantages were multiple: the sharing of scarce capital, minimizing income differences, guaranteeing family subsistence, mutual support, protection from external threats and overexploitation and a high degree of village autonomy. In another set of regimes, household-oriented peasant farming was only marginally supported by common land use rights or not at all. This increased the pressure on peasant survival systems and households were pushed to adopt market strategies and more land-intensive production methods. Peasant land and commodity markets became more prominent, generating a stronger differentiation between peasants.

As land use intensified, so did the input of labor to activities like weeding, crop rotation and manuring. Higher land yields came at the expense of working harder, which often negatively impacted labor productivity. Without the commons as a credit and insurance system, new credit relations were forged, often between smaller and larger farms. This resulted in intense but often unequal credit and exchange relations within and between villages. Excess peasant labor was traded for capital inputs such as horsepower, plowing and transport. This type of peasant regime, which combined subsistence and commercial aspects, emerged in many world regions and proved to be very resilient over a long time. This mixed peasant economy is often misperceived; it was not a transitionary step to full commercial farming, agricultural specialization and finally, agro-industrial family holdings. This capitalist transformation was not the final stage of advancing peasant commercialization. On the contrary, it was the outcome of the total metamorphosis or dissolution of peasantries. Within capitalism, peasant regimes became premised on new forms of enclosure of land and labor. Direct incorporation thoroughly altered ecological relations, resulting in a greater diversification of systems of access to nature, land and labor, systems of production and reproduction, and survival and coping mechanisms. Uneven incorporation and uneven commodification caused more social and spatial differentiation through divergent processes of de-peasantization and re-peasantization, and a concurrent diversification of peasant livelihoods.

A Future for Peasant Work

The neoliberal regime since the 1970's thoroughly rephrased the world-historical position of peasantries, giving a new meaning to the 'old' peasant question. Peasant communities were weakened by the expansion of transnational financial capital, an expanding rural exodus, the further proletarianization of human labor and the steady erosion of public and common domains. This happened without the expelled workforce being absorbed in industrial employment, as was supposed to occur in a classic agrarian transition to capitalism. Peasantries in the Global South were marginalized while national industries slumped. This created a massive precarious workforce that was structurally under-employed and constantly moving between towns and the countryside and across international borders. This phenomenon is often regarded as proof of the disappearance of the peasantry. But starting in the 1990s, rural protest movements proliferated around the world. They claimed peasant identity, recuperated land by means of mass occupations and protested against the destruction of their livelihoods. This partly explains why peasant mobilizations increasingly aligned with indigenous, feminist, and environmental movements.

In a contemporary context, so-called de-peasantization has to be understood as a multi-layered process that erodes an agrarian way of life. This has triggered a further diversification of rural coping mechanisms, including petty commodity production, rural wage labor, seasonal migration, subcontracting to national and multinational corporations, self-employment, remittances, and transregional and transnational income transfers. Moreover, regional trends can be very adverse. Processes of de-agrarianization in core zones often coincide with the creation of new peasantries in peripheries. Recent moves towards de-agrarianization are triggered by the enforcement of neo-liberal policies and Structural Adjustment Plans. In many peripheries, vulnerability has switched from a temporary to a structural state of being. This is countered by the intensification of old and the introduction of new forms of livelihood diversification, such as taking up non-farm activities and relying on non-farm income transfers. Capitalist expansion induced a remarkable variety of labor regimes and diverse systems of recruiting, organizing, and reproducing labor. Most regimes combined subsistence with commodity production, and boundaries between labor systems remained flexible. This is especially clear from a household perspective since a large majority of households have never been solely dependent on one (wage) labor income. Non-wage labor has been an essential part of capitalism because it guarantees human reproduction and absorbs part of the costs of protection and care. In general, peasant strategies related to work and income have been geared towards self-organizing systems of land-holding and labor organization.

