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VISUAL REPRESENTATIONS

HANDBOOK OF THE ANTHROPOCENE
IN LATIN AMERICA VI



 **CALAS**

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Gerardo Cham, Juan Arturo Camacho Becerra, Olaf Kaltmeier, Elissa Rashkin
(eds.)
Visual Representations – Handbook of the Anthropocene in Latin America VI

The Anthropocene as Multiple Crisis: Perspectives from Latin America

Editorial

The aim of the six-volume Handbook **The Anthropocene as Multiple Crisis: Perspectives from Latin America** is, first, to think about the Anthropocene from a particular region of the Global South. Thus, this Handbook offers a platform to discuss the multiple "anthropogenic" socio-environmental crises from a specifically Latin American point of view, without losing sight of their global and planetary dimensions. The second objective is to systematize, from the perspective of Latin American social sciences and humanities, the multifaceted environmental crises that reached and crossed the planetary boundaries of the earth-systems and led to the new geological time of the Anthropocene. In doing so, we generate an empirical basis for the genealogy of the Anthropocene in an unprecedented global region with key regional and historical differentiations.

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Gerardo Cham, Juan Arturo Camacho Becerra, Olaf Kaltmeier, Elissa Rashkin
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Visual Representations - Handbook of the Anthropocene in Latin America VI

[transcript]

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Under the direction of Olaf Kaltmeier, we set up an editorial office at Bielefeld University. The general coordination of this editorial office was in the hands of Luisa Raquel Ellermeier. Luisa, Omar Sierra Cháves, and Eric Rummelhoff organized the editorial process and proofread, translated, and revised all chapters. Rafael García Roncalla and Vinicius Aureliano Bellotto dos Santos were responsible for formatting the texts. Ann-Kathrin Volmer and Nadine Pollvogt organized the editorial conferences in the CALAS headquarters in Guadalajara, Buenos Aires, Quito, and San José de Costa Rica. They all did an outstanding job in making this Handbook a reality.

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The series also stands out with its aesthetic design. Fernando Efrén Sandoval Herrera has created a work of art for each of the volumes. Using these pieces, Leon Che Ernst Pöhler from BiUP has designed memorable book covers.

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General Introduction



Source: Fernando Efrén Sandoval Herrera (2021)

The Anthropocene as Multiple Crisis

Latin American Perspectives on Visual Representations¹

Olaf Kaltmeier, Eleonora Rohland, Gerardo Cham, Susana Herrera-Lima, Antoine Acker, León Enrique Ávila Romero, Juan Arturo Camacho Becerra, Virginia García Acosta, Anthony Goebel McDermott, Ricardo A. Gutiérrez, Regina Horta Duarte, Cecilia Ibarra, María Fernanda López Sandoval, Lourdes Sofía Mendoza Bohne, José Augusto Pádua, Elissa Rashkin, Heidi V. Scott, Javier Taks, Helge Wendt, Adrián Gustavo Zarrilli

The Anthropocene is probably one of the most disruptive concepts in contemporary science. It has the intellectual power to question ideas previously thought to be obvious, such as the modern-Western separation between nature and culture, because Earth's history no longer follows only natural laws but is shaped by the history of human societies. Conversely, these histories can no longer be understood without the inescapable consideration of planetary systems and their boundaries. Beyond its impact on academia, the emergence of the Anthropocene concept is a historical-political event, as it marks the global need not only to rethink but also to fundamentally remake the relationship between humanity and nature.

The concept of the Anthropocene has gained strength in the global public arena over the past 20 years and has been hotly discussed by the social sciences and the humanities for the past decade. The word was coined in 2000 by the Dutch atmospheric chemist Paul Crutzen and the U.S. American biologist Eugen Stoermer at a conference in Cuernavaca, Mexico. Both scientists observed the profound changes that human beings had caused to the environment. Based on this, they attempted to express the global reach of the great anthropogenic changes with the new term. Thus, the Anthropocene emerges as a new geological era in which humans introduce unprecedented amounts of CO₂ into the atmosphere through the massive use of fossil fuels. In addition, another major anthropogenic problem has been the large-scale extraction of non-renewable resources. Other processes by which human beings have come to change all spheres of the planet include plastic pollution, nuclear

¹ This introduction aims to provide the reader with an overview of the conceptual and organizational principles of this six-volume handbook on the Anthropocene in Latin America. To improve readability, we have dispensed with the usual academic references. In each article, the reader will find a detailed and individualized bibliography.

waste, ocean acidification, the extinction of species, the fossil energy regime, the depletion of water sources, and the massive use of agrochemicals and pesticides. All of this constitutes the multiple crisis of the Anthropocene.

Given the above, it is clear that the Anthropocene is more than just a new fashionable term to refer to climate change as it has been widely, yet incorrectly, understood through the media. Nor is it simply a new concept useful for comprehensively addressing known environmental problems, although these issues obviously play an important role in its understanding. The novelty of the perspective that led to the coining of the term “Anthropocene” is fostered by the technological and informational possibilities of Earth system sciences to collect and process data like never before since the 1990s. In this way, it was possible to make visible the alterations, or rather the anthropogenic damage, in all the systems of the planet.

This is not the place to present all facets of the reflections on the concept of the Anthropocene carried out in the social sciences and the humanities. For our purposes, it is sufficient to refer to debates that offer novel perspectives to understand the historical singularities of Latin America in the Anthropocene. In this regard, discussions have recently resumed and continued about the Anthropocene and its derivatives such as the Capitalocene, Plantationocene, Chthulocene, Necrocene, etc.

In this context, the Latin American debate is particularly useful when it comes to relating multiple environmental crises to various sociocultural crises related to capitalism, coloniality, and racism. Here, approaches to environmental justice, the ecology of the poor, Latin American environmental history, nineteenth and twentieth century Latin American critical thought, and the approaches developed by Indigenous, Afro-descendant, peasant, and/or feminist movements and communities become relevant. An example of this from the Andean region is the concept of *Buen Vivir* (Good Living), *sumak kawsay*, based on the idea of the need for a turning point, *pachakutic*, according to which the poor governance and immoral leadership of global neoliberal capitalism with its colonial foundations must be substantially overcome.

Planetary thinking in the Anthropocene can and should be approached differently depending on the places of enunciation embedded in different constellations of power. In this regard, our concern is to broaden the debate, which so far has been largely carried out predominantly in the Global North by the natural and Earth sciences, to include a perspective from Latin America rooted in critical humanities and social sciences.

The aim of this six-volume handbook, *The Anthropocene as Multiple Crisis: Perspectives from Latin America*, published by the Maria Sibylla Merian Center for Advanced Latin American Studies (CALAS), is, first of all, to think about the Anthropocene from a particular region of the Global South. In this way, this handbook offers a platform for discussing the multiple “anthropocenic” socioenvironmental crises and their possible solutions from a specifically Latin American point of view, without los-

ing sight of their global and planetary dimension. The second objective is to systematize, from the perspective of Latin American social sciences and humanities, the multifaceted environmental crises that have met and crossed the planetary boundaries of Earth systems and led to the new geological time of the Anthropocene. With this, we have produced an unprecedented empirical basis for the Anthropocene's complex genealogy in a specific region of the world – in this case, Latin America – with key regional and historical differentiations.

Thus, our perspective combines the already mentioned planetary dimension with a perspective that takes into account the local and regional specificity of ecosystems and socioenvironmental relationships in Latin America. The humanities and social sciences pose different questions in relation to the new geohistorical temporal layer of the Anthropocene. This task is by no means trivial. Rather, it is a multifaceted search process in which the initial assumptions of the definition of the Anthropocene in the Earth sciences are questioned, corrected, completed, and expanded. This starts with historical classification. The question of whether there is an epoch called the Anthropocene, and also of when it begins, was initially addressed by the Anthropocene Working Group (AWG) of the International Commission on Stratigraphy and was weighed according to geological considerations.

Based on the geological and socioecological evidence, 1950 has been proposed to be the year of the “Great Acceleration” despite the first defenders of the Anthropocene having proposed previous historical periods, such as the Industrial Revolution or the invention of the steam engine by James Watt in 1769. Reference may be made here to the smoking chimneys of Manchester factories. But precisely this origin narrative, based on the historical experience of the West, is criticized from a Latin American perspective. Manchester's industrial dynamics relied on the supply of cotton for textile production or sugar as a source of calories for the labor force. Both resources were produced in new plantation systems on the Atlantic coasts of America based on the introduction of neobiota and the labor of enslaved people forcibly brought from Africa. Equally worth mentioning is the mega-mining that emerged during the European colonization of Latin America, symbolically expressed in the system of Potosí, the silver mining center in present-day Bolivia. The silver mined there laid the foundations for the capitalist development and subsequent industrialization of Western Europe. Thus, mega-mining and plantation economies do not constitute mere gradual changes in human use of the environment, but rather mark a fundamental and planetary rupture in the social metabolism, that is, in the management, use, and exploitation of natural resources.

Recognizing the deepest historical roots of the Industrial Revolution leads us to reconstruct a genealogy of the Anthropocene in which it cannot be separated from coloniality, the rise of the capitalist world system, and racial capitalism. Thus, 1492, the year of European contact with the Caribbean and the Americas, is a turning point in world history and represents a fundamental rupture for the Indigenous peoples

and cultures of America. Along with the conscious and unconscious introduction of new plant and animal species, European pathogens arrived in America, together with the colonial violence against Indigenous peoples, a massive number of fatalities, and the consequent cultural ruptures. Ninety percent of the Indigenous population died as a result of the conquest, either through direct violence, the destruction of their living conditions, or the introduction of new germs. It was one of the greatest genocides in history, wiping out 10 percent of the world's population. The abandonment of a large part of the agricultural area and the subsequent spontaneous reforestation caused a drop in global temperature at the beginning of the seventeenth century, coinciding with the beginning of the Little Ice Age – responsible for extreme atmospheric events on the planet.

In biological terms, the Columbian Exchange was so fundamental that biologists set 1492 as the milestone for the categorization of neophytic plants, distinguishing them from plants established in biomes (archaeophytes). With the Columbian Exchange of species, a homogenization of flora and fauna took place between the American continent, Africa, and Eurasia.

The criticism of European/Western capitalism as a driver of the Anthropocene goes hand in hand with a radical critique of European/Western modernity and the recognition that the Anthropocene puts an abrupt end to the European teleological notions of development, progress, and civilization. We stress the criticism of the leveling effect of the Anthropocene concept in the way that it has been coined by the natural sciences, insofar as it implies that the human species is responsible for the great transformations of the environment to which the concept refers. The danger of this approach is to ignore not only the sociohistorical differences between the Global North and the Global South but also the differences between different ethnic and “racial” groups (even if we acknowledge the fact that there are no biological races), as well as those between social classes within the respective regions of the world, especially in terms of consumption patterns or even cosmological representations.

Not all human societies have a predatory approach to the non-human environment, nor do all humans have the same ecological footprint. Perceiving human beings as a single species that destroys ecological environments ignores asymmetric power relationships and how they influence interactions and practices between human beings and the environment. Some voices from the humanities, however, are beginning to question the absolute rejection of the species category. They advocate the cultivation of a dual perspective that addresses not only the asymmetries of power that fracture human experiences and histories but also the geobiological history of the planet, where the human species constitutes a minority life form, despite having undoubtedly become a geological force with a profound impact on the entire planet.

In this sense, the notion of the Anthropocene requires us to question precisely the gap between the scientific idea of a single planetary system, the universe, and the

multiverse of forms of existence and life on Earth. Despite recognizing and stressing the need for planetary thinking, this handbook highlights the current disconnect between global quantifications of systemic limits and the political and social realities historically constructed in the territory. This is where the handbook revisits the concept of planetary boundaries, approaching it from the social sciences and the humanities. In other words, while Earth system sciences conceive of the planetary from a satellite's point of view, we will get closer to the ground without completely losing our planetary perspective. We will reduce the spatial scale to the regional and local while also adding temporal depth, which we will then attempt to reconnect with the planetary perspective. This approach is necessary if we want to investigate the impact that different regions had on the acceleration or slowdown of the planetary rise of the Anthropocene during different historical conjunctures. It is also relevant for keeping the focus on the extremely unequal socioenvironmental dynamics of the Latin American Anthropocene, where European/white settlers "naturalized" Indigenous and Afro-descendant peoples as exploitable resources.

On the other hand, the Anthropocene's genealogy is invariably constituted as a history of conflicts and crises, having developed in Latin America from the beginning of the Conquest to the present day in a very violent way. However, those who were subject to such violence should by no means be understood only as passive victims. In this particular region, there have always been creative social responses to overcome multiple socioecological crises. From our perspective, these approaches are an integral part of a genealogy that cannot be conceptualized solely as a linear history of decline.

Through these debates between the editors of the handbook, we identified the most important thematic axes for understanding the Anthropocene's genealogy. We enter into a critical dialogue around the general approaches of a planetary Anthropocene, expressed, for example, in the debate on planetary boundaries and the historical and contemporary experiences and reflections proposed by the social sciences and Latin American environmental humanities. Faced with the continuous conjunctures of colonization from the Conquest to current extractive practices, the importance of deforestation, and the dynamics of the technosphere's advance, especially in urban zones, we identify **land use** as a paradigmatic theme for understanding the Anthropocene from Latin America. For this reason, we dedicate the first volume of the series to this topic. Within this theme, we are interested, firstly, in aspects of environmental change associated with different forms of land use, such as planting, ranching, livestock, or the large-scale clearcutting of forests for infrastructure projects. In addition, we are especially interested in the interconnection with extremely unequal and sometimes violent social processes and crises that originate from these aggressive land uses.

Biodiversity is another central aspect of the Anthropocene discussion. Latin America and the Caribbean are home to 40 percent of the world's biological diversity

and seven of the world's 25 biodiversity hotspots, including six of the 17 megadiverse countries and the second-largest reef system on the planet. This region also has Indigenous forms of management, as well as a long history of preservation that is threatened by dynamics of commodification and dispossession. For this reason, a volume is dedicated precisely to biodiversity.

A research project on the Anthropocene, such as the one we present here, must necessarily pose questions related to **climate change** without reducing it exclusively to the global variation of the Earth's climate due to natural causes. The Anthropocene has caused unprecedented changes in this regard in Latin America, often linked to social conflicts and demands for environmental justice. On the other hand, the issue of **water** is inevitably related to climate change and raises important questions on issues such as human consumption and pollution. This vital resource has generated numerous socioenvironmental conflicts during the Anthropocene. Therefore, two volumes in this series are dedicated to climate change and water, respectively.

Due to its importance since the beginning of the conquest, we dedicate a volume to **mining and energy**, which addresses mining extractivism from the silver of Potosí to the lithium of the Altiplanos' salt flats. Mining is inextricably intertwined with the energy sector and its various regimes. Both are linked to specific social processes and structures, in particular, the extreme exploitation of labor leading to slavery, as well as the displacement of Indigenous populations in favor of the use of fossil, or even renewable, energy. These tensions and contradictions comprise the focus of our volume on the subject.

In the discourse on the Anthropocene in the humanities and social sciences, the visual and artistic representation of the concept has occupied a special place, as the question of what images we use to narrate the Anthropocene emerged quite early on. For this reason, we are dedicating a special volume to the **visual representations** of the Anthropocene's genealogy.

In a complex project such as this handbook series of the Anthropocene from Latin America, it seems appropriate to provide guidelines to facilitate reading for all kinds of audiences. The handbook is neither a simple edited volume nor a compendium. Rather, it is organized according to a conceptual matrix in order to understand and address the Anthropocene's genealogy from Latin America. Therefore, all volumes have the same basic structure. Each is structured by a temporal axis divided into three historical periods: the colonial era, the midst of the nineteenth century to 1950, and 1950 to the present day. In turn, each of these respective periods is preceded by a general historical introduction to the topic. This allows for a contextualization from a broad Latin American perspective, making it easier for the reader to navigate the general debates. After this contextual introduction, the main entries follow.

The organization and scope of this sixth volume differ from the five preceding volumes of the handbook. In the previous volumes, each entry synthetically dis-

cusses the genealogy of the Anthropocene with respect to the volume's theme in five broad regions of Latin America. In this final volume on visual representations of the Anthropocene, however, we opted for a more specific and singular approach, in which shorter entries dialogue with specific images (photograph, painting, sculpture, etc.) to reflect on problems related to the Anthropocene.

Spanning the length and breadth of the Latin American continent, the reader will find for each of the three historical periods – the colonial period, mid nineteenth Century to 1950, and 1950 to today – five regional sections covering the Southern Cone, the Andes, the Amazon, Mesoamerica, and the Caribbean. Each of these sections contains four essays addressing emblematic visual representations of the Anthropocene.

To explain the structure of the handbook's matrix in more detail, we first present in this general introduction a concise characterization of the three periods in question, placing special emphasis on the phases of intensification and acceleration of Anthropocenic dynamics. Secondly, we characterize the regions of Latin America and the Caribbean utilized to analyze Anthropocenic phenomena beyond the methodological nationalism that still predominates in the social sciences. And thirdly, we explore the different elements and variables that are covered in this volume on visual representations of the Anthropocene.

Periods of the Anthropocene's Genealogy in Latin America

Since its proposal in 2000 by Paul Crutzen and Eugene Stoermer, the Anthropocene has now begun the process of being ratified as a new geological epoch in Earth's history. Although the Anthropocene Working Group, a subgroup of the International Commission on Stratigraphy, is interdisciplinary, the argument for the ratification and acceptance of a new epoch is purely geological. In other words, for the Commission to recognize the Anthropocene, it needs, first and foremost, stratigraphic evidence of such planetary human influence on all natural systems. That is to say, it looks for a marker, the so-called "golden spike," in the natural record of soil and rock layers, as well as the atmosphere. Evidence from Earth system science and human history points to a post-World War II marker in the 1950s. In 2023, the Anthropocene Working Group (AWG) proposed Lake Crawford, in Canada, as the Golden Spike, given that the radioactive fallout from the atomic bomb tests of the 1950s and other anthropogenic changes in the environment are especially marked here. Although this proposal has not been accepted by the Geologists of the Subcommittee on Quaternary Stratigraphy in 2024, it coincides with the beginning of a phase that members of the AWG and associated researchers have dubbed "The Great Acceleration." This time reference, from 1950 to the present, is included as the last of three axes that we have identified as relevant to a specifically Latin American perspective

on the genealogy of the Anthropocene. However, we argue that to understand the process that led to the geological definition of the Anthropocene, it is necessary to grasp dynamics and processes prior to the 1950s.