One solution to the contemporary peasant question might be the modernization of agriculture in the Global South by reproducing the North American and Western European model of commercial family farming. The first essential step would be to eliminate the mass of small peasant holdings and to capitalize the remaining farms. This model was made possible in the West by cheap fossil energy and agricultural chemical inputs that substituted human labor, animal traction and organic manures. The next step would be to simplify agro-ecosystems to the demands of mechanization and commercialization. The basic criterion to measure agriculture's efficiency would be a decline in the ratio of human labor input to production output, resulting in increased labor productivity. This reform of the countryside could then support much larger non-agricultural populations. Highly capitalized agriculture combined with the de-agrarianization of society would come at very high costs. This type of growth systematically generates additional ecological, energetic, and social costs in the form of soil exhaustion, water pollution, biodiversity loss and social unsustainability. In many parts of the Global South, the peasantry will be rendered essentially redundant. Because this peasantry is located overwhelmingly in the Global South, this has become the prime locus of the contemporary peasant question. The peasant way, therefore, has become both a social and ecological imperative.

Twenty-first-century agriculture may not need peasants, but the world does. It has become clear that contemporary society has to embrace the peasant way, if not by choice, then by necessity. We can imagine a future peasant way by reflecting on peasant history. Polyculture and mixed farming have been the essence of peasant cultivation. Contemporary agroecological knowledge starts from the peasant's vast knowledge of soils, plants, organisms, weather patterns and microclimates. This makes contemporary peasant farming more environmentally resilient by producing a surplus, recycling nutrients and conserving water and resources. Peasant cropping primarily uses animal manures, legumes, and cover crops to provide nutrients. Agricultural efficiency is reconceptualized by expanding productivity from specific crop yields to net output per unit area. Peasant farms tend to utilize their space more intensively; they employ cropping patterns that integrate complementary plant species and small livestock populations. The ability to conserve, renew and enhance soil fertility is a prime goal of peasant farm management, drawing on knowledge passed down through generations. Contemporary methods of lower-input and labor-centered yield intensification do not return to tradition and do not reject modern science. Conversely, promoting new peasant farming methods requires much more scientific research and training to understand better how these agro-ecosystems operate. Complexity underpins resilience and sustainability. Throughout history, peasant frontiers and the dialectics between integration and independence created a large variety of farming systems predicated on differential forms of access to nature, land, and labor. This has always opposed the trends of simplifying and industrializing farming that increased dependence on interlocking inputs such as agricultural chemicals, seeds, fertilizers, and livestock pharmaceuticals and on privatizing scientific knowledge.

The choice for a peasant way is not only about farming and producing; it is about living together and making sense of life. For most of its history, farming was essentially localized with regard to production, the pooling of labor and the external provision of goods and services. For centuries now, capital has acted against the fundamentals of peasant farming; it has counteracted the public domain and common access and land use rights. It sought to privatize all forms of public ownership and to subjugate the power of public decisions to the needs of the market. Notwithstanding centuries of capitalist expansion and decades of neoliberal privatization and deregulation, large parts of the world's peasantries still follow a community rather than a private market logic. Private land acquisitions by speculators and producers of agrofuels have given rise to widespread resistance, often re-establishing the commons as a means of resisting the agro-industrial system.

The peasant way will integrate the peasantry's knowledge about the diversity of nature and the complexity of farming and by renewing fertility and reducing ecological and social risks. Risks and costs will be an integral part of production and exchange, and efficiency will be measured in relation to nature and land. We will rethink resilience as both a communal and a global characteristic, integrating the virtues of flexibility, cooperation, reciprocity, risk spreading and dealing with uncertainty. Peasants make use of complex landscapes, deploy diverse technologies, and build multiple social relations and networks within highly variable environments. We will redefine market relations as embedded in local societies and organized around the principles of parity. We will rethink the relation between social groups and public power. Governments and states provide protection, infrastructure, education, social services, and the arrangements to secure access to land and natural resources. We will rethink peasantries as counter-movements and counter-narratives, underscoring the moral claims of a diverse set of rights: rights to access land, rights to be peasants, rights to keep the cultural identity, rights to receive a just price and to work for a just income. This will also underscore the moral claims of control of access and production of food, as well as the moral claims of protection by public authorities.

Peasantization includes the rise of indigenous, ecological, and feminist consciousness, further delegitimizing capitalist modernism and resisting full proletarianization. It encompasses a moral ecological discourse, as returning to the land is claimed as a right, and converting financial capital to natural and agroecological capital is seen as a necessity. Re-peasantization bears the promise of ultimately generating more work and enhanced levels of income and self-respect. It is clear that the peasant question is not solved yet. It will remain one of the most fundamental questions of the twenty-first century.

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Review of Joshua Specht's "Red Meat Republic"

Jonas M. Albrecht

Keywords: meat, US-History, capitalism, commodity chain, 19th century

Joshua Specht, *Red Meat Republic: A Hoof-to-Table History of How Beef Changed America*. Princeton University Press 2019, ISBN (Paperback): 9780691209180, $18,95/£14.99, 368 Pages.

Joshua Specht's *Red Meat Republic* highlights the possibilities when producing a book with an Ivy League powerhouse publisher including innovative online marketing[1]. *Red Meat Republic* is not only advertised appealingly, it is also a well-written and carefully researched book that will certainly appeal to historians interested in various subfields – environmental, economic, social, and cultural history.

The "first hoof-to-table-history of industrialized beef production," the book tells the story of the "cattle-beef-complex" as a "set of institutions and practices keeping beef on the dinner table" in the United States during roughly the last quarter of the 19th and the first decade of the 20th centuries (4). Specht's overarching goal is to examine "the origins of industrial beef production" (260) and challenge traditional explanations. The author aims to reconcile two popular, albeit competing narratives of the history of the "cattle-beef-complex." Especially early-20th century authors close to the industry of meatpacking have represented the system as a "consequence of emerging technologies such as the railroad and refrigeration, coupled with the business acumen of a set of honest and hardworking men." Meanwhile, critics have provided a narrative that a "capitalist cabal was exploiting technological change and government corruption to bankrupt traditional butchers, sell diseased meat, and impoverish the worker" (2). Combining the arguments of both narratives, Specht highlights that "the national market for fresh beef was the culmination of technological revolution, but it was also the result of collusion and predatory pricing" while the "modern slaughterhouse was a triumph of human ingenuity as well as site of brutal labor exploitation" (2-3). The author's main aim is to align "seemingly contradictory realities" and provide a history of a system that was "at once revolutionary and exploitative" by focusing on "individuals and conflicts that shaped food industrialization" (3).

To do so, the book's five chapters encompass the major stages in the commodity chain of beef, i.e. cattle ranching and marketing, slaughtering and the distribution as well as retail of meat, and finally the consumption of beef. The first chapter, War, addresses the violent westward expansion and the displacement of Native Americans after the Civil War, which represented a "story of ecological changes with profound political implications," "national in scale and revolutionary in effect" (7). Fostered by both government policies and individual ranchers' efforts, the expropriation of territory west of the Mississippi created a space identified as an "open range" that was in reality "produced by the violent exclusion of people and bison" (23). Cattle functioned as "mobile colonizers" (35) alongside the US government's genocide of Native Americans on the Great Plains and militarized confinement of Native Peoples to reservations at the same time. As the removal and exclusion of people and bison "opened" the plains to European settler cattle ranching and remade the area "as an ecosystem as well as a political space" (18), the reservations –