From a Latin American perspective, we propose tracing the Anthropocene's genealogy to the European Conquest of the American continent starting in 1492 with the Columbian Exchange, the plantation system, and mega-mining. Thus, the colonial era in Latin America is understood as the phase of intensification of important features in the genealogy of the planetary Anthropocene. A second phase begins with the end of the colonial empire and the processes of independence in America. In addition to profound political changes, this phase encompasses an accelerating moment for the historical construction of the Anthropocene, especially from the 1860s to the world economic crisis of 1929. Finally, we include in a *sui generis* manner the Anthropocene phase from 1950 to the present day. Within this phase, it is possible to detect an intensification of anthropogenic factors in Latin America, especially since the 1960s with the Green Revolution and oil exploitation, as well as the eighties with neoliberal policies that accelerated extractive economies and mass consumption.

Colonial Period

1492, the year of European contact with the Caribbean and the Americas, marks a turning point in world history. For the Indigenous peoples and cultures of America, it represents a fundamental rupture and even the end of their worlds. From the perspective of the European conquerors, the so-called "New World" emerges, altering the existing medieval vision of the world. For the first time, the imagination of a global "single world" arises. At the same time, the conquest and colonization of the Americas become the starting point for the formation of a capitalist world system.

In this way, 1492 marks a milestone in environmental history. An intercontinental exchange of biota begins that fundamentally changes both the "Old" and the "New World." Plants from America, such as potatoes, tomatoes, or corn, leave their mark on European cultures and become national foods. At the same time, cane sugar makes its way into Europe and provides the energy reserves for the subsequent Industrial Revolution. The Americas today are hard to imagine without the biota introduced by European colonizers, from bananas, citrus fruits, and coffee to chickens, cows, pigs, sheep, and horses.

In 1492, a large-scale socioenvironmental transformation began, from landscapes characterized by Indigenous land use to Europeanized ones. From this abrupt alteration arises the accumulation of extractive capital. It is important to recognize that, clearly, the Caribbean and American environment was not only extensively modified by Europeans, but also by the numerous and diverse Indigenous populations that inhabited both continents, as well as the Caribbean archipelago for millennia before. Our argument for 1492 as a turning point is one of scale and

intensification. In other words, with the arrival of European contact, specific practices of exploitation and extractivism that were unprecedented on the continent became widespread. In fact, the introduction of new species favored the conquest of Indigenous populations, as well as the domination of vast rural areas of the American territory.

One of the “anthropocenic” processes of the colonial phase was the massive reforestation that occurred after the genocides of Indigenous populations as a result of pathogens and European violence. The natural scientists who have modeled this process argue that the disuse of cleared agricultural space led to a large-scale regrowth of forest cover – a massive carbon sink – which, in turn, tangibly cooled the climate around 1610. This theory is known as the Orbis Spike Hypothesis and has also been suggested as the beginning of the Anthropocene. This is a highly controversial topic in climate science, given that this period is also associated with the beginning of the Little Ice Age, but it raises important questions about the relationship between human societies and the Earth system. In any case, the continuity of the colonial process reversed this environmental dynamic, producing extensive deforestation.

On the other hand, the colonial era left as a legacy the development of the plantation system that some academics have called the Plantationocene. In the plantations, systematic techniques of overexploitation of nature were developed, connected also to the excessive exploitation of subaltern labor, that is, Indigenous and African slavery. Human muscle strength (African or Indigenous) was violently exploited as energy to power these plantation machines, thus connecting to the energy history of the Anthropocene’s formation and to the process of building European modernity from the margins. The plantation system became an epicenter of confluence between early capitalism and racism, becoming part of the Anthropocene’s genealogy. Starting in the last years of the eighteenth century, this process of colonial occupation was decisive in abolishing the natural limits of the solar energy economy in the imaginary of modern capitalism, opening the way for the unrestrained and unlimited expansion of extractive frontiers. This made overexploitation of the land a fundamental characteristic not only of the Americas and Europe but of the global capitalist system.

From the Mid-Nineteenth Century to 1950

During the nineteenth century, the industrial model developed in the European eighteenth century was consolidated. Although the Latin American countries that were becoming independent sought their own ways to carry out social, political, and economic transformations, such transformations were part of global and international struggles of an accelerated imperialism and nationalism. Political and economic changes brought about social transformations in the forms of production, the management of natural resources, and the dimensions of exploitation,

accelerating towards the end of the nineteenth century. Although the break with the colonial model was gradual, the oligarchies acquired greater power through the Latin American independence processes, dividing and distributing capital together with the territories of production and the complicity of the landowners.

Nationalism, represented in forms of development, also fragmented territories and the uses of natural resources. New geographical and naturalistic explorations and a new conquest of the environment marked the beginning of the nineteenth century. This century is also considered the era of the second globalization, entailing the consolidation of unequal ecological exchange. There is talk of a second Columbian Exchange related to a global metabolic fracture. Based on this logic, exchange networks were consolidated. This involved not only the exchange of raw materials for industrialized goods, but also the trade of difficult or impossible to replace goods – such as energy, soil nutrients, and biodiversity – for rapidly replenished goods, such as industrial products.

The period between the 1860s and the world economic crisis of 1929 served as a phase of economic liberalization and modernization associated with a new integration of the region into world capitalist structures and a strong reinforcement of extractive economic sectors. Within the framework of the handbook, it can be understood as a phase of intensification and acceleration of the Anthropocene, comparable only to the metabolic rift of the Conquest. With the exception of a few regions, the predominant agricultural model was the exploitation of vast *haciendas* and plantations. In addition, this period is characterized by a process of internal colonization and land grabbing in peripheral regions, referred to by some historians as the Second Conquest. The extraction of raw materials such as rubber, henequen, and mate gave rise to new estates (*latifundios*), export-oriented elites, the establishment of feudalized forms of labor exploitation, and the rapid destruction of natural landscapes.

State formation played a crucial role in the structure of the nineteenth century, marking the definition of new forms of land use and outlining enclave economies in various regions of Latin America. This process was strengthened by new technologies such as steam, electricity, and the subsequent modern means of transport derived from these technological innovations. In the economic transformation of independent Latin American countries, foreign capital investment played a key role, both in the exploitation of agricultural land and in mining. Foreign companies from the United States, Great Britain, France, and Germany accelerated economic and political transformations, directly impacting land exploitation.

With regard to land tenure, the transformation of properties contributed to the displacement of Indigenous communities and the cooptation of others who had been exploited under conditions of semi-slavery in the hacienda system. This phenomenon was observed in different regions of Mexico, the Andes, and the *estancias* (ranches) of the Southern Cone. In Caribbean countries, independence came late and led to new dictatorships at the beginning of the twentieth century.

Demographic growth went out of control in some regions, leading to a separation and even segregation between the rural and urban worlds. The motto of “Order and Progress” regulated business and daily life in the nineteenth century. This included hygiene and control measures conducive to new forms of segregation and inequality, which in turn had negative impacts, both on Indigenous communities and on increasingly urbanized populations. It should be noted that at the end of the nineteenth century, the first responses emerged to mitigate anthropogenic effects. Conservationism was consolidated with the creation of natural protected areas in several countries. The biotic flow began to be controlled – albeit under a reductionist conception of conservation spaces – either as untouchable and unaltered areas, intended as pristine or as reservoirs of exploitable resources in the future.

From 1950 to Present

The period from the mid-twentieth century to the present is known, from an anthropogenic perspective, as the Great Acceleration. It is a period marked by the accelerated consumption of natural resources, raising serious questions about the viability of the Earth system. This phenomenon is the result of important transformations in the world economic system, including the exponential growth of gross domestic product (GDP), population growth, increasing urbanization, energy production and consumption, and the use of fossil-based fertilizers, among other variables.

All of these large-scale socioeconomic transformations have drastic effects on the components of the planetary system beyond the expected natural variations. In the context of Latin America, these changes are reflected in the modification of the phosphorus and nitrogen cycle, which has resulted in the eutrophication of rivers and soil degradation due to industrial agriculture. In addition, an alteration has been observed in the carbon cycle with the loss of sinks due to deforestation and a dangerous increase in carbon dioxide and methane emissions from agricultural sources. Also, changes have been registered in the hydrological cycle with more frequent extreme events of droughts and floods and greater impacts due to the vulnerability of productive systems and urban habitats. Furthermore, there has been an increasing demand for water reservoirs for irrigation and hydroelectricity. Another relevant impact is the simplification of ecosystems and agroecosystems, which has led to a generalized loss of biodiversity.

Since the mid-twentieth century, Latin American governments and elites have assumed changing roles in driving their nations' development models and schemes. In the first stage, coinciding with developmental theory, production and consumption were oriented towards the “catch up,” the theory of rapidly reaching the progress and well-being of Euro-Atlantic societies. During this period, local elites and governments adopted a planning approach to the future, with a programmed increase in the scale and pace of production. The import substitution model was

implemented, allowing some countries in the region to satisfy the domestic market and to industrialize moderately: Brazil, Argentina, and Mexico being the most prominent. The Economic Commission for Latin America (ECLAC) was created in 1948, and the dependency theory was developed, which allowed the region's situation of marginalization to be explained from a structuralist perspective.

Towards the end of the 1990s, with the wave of neoliberal policies across Latin America, the role of the state was consolidated as a facilitator and intermediary for private transnational capital. Under this scheme of welfare political control, companies were able to freely access natural resources and territories through mechanisms such as public-private partnerships. In parallel, selective integration into the world market based on the exploitation of natural resources encouraged agroindustry and extractivism, such as mining, agroforestry, or fishing. With the new millennium, progressive or neodevelopmental governments spread throughout the region. Although they assumed greater roles of state control and planning, these governments facilitated the arrival of global capital mainly oriented to the production and export of raw materials associated with the commodity boom, aimed at increasing the public budget allocated to social policies. Despite their differences, all these models have had in common the primary target of economic growth as the governing axis of the economy, as well as public policies aimed at strengthening the economic bases of the Great Acceleration.

In this period of acceleration, an increase in the rate of extraction of natural resources for the world market has been seen, giving rise to what are known as old and new extractivisms that include the mining, agriculture, forestry, fishing, and urban sectors. In addition, there has been a new Green Revolution characterized by the use of monocultures based on transgenics, the massive use of harmful agrochemicals, and intensive water consumption. Large areas of the region have also been deforested for the expansion of the agricultural frontier, leading to a further significant loss of biodiversity.

Another crucial aspect of the Great Acceleration has been the need to increase the production and diversification of energy sources. In Latin America, there has been an early use of hydroelectric energy, creating profound environmental impacts, both in the flow of rivers and in the production of greenhouse gases that have contributed to global warming. Widespread rural and urban electrification processes have been favored. However, hydrocarbon extraction has also played an important role. New frontiers of oil exploitation, whether offshore (the Brazilian coast and the Gulf of Mexico) or in the Amazon rainforest (particularly in Peru and Ecuador), have helped to increase the supply of fossil fuels in the global market and to delay the international energy transition. In fact, the accelerated integration into global markets has led to the advancement of production frontiers towards non-anthropized areas, causing significant impacts on natural ecosystems and local communities. In addition, there has been a growing presence of financial capital and fictitious economies,

characterized by cycles of financial crisis. During this period, internal, regional, and international migration has taken on a new dimension in terms of quantity and quality. In particular, regional migration has intensified due to greater obstacles blocking movement to the countries of the North, although there are still migratory flows to those regions. On the other hand, water management has been oriented towards intensive extraction, both in the industrial and agricultural spheres, generating significant pollution of the region's main hydrographic basins.

Anthropogenic climate change and natural climate variability are also prominent phenomena during the Great Acceleration. The Latin American region is one of the largest terrestrial carbon sinks, in part due to the existence of biomes with less anthropogenic transformation, such as the Amazon, the Mayan Jungle, and Patagonia. Greenhouse gas emissions, however, have not been kept below the sinks. Meanwhile, the increase in the scale of agroindustrial and urban enterprises has produced a continuous increase in waste generation and pollution. During the Great Acceleration, an increase in economic and social inequality has been observed in Latin America, which has meant that different social groups have different levels of destructive capacity. A significant change has been the relative loss of the states's monopoly on the use of force, leading to the emergence of organized crime groups that are involved in the processes of production and environmental predation, controlling territories in both rural and urban areas. At the same time, Latin America has witnessed the rise of resistance movements and proposals for local alternatives, especially around feminism and environmentalism.

Technological changes and transformations in communications have been profound and extensive during this period. Satellization and fiber optics have revolutionized communication media, allowing for a diversity of messages and greater appropriation of the media by subalternized movements and organizations. Nevertheless, there has also been a concentration in the distribution of cultural messages, posing challenges in terms of the democratization of information and culture.

In conclusion, the Great Acceleration has been a period of intense socioeconomic and environmental changes in Latin America. The accelerated consumption of natural resources, development models oriented to economic growth, extractivism, water management, anthropogenic climate change, inequality, and migration are some of the key aspects that define this stage. Latin America faces significant challenges in achieving a sustainable development that guarantees the preservation of its natural resources and the well-being of future generations.

Figure 1: Anthropocene Regions in Latin America



Source: Own Elaboration.

Anthropocene Regions in Latin America

Regarding space, the handbook combines the perspective of planetary boundaries with a regional approach that takes into account the local and regional specificity

of climates, ecosystems, and socioenvironmental relationships. The operationalization of this regional approach for the handbook project poses a complicated task. In macro-regional terms, the handbook is limited to what today corresponds to Latin America, including South America, Central America, Mexico, and the Caribbean. However, given the wide variety of climates and ecosystems in this vast region, we have proposed to define smaller and, at times, even larger areas. To this end, we do not want to rely solely on the geopolitical units of nation-states – important entities for the political regulation of the environment. Often, such territorial divisions ignore natural boundaries, while, at the same time, climate extremes tend to disregard human-created national borders. Finally, from a heuristic standpoint, we chose to define five areas that we consider suit what we would like to show in the six handbooks and that, according to our approach, are characterized by a certain ecological and cultural coherence without national borders. From south to north, these regions are as follows: the Southern Cone, the Andes, the Amazon, Mesoamerica, and the Caribbean.

Southern Cone

The Southern Cone can be defined in a combined manner. In biophysical terms, its hydrographic network, which corresponds to the Rio de la Plata Basin, stands out. In geopolitical terms, it is defined by historical processes that determine flows of people and material wealth. While still taken into account, these flows transcend the national borders of neighboring states. From a political-administrative point of view, the definition of the Southern Cone has varied. In the colonial past, the delimitation of the viceroyalty of the Rio de La Plata and the Jesuit-Guarani territory outlined a region. The Southern Cone would encompass Uruguay, Argentina, Chile, Paraguay, southern Brazil, and even the southeastern tip of Bolivia, forming a region with common structures in a heterogeneous scenario. More recently, the Southern Cone acquired geopolitical meaning in the seventies, as well as a commercial and customs significance with the creation of Mercosur in the nineties.

In the colonial period, the region was an important corridor that linked the silver mines of Potosí to the Atlantic. Much of the territory of the Southern Cone had not yet been conquered and controlled by the Spanish Crown, but was kept in the hands of various Indigenous peoples. The southern part of the region, especially, was controlled by the Mapuche, whom the Spanish Crown could not conquer. During the colonial period, the relationship between Indigenous peoples – particularly the Guaraní in south-eastern Bolivia, southern Brazil, northern Argentina, and Paraguay – was fundamental for inter-ethnic relations and landscape transformations, especially due to the Jesuit presence until their expulsion at the end of the eighteenth century.

This geopolitical situation changed dramatically in the second half of the nineteenth century. We can speak in the Southern Cone of a Second Conquest, which found its highest expression in the bilateral Chilean-Argentine military campaign against the Mapuche people in the 1860s.

Parallel to this violent grabbing of Indigenous territories, a massive process of European immigration took place. In the middle of the nineteenth century, the Southern Cone states received a large number of settlers of European origin. In fact, the Brazilian Southeast, especially the megalopolis and the interior of São Paulo and even Rio de Janeiro, can be integrated into the Southern Cone due to its similar characteristics in terms of economic structures and the important role played by European migrations in its overall human composition. Colonial and neocolonial ambitions to create “Neo-Europes” are reflected in many city names, urban landscapes, dietary habits, and agricultural practices in the Brazilian Southeast. From a European perspective, mass immigration was a biopolitical solution for the rural population, impoverished and made redundant by industrialization.

The environmental characteristics of the Southern Cone region vary widely due to its extensive territory and geographical diversity. The region is home to a great diversity of ecosystems, including subtropical rainforests, temperate forests, steppes, grasslands, wetlands, deserts, and glaciers. On this backdrop of complexity, heterogeneity, and abundance of natural resources, there are some structuring features of the territory that provide it with identity. A very important one is the presence of its three main rivers: Paraná (4,352 km), Paraguay (2,459 km), and Uruguay (1,600 km), which make up the Río de la Plata basin. These rivers are among the largest in the world, while the Río de la Plata estuary is the widest in the world.

The La Plata Basin, the central part of the Southern Cone, integrates a large part of the territory of Brazil, Argentina, and Uruguay, as well as all the territory of Paraguay. In this vast territorial expanse, various biomes or ecoregions converge, each with very distinctive characteristics. Some have already undergone severe transformation or degradation, while others are on the path to degradation: the Paranaense Forest, the Pantanal, the Chaco, the Iberá Wetlands, the Pampas Grassland, the Delta, etc. All these are unique ecosystems globally and hold significant ecological value. One of the largest wetland systems in the world is also in its territory, including the recharge and discharge areas of the Guaraní aquifer.

Historically, the colonization of the interior took place mainly through the Paraná, Paraguay, and Uruguay rivers. These also form the transportation routes that today connect the region to the world market. Large quantities of soybeans, cereals, meat, and iron ore are shipped here.

But it is not only the La Plata Basin that gives the Southern Cone its identity. In turn, a second integrating pillar of the region is the presence of the Andes, as an axis that structures a specific space and a fundamental part of the territory. Chile to the west and the Andean regions of Argentina and Bolivia to the east create a

socioenvironmental-cultural framework of notable specificities. In the case of the Southern Cone, the southern Andes, with their two sub-regions, are key. First, the arid Andes – from the north of the Chilean-Argentine border (Cerro Tres Cruces) to the Pino Hachado Pass in northern Patagonia – stand out for their aridity and their great heights, such as Mount Aconcagua (6960 m MSL). The Atacama Desert is an ecosystem characterized by its extreme drought, with precipitation not exceeding 18 mm per year. It is a subregion with intense geopolitical and socioenvironmental conflicts in which, as a result of productive activities, considerable changes have been observed in the natural environment, related to mining activities, such as large-scale copper and lithium mining. These metals have become emblematic of the new mining impetus in the triangle of deposits formed by Chile, Bolivia, and Argentina. In this region, there are also a series of socioenvironmental problems, which can be interpreted as the result of human-induced alterations to the natural environment that have affected the population. The second sub-region is the Patagonian Andes, extending south of the Pino Hachado Pass with the Patagonian Andean forest. In southern Argentina and Chile, we find Patagonia, which extends from the Colorado River in Argentina to the Strait of Magellan in Chile, covering approximately 1,043,076 km² in total. The strait, as a natural inter-oceanic passage, saw great commercial activity until the inauguration of the Panama Canal at the beginning of the twentieth century. Another view of this region is from the fragmented and insular coastal edge connected to Antarctica, with a population attentive to maintaining sovereignty flags.