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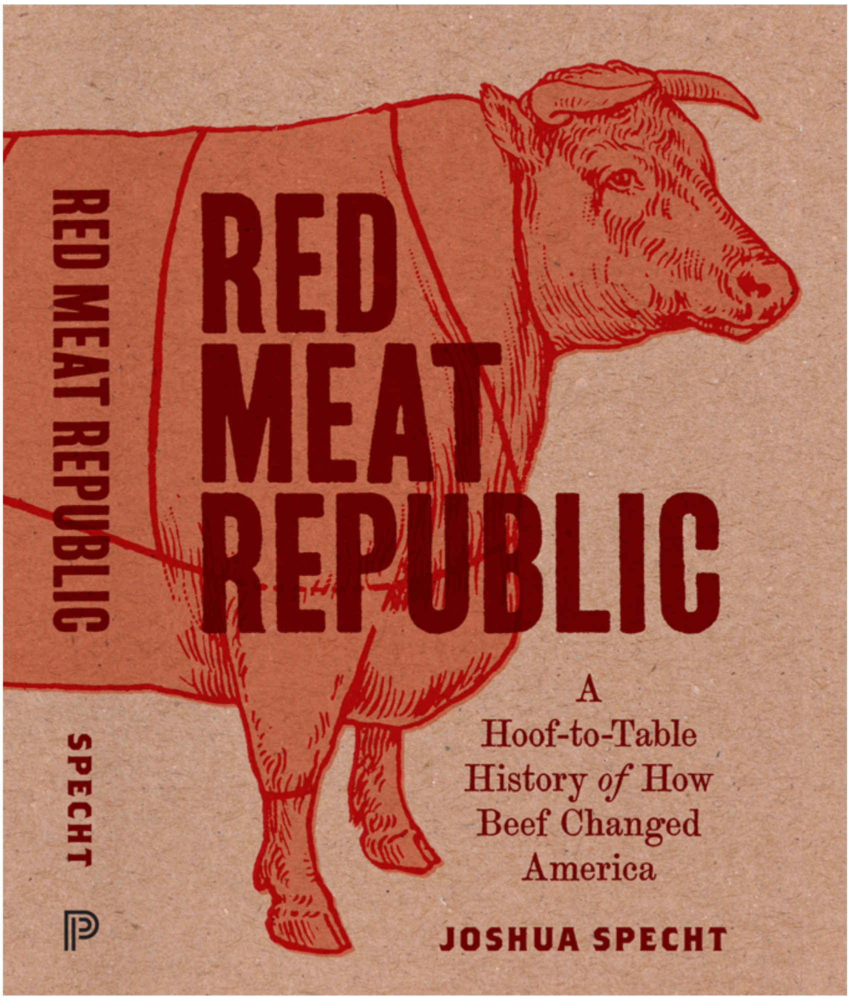
[1] https://press.princeton.edu/books/hardcover/9780691182315/red-meat-republic (19 August 2021).



dependent on food rations supplied by the US government – served as a relatively secure outlet to dump especially low-quality meat at subsidized prices next to sales on regular markets. Narratives of Native Americans' cultural failure and "allegedly backward practices" in turn "were as much a tool of conquest" as rifles and cattle, which provided "justification for the violence on which the cattle-beef complex rested" (23).

Chapter 2, Range, examines capital's penetration of cattle ranching on the Great Plains. Wooed by large returns, investors from the Unites States and Great Britain moved large amounts of capital into cattle raising and created various large-scale ranching operations with hundreds of thousands of animals, "usually with more money than expertise" (77). Based on sources of such ranch corporations, Specht brilliantly highlights how "the microlevel practices of ranching – scattering cattle far and wide, allowing cattle to care for themselves – collided with the macrolevel needs of capital for precise business practices" (73). As profitability rested on harnessing profitable ecological processes (grazing and reproduction) and eradicating unprofitable ones (fire, predators, starvation), "profitability ultimately depended on finding the cheapest means of allowing cattle to care for themselves" – letting them walk and graze freely (72). Consequently, large-scale ranch managers across the board were unable to gain and maintain exact knowledge of the numbers of cattle in their gigantic herds and developed more or less shaky methods of guestimation – "capital wanted precision but profit required uncertainty" (73).