Faced with the vastness of resources, the notion of dispute has been present in the various territories of the Southern Cone, from Gran Chaco to Patagonia and the Southern Andes, the land where colonists exercised sovereignty by eradicating the aborigines. The genocide of the original peoples was accompanied by the destruction of the ecosystems in which they lived. Further west, in Chilean territory, another dispute: the resistance of the Mapuche people to the advance of the Chilean army from the north and the colonists from the south. This conflict remained active for much of the nineteenth century and does not seem to be fully resolved. Conflicts over Indigenous territories are still active and are exacerbated by interest in mining areas, the southern sea for salmon farming, or the rivers for hydroelectricity, among other resources.

The Southern Cone has been blessed with an enormous variety of flora and fauna and extensive ecosystems. However, rapid population growth, industrial expansion, mining, agriculture, forestry, and large-scale hydraulic engineering projects have caused great territorial deterioration and strong socioenvironmental conflicts throughout history. This history is indicative not only of the abundance of natural resources and the natural productivity, goods, and services provided by these ecosystems but also of the tensions, imbalances, and conflicts that their exploitation has caused throughout their historical development. In conclusion,

the Southern Cone presents itself as a region rich in biogeographic and cultural diversity, marked also by significant environmental and socioeconomic challenges. The sustainable management of its natural resources, the preservation of its unique ecosystems, and equity in the access and use of these resources are key elements for a future development that guarantees the prosperity of the region and the well-being of its inhabitants. A deep understanding of the region's environmental and social history is essential to address current challenges and build a more sustainable future for the Southern Cone.

Andes

The Andes region encompasses the countries crossed by the Andes Mountains, located in the tropical zone of South America, between 11° North and 27° South latitudes. In administrative terms, it includes the south of Venezuela, Colombia, Ecuador, Peru, and Bolivia, as well as the tropical parts of the Argentine and Chilean extreme north. From a natural point of view, the region has common elements in relief, altitude, and climatic behavior, but with significant variations. While the northern areas of the Andes experience two rainy and two dry seasons, the central Andes are characterized by only one rainy and one dry season.

The Andes Mountains are divided into two main mountain ranges: the Cordillera Negra in the west and the Cordillera Blanca in the east. These are connected by transverse mountain ranges and their valleys, as well as by the elevated lands of the páramo in the north and those of the Altiplano, a wide plateau that reaches its largest extent in Bolivia. The great elevational variation of the Andean region, which ranges from sea level to heights of more than six thousand meters, creates several altitudinal floors with different ecological characteristics. The climatic influence of the El Niño-phenomenon and the Humboldt marine current, which circulate along the Pacific coast, also translates into climatic diversity along the latitudinal gradient. These features range from very humid ecoregions on the North Pacific coast, such as the Colombian Chocó, to desert ecoregions on the Peruvian coast.

The Andes are home to several ecoregions that are internationally recognized as biodiversity hotspots. In fact, the region constitutes a complex mosaic of more than 130 ecosystems, including páramos, punas, and Andean valleys, with high levels of biodiversity. The tropical Andes are a leading region in endemism worldwide, with an estimated rate of more than 50 percent in plant species and more than 70 percent in fish and amphibians. Thus, it is the region with the greatest diversity of amphibians in the world, with around 980 species, 670 of those endemic.

When we refer to the Andes, we mean three diverse geographic zones that comprise the Pacific coast, the Andes, and the Amazonian foothills. The region's diverse ecologies have been used and shaped by humans for more than 14,000 years. The formation of complex human societies based on agriculture dates back approximately

one thousand years before the Inca expansion in the fifteenth century. On the coast, the construction of monumental structures and urban centers in several valleys of the central and northern coast of Peru, such as the Supe Valley, cannot be comprehended without taking into account the maritime resources provided by the Humboldt Current, especially the rich fishery. The key characteristics of Andean societies, such as the specialization of social roles, the emergence of formal belief systems, the increase in food production, and technologies for systematic data recording, are evident more than a thousand years before the Incas began their imperial expansion in the fifteenth century.

Over the millennia, Andean societies in the mountain range have employed diverse strategies and technologies to survive and thrive in a challenging physical environment. These strategies include the construction of irrigation systems and terraces, innovations that enabled the spatial and seasonal expansion of agriculture. They also facilitated the proliferation of species suitable for agriculture, such as corn and potato varieties, as well as the domestication of camelids. In addition, Andean societies promoted demographic expansion, especially in the mountain range. These technologies were complemented by the emergence of dispersed settlement patterns, allowing communities to take advantage of a wide range of ecological zones at different altitudes, with their diverse available resources. Although these strategies fostered the self-sufficiency of many communities, the Incan imperial expansion introduced a policy of integration evidenced in the construction of an extensive road network, as well as in the relocation of ethnic groups, and the storage and distribution of food, textiles, and other goods.

From the imperial scale to the level of the *ayllus* – the basic social units in Andean communities – existing physical infrastructure and organizational practices formed the initial basis of colonial society after the invasion of the Spanish conquerors. However, the prolonged turbulence of the conquest, aggravated by epidemics and depopulation processes, caused the deterioration of road, irrigation, and cultivation systems in many areas of the Andean territories.

On the other hand, the viceregal policy of introducing large-scale mining manifested itself dramatically in silver mining in Potosí, an industry that emerged as the epicenter of large continuous movements of forced and free Indigenous workers, as well as goods. This restructured communities in the surrounding provinces and, among other environmental effects, led to deforestation. The appearance of mega-mining during the colonial regime marked an acceleration point in the Anthropocene, with its collateral effects of excessive land and water use, deforestation, and pollution.

Mainly in the northern Andes and the eastern foothills, the colonial exploitation of gold deposits, which often relied on enslaved Afro-descendant workers, accompanied silver mining. Whereas the extraction of precious metals was crucial during the colonial era, the second half of this period witnessed economic diversification

in many parts of the Andes. Although the wars of independence in the nineteenth century brought about political and social changes, the exploitation of primary resources remained the main economic base of the new Andean republics. In Bolivia and Peru, the decline of mining during the wars was followed by a process of recovery and transformation, driven by foreign investment, industrialization in the Global North, and the introduction of machinery powered by steam and electricity in many mining sites. Overall, trends toward intensification and expansion of mining operations have continued into the twenty-first century in response to growing global demand for a variety of metallic and non-metallic minerals.

In all the countries of the region, the rise of the oil industry, especially during the last five decades, represents a parallel intensification process in the extraction of subsoil resources. The mining, oil, and gas industries, dominated in many cases by transnational corporations, have been responsible both for severe ecological degradation in many areas of operation and for the production of socioenvironmental conflicts. At the same time, agricultural industrialization has had diverse impacts on the Andean region since the second half of the nineteenth century. These include cacao plantations in Ecuador, coffee plantations in Colombia, cotton and sugarcane plantations in Peru, and the unrestrained exploitation of seabird guano off the Peruvian coast, followed later by nitrates, to promote the development of intensive agricultural systems in the North, especially in Great Britain and the United States. This transfer of resources marks a profound metabolic rupture in Andean ecosystems.

The agrarian reforms of the 1960s and 1970s mainly caused a modernization of the agrarian structure, including the introduction of the agrochemical packages of the Green Revolution. With the implementation of neoliberal policies that began in the 1980s, the orientation towards exports intensified, giving rise to new agroindustries, such as the expansion of African oil palm, especially in Colombia and Ecuador. This was alongside the more traditional monocultures of coffee and bananas, which have produced a great deal of deforestation.

In the coastal valleys of Peru, the industrial-scale cultivation of a variety of agricultural products for external markets contributes to the worsening of the water deficit faced by many communities. Local or regional conflicts over water and other vital resources are intertwined with the impact of anthropogenic climate change at the trans-Andean level, driving, among other things, the retreat of Andean glaciers.

Despite a long history of colonialism and its profound legacies, many Indigenous and Afro-descendant communities have succeeded in defending and rebuilding high degrees of cultural and territorial autonomy. Nowadays, especially in Ecuador, Bolivia, and southern Colombia, Indigenous movements constitute a considerable political force, sometimes manifesting as resistance to extractive projects or as new forms of care for the natural environment. These forms of care are also expressed in the concept of *Buen Vivir*.

Although all the countries of the Andean region defined themselves as multicultural or even plurinational in the 1990s and countries such as Ecuador and Bolivia incorporated rights of nature into their constitutions, extractivism deepened. Today, the various socioenvironmental conflicts in the Anthropocene era are at the center of fundamental debates about the future of the Andean region. These conflicts are also manifested on a global scale, as seen in the Bolivian-Chilean-Argentine highlands, which is becoming a new pole of rare earth metals extraction, especially lithium, to support the Green Deal and the CO₂-neutral industries and transportation of the Global North.

Amazon

The Amazon is a region defined by its belonging or proximity to the Amazon River basin, which crosses nine nation-states: Brazil, Colombia, Peru, Bolivia, Ecuador, Venezuela, and the three Guianas. Each of these nations has different trajectories in their relationship with the forest, both quantitatively and qualitatively. In Brazil, the Amazon is connected to the Cerrado and the Northeast through a history of migration since the end of the nineteenth century, linked to activities such as rubber extraction, mining, livestock farming, and logging. The Amazon has also been a supposed ecological paradise to which the victims of drought and the inequalities of the plantation system were encouraged to flee and settle. In the north, the Amazon River system is connected to the Orinoco, the third largest river in Latin America. Across the Atlantic, the Orinoco River system was an important entry point for extractive economic activities in the Amazon, such as the exploitation of rubber, the felling of native trees, livestock farming, and mining. Being a difficult-to-access area for the European colonizer, the otherness of Amazonian nature has been the source of numerous myths and cultural representations that have served to justify its exploitation or conservation, given that it is the largest rainforest reserve on the planet with a great diversity of biomes.

Although the concept of the Amazon has served to exemplify the notion of nature in its most “pristine” state, it is actually a historically constructed concept. At the beginning of colonization, it was not spoken of as a totality. Rather, it was established sociohistorically in the mid-nineteenth century, as until then, the Amazon only referred to the river and the river system associated with it. European knowledge of the area was gradually recorded in the cartography of the sixteenth and seventeenth centuries, showing imaginaries built on the idea of an exotic and exuberant Eden, as threatening as it was paradisiacal.

Despite the predominant image of a “virgin” jungle, the Amazon region is cultural. It has been transformed by humans for around 10,000 years. Indigenous and certain mestizo populations are important actors, even though forest biodiversity is the result of millions of years of evolutionary processes prior to human presence.

During the colonial period, among European and Creole travelers and settlers, the predominant idea was that of a “green hell,” the scene of the great drama of man against a wild and unhealthy nature full of dangers arising from its flora, fauna, climate, and human groups, associated above all with the idea of the cannibal. Over the centuries, various projects coexisted or alternated such as the conquest of the jungle, its exploitation, or its occupation, later moving to a conservation discourse framed by the idea of the region as a global natural heritage beyond the protection managed by specific political entities.

In the countries of the Amazon, this region has generally not been a geopolitical center, but rather a territory in a certain limbo, considered to be a reserve for the future. The predominance of national structures as determinants of public policies, whether of colonization, exploitation, or conservation, does not take into account the fact that non-human forms of life and many human populations do not always live according to the assumptions of Western structures. Animals, plants, and rivers experience and renew their existence through cycles and movements that do not consider borders. However, the actions that each nation does or does not implement in the jungle may determine whether the life of these beings on its borders is viable. Both official policies and the demands of social movements are becoming important in the continuous construction of a territory in which the Anthropocene – apparently less visible here than in more urbanized places – is constantly maintained as a structuring principle. This is evidenced by the numerous interventions carried out in the Amazon since the first half of the twentieth century. From that point on, an increasingly extractive economy with varying intensities broke out. In addition to the extraction of natural resources, the expansion of nation-states entailed the occupation of land for agriculture and livestock, as well as the development of large infrastructure projects. By the 1970s, there was already flagrant harassment of the jungle, marked by the invasion of the territory. There were slight variations in the implementation of the occupation projects according to the historical processes of each country.

In many Amazonian areas, the second half of the century was also characterized by the incursion of religious missions, first Catholic and then Protestant, whose presence had strong impacts on the organization of the native peoples, both in the management of resources and in their relations with the environment. In the twenty-first century, the growing political role of evangelical churches and their representatives has been supportive of right-wing factions with little willingness to stop environmental devastation. Instead, they have come into open conflict with environmental and land defense movements. The case of Brazil during the administration of Jair Bolsonaro, when the destruction of the Amazon rainforest increased alarmingly, exemplifies this alignment of forces and the threat it poses to the region. Given the key role of the Amazon in global ecology, the ease with which

governments, ultimately transitory, are able to trigger environmental crises that impact their countries and the entire planet is worrying.

In contrast to this bleak landscape, several projects emerge that amalgamate multi- and transdisciplinary perspectives with the purpose of recovering or generating ways of inhabiting the Amazon in a sustainable manner. Although the region has become a testing ground for a new Green Economy, the weight of extractive capitalism, represented by mining and oil exploitation, among others, remains overwhelming. In addition, harmful practices such as clear-cutting, livestock farming, and other archaic predatory economic forms persist.

It is worth noting, however, a change in approach that considers biodiversity not only in terms of biological diversity and physical environment, such as waters and soils, but also in relation to sociodiversity. The latter is perceived as an element that must necessarily be integrated into conservation actions. In this context, non-dualistic thinking acquires relevance when reflecting on the Anthropocene, stressing the need to not separate nature and culture. Instead of erecting visions based on the ancient myth of a “virgin” jungle in which the human being is simply a hindrance – an idea that has been used more to displace Indigenous and peasant communities than to curb large-scale exploitation –, one must consider that the challenge lies in building conditions favorable to ecological balance. Indigenous and traditional worldviews, revitalized by current generations, offer ways to rethink the relationship between the human and natural worlds.

Mesoamerica

We propose to include the Central American Isthmus and Mexico in a new notion that we call Greater Mesoamerica. The conceptualization of Mesoamerica, presented by Paul Kirchhoff in 1960 and originally published in 1943, has been very useful because of its specificity, making it possible to distinguish a given area in geographical and cultural terms. Mesoamerica has solved problems associated with unclear concepts, such as Middle-America, used in the handbooks of the 1960s, whose translation into Spanish was never clear. In addition, it geologically identifies Mexico as part of North America, while also being part of Latin America. However, Kirchhoff’s definition omits northern Mexico and part of southern Central America, leading us to propose a more inclusive notion.

In this volume, we will consider Greater Mesoamerica the geographical and socioenvironmental space that encompasses the entire Mexican territory, the five Central American nations that formed the Captaincy General of Guatemala (Guatemala, Honduras, El Salvador, Nicaragua, and Costa Rica), as well as the present-day Belize and Panama. Greater Mesoamerica, as we conceive it here, does not intend to analytically homogenize the biocultural diversity that characterizes this region; rather, we start from the premise that, despite this diversity, historical processes have taken

place that present parallels in the field of socioenvironmental relations, differentiating it from other Latin American territories.

In ecological and socioenvironmental terms, the subregions of Mexico and the Central American Isthmus have peculiarities and interrelationships that we must highlight. Mexico is a megadiverse country thanks to its geographical position, connecting North America with Central America, and its strategic location between two oceans: the Pacific and the Atlantic. This allows for the conjunction of nearctic and neotropical vegetation in that territory. Mexico ranks first in terms of reptile diversity in the world. Half of the country is desert, and more than 50 percent of its national surface has a rugged topography with hills and mountains. Most of the territory experiences severe droughts, and the availability of water is mainly in the south-southeast.

This is clearly a geographical Vavilov center, defined as the place of origin of domesticated plant species of great economic importance. Led by corn, the dietary basis of the region, these species include chili, tomato, pumpkin, cacao, amaranth, and others that form part of the world's food heritage. Mexico has more than 20 biocultural regions, where language and culture are combined with natural biological species, generating broad and diverse knowledge systems. Mexican cuisine, in recognition of this biocultural richness, has been declared an Intangible Cultural Heritage by UNESCO. However, this wealth is under threat and requires urgent protection measures.

Central America stands out as the only region in the world with both an intercontinental and an interoceanic position. This isthmus links North America with South America, separating the Pacific Ocean from the Caribbean Sea. It extends from Tehuantepec in southern Mexico to the Atrato Valley in northeastern Colombia. Formed 3 to 4 million years ago in the Pliocene, the isthmus has been a bridge for North-South movement for about 10 to 12 thousand years. Its unique location gives it a variety of contrasting landscapes, including mountain ranges, intermountain valleys (altiplano), hillsides, and coasts. The region is characterized by its climatic diversity. Tropical and subtropical climates predominate, but microclimates abound.

There is a great contrast between the mountainous areas – composed of hills, mountains, volcanoes, and plateaus – and the slopes. This climatic diversity is reflected in the region's natural richness. Its diverse life zones host forests that range from the very humid, humid, and rainy to the dry. The isthmus condition of Central America explains the presence of flora and fauna from North and South America. Until Nicaragua, the vegetation is nearctic, and from the south of Costa Rica, the vegetation becomes neotropical. The combination of species in these regions explains the vast biodiversity of this subregion.

Greater Mesoamerica clearly covers a period that precedes the beginning of the genealogy of the Anthropocene, which, from this project's perspective, stems largely

from the European invasion. However, we will limit the period of study in these handbooks starting with the considered territories' conquest, that is, the colonial period, based on the logic of the intensification of exploitation processes. Therefore, the concept of Mesoamerica present in the contributions of these handbooks must be understood from a broad geographical, cultural, and socioenvironmental sense, as stated above. It is, then, an operational concept that does not ignore the diffuse and subtle nature of inter- and intraregional divisions, nor does it ignore the socially constructed nature of any spatial delimitation, especially – although not exclusively – when it comes to socioenvironmental relations.

Caribbean

The Caribbean, whose core was delineated by different groups of various-sized islands, is characterized by the territorial interaction between these insular and maritime spaces, as well as the surrounding coastal areas in the Gulf of Mexico. This is known as the Circum-Caribbean, and we include it in our conception of what we call the Greater Caribbean, which also includes the Atlantic coast of northern Latin America with Colombia, Venezuela, and the Guianas. It was the first region “discovered” by Christopher Columbus. The island of Hispaniola (currently the Dominican Republic and Haiti), in particular, became the geopolitical epicenter of the Spanish and other European powers. It was called “the gateway to the Americas,” at least until the mainland (*Tierra Firme*) – with more promise – was discovered and began to be conquered.