When two hard winters with disastrous blizzards killed tens of thousands of cattle between 1885 and 1887, large mismatches between investors' accounts and the numbers of cattle on the ground erased profits, sparked panic and led to the bursting of the cattle bubble. Cattle prices plummeted as investors aimed to secure what was left of their investments, ordering the sell off the remaining stocks of cattle at any price whatsoever. Across "the West," the entire system of large ranches toppled, leaving an environment of small-scale "family" ranches to dominate the business after the late 1880s. Thus, a "ranch was an ecosystem created in the interest of profit. Rancher and cattle had replaced nomad and bison in the quest to metabolize grass into salable human food. But it could never be a wholly artificial system, a factory for producing animal flesh. […] The unpredictable Plains climate collided with not just investor psychology, but also the heart of investment and business: reliable and quantifiable inputs. […] This story highlights important aspects of how landscapes are incorporated into commodity markets. […] an ability to crudely, but persuasively, represent an ecosystem for investment capital may be more important for initially integrating a landscape into an economy than actually transforming that landscape" (116-117).

The failure of large-scale ranching had direct effects on the organization of the commodity chain downstream of ranching, as Specht shows in Chapter 3, Market. Rather than raised on large, centralized ranches, the production of cattle underwent a process of differentialization between various players and spaces since the 1870s, as "different regions specialized in different parts of the bovine life cycle" (125). Depending on regional ecologies, cattle were raised west of the Mississippi, especially in Texas and later fattened by specialized farmers on either the more nutritious grass plains of Colorado and Montana or by corn-belt farmers in Kansas, Illinois, Missouri, Iowa, and Ohio. Relying on hard and low paid cowboy labor, this differentialization required the mobility of cattle and people, which in turn led to a "standardization of spaces."

"Expanding networks of commodities and capital […] promoted a continent-spanning standardization of the built environment": ranches, stockyards, butcher shops, etc. (7-8). Towns along cattle trails competed to grasp a piece of the p[ie by providing infrastructure for trade and "specific places and immobile actors appealed to mobile actors like ranchers with familiar amenities – hotels, well-regulated stockyards, and clearly marked trailing routes – that amounted to standardization, requiring correspondingly less local knowledge from market participants" (120). A consequence of mobility, when "mobile goods crossed jurisdictions, people sought expanded federal authority to match the new scale of national markets" (120). Specht underlines this point by using the example of the Texas cattle fever during the 1880s, when "it became apparent that the scale of regulation needed to match the scale of markets" and federal sanitary regulations needed to be introduced to prevent actors from circumventing scattered local restrictions (150). Thus, "the story of modern beef […] is fundamentally political" as its nation-wide system of production and distribution were linked inherently to the development of the federal state addressing growing needs of regulation at levels surpassing local, regional, and state competences (3).

Eventually, contrary to decentralized ranching, centralized slaughter operations benefitted massively from this development of the commodity chain. Established during the Civil War, the large meatpackers especially in Chicago profited from both the dramatic price decrease of cattle on one hand, and from the decentralized system on the other hand. By the 1880s, the big Chicago and Kansas meatpackers were able to dictate prices as they "could operate in several markets at once and had an endless number of suppliers" and "exploit the scale of their business" by operating nationally "while keeping their suppliers inescapably bound to a particular place, be it range, train car, or stock pen" (169). While ranchers could hardly afford the expense to move a herd from one market to another in case of inacceptable sales prices, helped by the telegraph Chicago buyers could quite easily (threaten sellers to) make purchases in other markets and thus play off local actors. This way, "between 1870 and 1900, western cattle markets evolved from a series of regional centers into an integrated national system" (170).

In chapter 4, Slaughterhouse, Specht addresses the way that Chicago meatpackers grew from regional players to "global behemoths" in just one decade (174). Next to exploiting economies of scale vis-à-vis ranchers, Chicago's Big Four meatpacking companies came to monopolize the American – and to some extent even the British – market by exercising their combined market power at the expense of laborers, railroad companies and local retail butchers across the eastern United States. With regard to labor, huge influxes of cheap, often immigrant workers, a legal regime that limited corporate liability and checked union power as well as combined efforts to curb resistance against precarious work conditions provided the meatpackers with "cheap, reliable, and desperate labor" at all times (180). Simultaneously, the Big Four also came to dominate shipments of dressed beef. By cornering the transportation market and circumventing the US-American railroads' monopoly with the help of the Canadian Grand Trunk Railway, in the mid-1880s the meatpackers were not only able to play the railroads against each other but to deliver dressed, refrigerated meat cuts instead of live cattle to eastern butchers and European consumers. This, in turn allowed the slaughterhouses to elbow into local supply structures of beef. "Their message to these butchers was to stop slaughtering cattle and instead focus on selling meat, the packers would handle the rest. Of course, once the packers controlled a city's wholesale market, they could set terms for retail butchers. Repeated thousands of times, this process turned the packers' slim margins into big profits," partly earned through "cutthroat business tactics" (203, 210.)

The meatpackers legitimized their actions with having "democratized meat consumption" and both consumers and lawmakers "embraced cheap beef" that could be controlled centrally according to sanitary needs (205, 206): "The refrigerator car might have made it possible for fresh Chicago beef to reach Minnesota, but a Supreme Court decision was necessary to sell it there" (209). Although regulators recognized the "artificial and abnormal centralization of markets, and the absolute control by a few operators thereby made possible" by late 1880s (211), "because judges, politicians, and bureaucrats all accepted the argument that low prices were the most important goal, meatpacking would thereafter be regulated in a way that ensured cheap beef at the same time that it promoted centralization and tolerated both rancher precariousness and worker exploitation" (215).

Indeed, consumer demand was key to this development, as Specht points out in chapter 5, Table. "Even if markets are deeply political, the cultural history of consumption is closely tied to how and why markets are regulated", he argues (15). Demand for fresh rather than cured beef highly affected the whole supply system that came to be regulated around sanitation, not labor. Because the meatpacking companies were highly successful in integrating local retail butchers as mere "handlers or selling agents for Meat Trusts" into the commodity chain, this facilitated the "invisibility of industrial production" and the "democratization of beef" (219). Democratization, chapter five argues, "brought new burdens and expectations" (221). On the one hand, "limits of consumer politics" (221) foreclosed certain kinds of political intervention into the production processes upstream; if beef was cheap and sanitary consumers and politicians alike were satisfied. "Addressing issues that might ultimately increase the cost of meat—such as labor exploitation or animal abuse—require a high bar of consumer sacrifice. This sacrifice becomes correspondingly greater as an ingredient gains importance in consumers' lives" (221).

On the other hand, using recipes, cookbooks and analyzing consumer debates, Specht highlights that the democratization of beef consumption both fostered the differentialization of consumer practices and sparked debates over who should be able to eat what. While new elite ways of consuming meat – "French-style cooking and elaborate dinner parties" at exquisite restaurants – "became crucial to the consolidation of the elite social world," beefsteak dinners during which young males ate "vast quantities of steak washed down with beer" became a way to express "the period's gender ideals, away from restrained manliness and toward an aggressive and sometimes violent masculinity" during the 1880s and 1890s (244, 245). In short, "consumption was a way of asserting hierarchy, whether of men over women, American-born over immigrant, or colonizer over colonized" (221).

Due to the "importance of cultural meaning and sanitation to commodification" (223), beef consumption and preparation was, remained, and increasingly became an issue deeply connected to gender, class, and race; it might even include "social Darwinian thinking about food" (239). Concluding the book after highlighting the entire systems' relative persistence up to the present day, Specht again underlines the book's central claim, that "this method of producing our food is a question of politics and political economy, rather than technology and demographics" – therefore, systems that are "more equitable" are feasible (260).