From the perspective of the Anthropocene's genealogy, the Caribbean is a particularly vulnerable region in relation to climate change in historical times, i.e., the colonial imaginaries of “primitive climate engineering,” and also to anthropogenic climate change since the Great Acceleration. First, the Caribbean archipelago has been especially exposed to weather extremes such as hurricanes, droughts, and extreme rainfall, as well as to geological extremes such as volcanic eruptions. Second, these small island ecosystems were extremely sensitive to disturbances, such as large-scale deforestation undertaken by colonizers to create sugar plantations.

The Caribbean is a point of confluence between various geographical areas of the American continent, located in the middle part of the continent in much of the Atlantic Ocean. This has allowed large territories of the Caribbean to become gateways, both by sea and by land, for the migrations of people from European countries and the American continent itself. In addition, the Caribbean was the first region in the Americas to experience migrations of flora and fauna, especially with the arrival of Spanish inhabitants who introduced new livestock species and various agricultural products. The anthropogenic change caused by the European arrival was, to a large extent, related to the introduction of pathogens, causing the massive

death of Indigenous populations and the abandonment of land cultivation in different Caribbean regions.

It is no accident that, until today, the Caribbean is recognized globally as a large tropical and mountainous area contrasted with coastal activities. It brings together vast territories with a wealth of terrestrial and maritime biodiversity that, for centuries, have been a meeting point for migrants from Europe, America, Asia, and Africa. The migratory diasporas to and from the Caribbean had such intense periods that we can say the region has provided conditions for complex and conflicting *mestizaje*.

After European colonization and the beginning of the transatlantic slave trade, the extractive plantation industries, which exploited the labor of large numbers of enslaved Africans, gave rise to highly stratified and socially vulnerable societies in this geographically fragile environment of small islands. From this perspective, there are numerous analogies and a shared history of forced migration, racial stratification, and systematic ecological exploitation as in the Brazilian Northeast. Both regions, of roughly the same demographic size, are fundamental nexuses of the Afro-Atlantic world and constitute spaces of ecological circulation that are paradigmatic for the colonial plantation system, in addition to its enduring legacy in the creation of the Anthropocene. The northernmost part of Northeastern Brazil, that is, states such as Ceará and Rio Grande do Norte, are sometimes included in classifications of the Caribbean.

During the colonial period, the Caribbean was one of the most important markets for people exploited by the international slave trade, financed by European economic powers. To a large extent, current migrations from the Caribbean are due to very complex processes of the anthropocenic degradation of territories and popular settlements, as well as to the violent penetration of criminal groups that have forced large sectors of the civilian population to take refuge in neighboring countries or seek migratory routes to the United States.

Since the conquest, violence and political instability shape the Caribbean region. At the end of the eighteenth century, Haiti was the epicenter of the first major revolt of people freeing themselves from the yoke of slavery in America. Since then, the conditions of slavery and labor exploitation have been intolerable for large sectors of the civilian population. However, at the same time, the Caribbean has been a space of great transformation and anthropocenic resilience, despite extractivist policies focused on land use changes, the exploitation of aquifers, the introduction of non-endemic fauna and flora, the extraction of oil, clandestine logging of forests, and the extraction of minerals. Countries such as Cuba, Haiti, Barbados, and the Bahamas are just a few examples of nations that have experienced dramatic transformations with great effects on their inhabitants due to the extractive policies implemented from colonial periods until today.

In anthropogenic terms, Indigenous and Afro-descendant communities have been especially affected due to the occupation of their ancestral territories and the implementation of industrial-scale monocultures. Paradigmatic examples of this are bananas, cacao, and coffee, products with great global demand that are grown using labor under precarious conditions, often equivalent to slavery. Another manifestation of anthropogenic devastation in the Caribbean is sugarcane, which has resulted in extensive deforestation to grow tubers imported from the Philippines, depleting water reserves due to intensive water use.

In addition, the mining of precious metals such as gold and silver has been a significant factor of anthropogenic devastation. Land use and the pollution of rivers with toxic substances, such as mercury and cyanide, have seriously affected the natural environment. Copper mining since the nineteenth century and nickel mining in the twentieth century have had a global impact and have wreaked havoc on diverse ecosystems. These activities have also profoundly transformed the region's cultural forms and traditions.

In short, the Anthropocene has had a significant impact on the Caribbean region, especially from the nineteenth century to the present, due to abusive and uncontrolled extractive policies in populations that have suffered a long history of systematic impunity, corruption, government abuses, discrimination, and endemic racism. In addition, the phenomenon of mass tourism in the twentieth century has affected the natural resources and biodiversity of jungles, mountains, and beaches through the international sale of land and property to European and North American foreigners. Finally, we wish to emphasize that, given the historical legacy of colonialism, slavery, and continued economic dependence on European powers – even after political independence – together with anthropogenic climate change, these small island states remain vulnerable. However, creative regional solutions are emerging to address the climate crisis, especially in the form of specifically and innovatively structured disaster insurance programs.

Visual Representations of the Anthropocene

The central aim of this volume on visual representations is to explore the ways in which major Anthropocene crises speak in symbolic and intersubjective fashions through multiple visual formats. The volume is comprised of short articles based on images that were chosen on grounds of their communicative agency and relevance. These images became the essayistic inspiration for scholars in the arts, social sciences and humanities to develop critical reflections on anthropogenic aspects of mining, energy, forests, agriculture, biodiversity, water problems and climate change in Latin American contexts, from the colonial period to the present day. To-

gether, these essays and images constitute a genuine iconography of the genealogy of the Anthropocene from Latin America.

Environmental humanities have pointed out the impact that visual representations have had on human ways of conceiving and exercising extractive dominion over nature and geographic territories in each historical period. In this regard, the images in this volume are not offered as “sources” in the conventional historiographical sense, that is, as if they were purveyors of objective truths about anthropogenic transformations. Rather, we conceive of them as symbolic devices that bring us closer to cultural experiences, beliefs, knowledge, and ideological conflicts that have influenced socio-environmental crises. Thus, for example, colonial rule during the sixteenth century is manifested in images produced under European influences, including codices, altarpieces, maps and paintings. The Anthropocene’s processes, in this and subsequent periods, have been accompanied by the production of visual tools of both domination and resistance.

In closing the series of Handbooks on the Anthropocene from Latin America with this volume, we seek to underscore the fact that socio-environmental problems and crises of the past and present can be approached critically from perspectives outside of the academic framework. The multiple dimensions of the Anthropocene exceed the methodologies of academic-scientific analysis, and may usefully be reflected upon via the incorporation other languages. This implies generating critical evaluations that take into account socio-cultural aspects generated within the aesthetic, symbolic and affective registers present in the visual artifacts that the volume’s authors have selected for the elaboration of their essays.

Why analyze the Anthropocene through visual representations? This volume starts from the premise that the varied universe of images allows us to approach the Anthropocene through specific spatiotemporal settings, impregnated with the subjective, scenographic, and liminal experiences that individuals, communities and societies have had with their environment. The visual imprint of the Anthropocene, especially in contemporary history, is often not directly visible, but exists rather as a trace or shadow in representation. However, the use of shadows is well known to humans: even the earliest images produced by humans were created as border zones between light and shadow on stone walls. We find this idea evocative in shaping this volume, insofar as it refers us to the world represented under the sign of presence, together with the reverse of absence. Such intersubjective processes resemble the ways in which ecological disasters represented in artefacts such as maps, altarpieces, paintings and photographs are also revealed to us through multiple layers of visions and concealments.

At the same time, this representative ambivalence not only affects the formal configuration of what is represented, but also contains important ideological aspects. In many cases, these are not images conceived *ex profeso* as testimonies of disasters caused by the extractive interference of humans; rather, those same im-

ages both project and conceal conflictive dynamics related to the relations between humans and nature. It should be noted that the Anthropocene has been progressively shaped, since its colonial origins, by shadow-images. This implies that environmental devastation caused by human interference can be detected within that which attempts to obscure or even hide it. A sixteenth-century map, once drawn as a guide for navigators, now, subjected to another kind of epistemic scrutiny from our present, reveals the expansive scope of colonial rule, as well as the dimensions of disasters caused by the deforestation of territories, the plundering of minerals, and the usurpation of territories from Indigenous communities. Concurrently, the interplay between light and shadow allows us to bring into consideration the sun, or in a broader sense, the planetary and environmental dimensions which are the irreducible conditions for the emergence of images.

Another relevant aspect addressed in this volume is the ideological configuration of the selected images themselves. Historically, visual representations have been used as instruments at the service of hegemonic ideologies; and a fundamental characteristic of ideologies lies in their enormous simultaneous power of persuasion and transgressive concealment. Thus, for example, the author of a nineteenth-century landscape painting might idealize the appearance of a forest or a mountain; yet at the same time, perhaps unintentionally, the painting may also reveal a whole set of extractive premises leading to deforestation in native woodlands, as well as profound effects caused by the introduction of new technologies that altered ancestral farming systems and ancient ways of life in Indigenous communities.

In addition to these ideological implications, the authors of this volume have devoted special attention to the symbolic power of images. Maps, altarpieces, paintings or photographs – among other visual artifacts contemplated here – condense collective imaginaries, invoke ancestral beliefs, activate historical memory and mobilize ancient myths through visual narratives. They also have great pedagogical force, in that they shape our anthropocentric perceptions, for example, by representing human beings as dominant agents over nature and reinforcing narratives of control and systematic extractivism for the sake of economic progress, to the benefit of powerful oligarchies. These visualizations perpetuate hierarchies that place the human above the non-human – and some human groups above others –, thus influencing how viewers understand our relationship with natural environments.