Well in line with other recent publications like Gergely Baic's *Feeding Gotham* (2016) or Jan de Vries's *The Price of Bread* (2019)[2], Specht's book represents a further contribution that underlines the importance of politics to (the history of) food systems. While throwing neither out of the window, it is thus another account that combines political, economic and environmental factors vis-à-vis narratives that center on cultural histories of food. This way, in the face of the accelerating global issues of climate change and inequality, Specht's contribution might be considered part of a "neo-materialist" turn that refocuses the attention of historians to topics different from the focal points of cultural-turn historiographies of the last decades. However, Specht demonstrates that such a reorientation does not need to be a refutation; it can be an advancement by adopting more encompassing perspectives.

In this lies *Red Meat Republic*'s brilliance. The book's quality derives from Specht's ability to convincingly connect the several links of the food chain of beef and explain the interplay and power relations between the ranching, marketing, slaughtering and consuming of beef. Not at all an easy task, *Red Meat Republic* can therefore be an excellent model for other histories aiming to adopt a Wallersteinian commodity chain approach. However, the focus on the narrative comes at a price. While the narrative approach is thoroughly convincing, Specht's theory behind the story is rather weak. Neither does the author address any theoretical concepts of the commodity chain approach he terms a "hoof to table" history. This is especially disappointing as the book's quality would very well allow Specht to contribute to the advantages and disadvantages of such approaches and enter conversation with various concepts presented by e.g. Immanuel Wallerstein or Gary Gereffi[3].

Second, Specht's terminology at times remains rather blurry – especially when it comes to "commodification." While his hint that the "ability to crudely, but persuasively, represent an ecosystem for investment capital may be more important for initially integrating a landscape into an economy than actually transforming that landscape" opens an interesting point of departure for further research into commodity frontiers (116-117), his aim to develop a "theory of food as a commodity to understand how consumers' relationship with their food influence production" somehow disappears over the course of the book (20). While scholars like Karl Polanyi or E.P. Thompson have offered important concepts on exactly such an issue – (struggles over) the marketization of (fictitious) commodities and bread as a commodity with certain specifics – such theoretical approaches are hardly called on by Specht. Moreover, although recognizing "the importance of cultural meaning and sanitation to commodification" (223), it remains unclear what Specht understands by that term. Karl Marx maintained a "good" only becomes a "commodity" through exchange in Volume I of *Das Kapital*; since beef was a product exchanged on (local) markets before the Chicago meatpackers forged industrial beef processing and a national, centralized market in the 1870s/1880s, Specht's story is not at all one of the commodification of meat in the Marxist sense, it is much more a story about power in and regulation of a commodity market.

Thus, while *Red Meat Republic* aims to contribute to debates over capitalism, market and state *en passant*, a closer reading/incorporation of theoretical literature would have allowed a wider contribution to more general debates on capitalism, marketization, etc. that exceeds the challenging of rather US-specific historiographies. Nevertheless, Joshua Specht has presented a well-written, entertaining and most rewarding book that tremendously connects often individually-treated links of meat's commodity chain. Therefore, *Red Meat Republic* will certainly become a standard reference for both academics and non-academic readers interested in the history of food and capitalism.

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[2] Gergely Baics, Feeding Gotham. *The Political Economy and Geography of Food in New York, 1790–1860*, Princeton University Press 2016; Jan de Vries, *The Price of Bread. Regulating the Market in the Dutch Republic*, Cambridge University Press 2019.

[3] See Terence K. Hopkins/Immanuel Wallerstein, Commodity Chains in the World-Economy Prior to 1800, in: *Review* (Fernand Braudel Center) Vol. 10, No. 1 1986, 157-170; Gary Gereffi/Miguel Korzeniewicz (ed.), *Commodity Chains and Global Capitalism*, Praeger Publihers, Westport, CT 1994.

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