This volume exposes the evocative power of images as visual devices that allow us to reflect on environmental diversities that existed in other eras, and to view more critically the socio-political conditions that have produced serious repercussions today. Finally, it is important to point out that this volume is not a chronological compendium of images, nor does it pretend to be exhaustive. Rather, it is a broad visual mosaic that aims to encourage other ways of seeing and understanding our environmental problems, from perspectives that emerge out of the dialogue between art

history and environmental history in the different territories and regions of Latin America.

Final Words

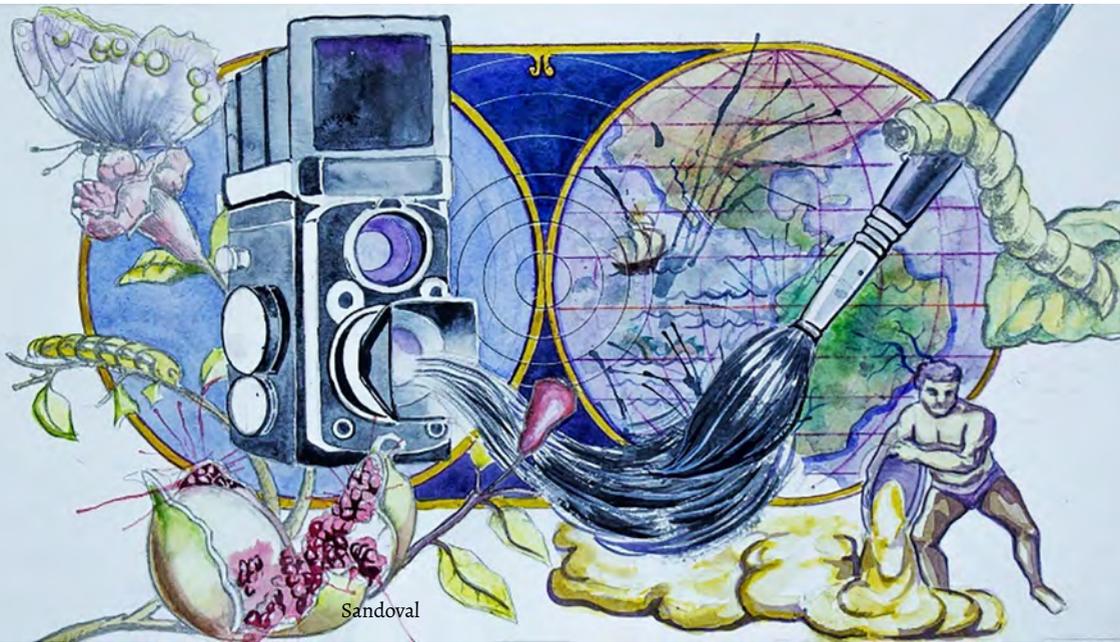
We proudly present this volume as part of a series of handbooks that have carried out the pioneering task of approaching the Anthropocene from a specific regional perspective. Its realization has been made possible thanks to the dedicated work of a team of 20 editors and more than 180 authors of diverse disciplines from various regions of Latin America, the United States, and Europe.

For five years, we have met at editorial conferences and workshops at CALAS headquarters in Guadalajara, Buenos Aires, Quito, San José de Costa Rica, and Bielefeld as well as at various virtual editorial conferences. These meetings have led to lively and, at times, controversial debates. Now, we present to you the product of this fruitful international and interdisciplinary collaboration.

We have made a significant contribution by approaching the planetary scale of the Anthropocene from a regional perspective. We have shown what the Anthropocene can mean in its socioenvironmental and sociotechnical dimensions, as well as in a long-term perspective. Assuming a perspective from Latin America involves turning to existing debates and problems related to multiple socioenvironmental conflicts, which require critical perspectives from the social sciences and the humanities. With our work, we hope to have promoted the debate on the Anthropocene from critical Latin American perspectives and to have provided inspiration for perspectives on confronting the multiple crises in the Anthropocene. Last but not least, we hope to serve as an example for other regional perspectives on the planetary in relation to the Anthropocene, especially from the Global South.

Translated by Eric Rummelhoff and revised by Luisa Raquel Ellermeier.

I. COLONIAL PERIOD



Source: Fernando Efrén Herrera (2021)

Visual Representations of the Anthropocene in the Colonial Period

Miracles and Plundering

Juan Arturo Camacho Becerra, Gerardo Cham, Olaf Kaltmeier and Elissa Rashkin

Over 300 years of European domination in the Americas caused severe changes in the relationship between humans and nature. The sixteenth and seventeenth centuries produced significant advances in navigation technologies, mining, water, and land use, which in turn caused irreversible damages to nature, such as the ones caused by mining, cattle ranching, and the devastation of forests to turn them into cultivated areas. European agriculture and cattle ranching expanded “at the expense of the Indigenous people: the more plants or animals, the less men” (Bethell 2000: 21).

In addition to revealing technical deficiencies or mastery in their medium, images are historical and social references insofar as they are the work of human creativity; therefore, they reflect information about an era, its sensibilities and various concerns, from artistic to social (Burke 2005: 101). Likewise, written and visual documents produced during the period under study can be considered as evidence of the actions of man – or a particular group of men – in the transformation of nature.

The collection of images presented here includes paintings, metal engravings, and ink drawings. In terms of style, they range from geographical representations of illustrated maps in the Renaissance style, to late seventeenth-century realism, to the romantic idealization of landscape inspired by the travels of Alexander von Humboldt. The common interests of the conquistadors centered on the natural resources of the newly discovered continent, which they expressed by compiling information in various ways, including illustrated reports and maps. There is also evidence of local worldviews and magical thinking as a means of coping with the diseases brought by Europeans, which wreaked havoc on the population, leading to demographic decline. Scenarios of confrontation between Indigenous peoples and Europeans are also represented, as are the plundering of natural resources, mainly wood and metals; technological changes such as the installation of shipyards for the construction of boats; the introduction of technologies for the domestication of an-

imals; and changes in the process of metal extraction with the introduction of mercury to separate silver, among others.

In terms of representational purposes, a central idea is the gigantic vegetation and the exuberant resources of the “new” continent’s nature, a notion that would be installed forever in the European imaginary. Also noteworthy is the assertion of possession of the landscape through its re-semanticization, as well as an emphasis on race. (Pratt 1992) Another theme is the image that Europeans had of this new world populated by wonders and inhabitants whose natural condition, in the new order ratified by colonial documents, seemed to be slavery.

For the purposes of thematic and stylistic study, it is useful to distinguish between two periods: one that we will call early colonization, and another late colonization. The former is dominated by maps, while the latter, which properly encompasses the eighteenth century, ranges from depictions of miracles to artistic recreations of scientific explorations. The role of the arts in the sixteenth and seventeenth centuries underwent significant changes and witnessed the emergence of some new categories. (Londoño Vélez 2012) For example, the entomologist and naturalist Maria Sibylla Merian, as a pioneer of scientific drawing (Schmidt-Loske 2025), initiated a cycle that ended with the nature painting promoted by Humboldt and produced countless testimonies by foreign painters, some examples of which are included here.

In the first phase of conquest and expansion, maps were fundamental: “Maps are mirror and theater, because in them the seas and lands of the world are reflected, and they are theater – derived from the word *zéatron*: to see, to look at – because one can see through them what the world is like” (Depuydt, Jongbloet, and León-Portilla 2004: 8). Although cartography is as old as civilization, it had an important development in the West during the expansion of the first European empires, between the fifteenth and seventeenth centuries. Initially, European cartographers copied ancient maps and used them as the basis for their own, until the invention of the compass, the telescope, and surveying allowed them to aim for greater accuracy. Abraham Ortelius was the first publisher of a geographical atlas, which appeared in Antwerp in 1570 under the title *Theatrum Orbis Terrarum* (Theater of the Lands of the Orb). This work was a compilation of the maps of the world known at that time.

“*Terra Brasiliis*”, a map that is part of the Miller Atlas and is dated 1519, drawn among others by the Portuguese painter Antonio de Holanda, belongs to this period of cartographic boom. This map illustrates the Atlantic Empire in all its splendor: land and sea populated by novelties, from caravels to representations of exotic birds and some from medieval fiction, such as a flying dragon. Due to the use of the compass rose and other calculation instruments, it would appear to be a map made by experts in navigation (see Rashkin). Another cartographic image published by Sebastián Caboto in 1544 presents the Amazon River as an anaconda snake; in this case, the compass rose is the starting point for marking and naming cities, rivers,

and provinces. Further maps also depict the exploitation of the Amazon's natural resources such as the "*Cartographic Details of Colonial Amazon*" (see Unigarro).

Another noteworthy map of the period is "*From the Shores of the Sea to the Lands of Quito*" that accompanies the manuscript *Descubrimiento del río de las Amazonas y sus dilatadas Provincias* (Discovery of the Amazon River and its Extensive Provinces), preserved in the National Library of Spain. It is a key piece in the history of Amazonian cartography: in addition to the information it provides, the map has artistic value characteristic of seventeenth-century cartography. According to the author of the entry, "the map reflects, on the one hand, the historical connection between the Amazon River and the Andes Mountain Range and, on the other, one of the most important features of the Amazon: that it is a densely populated area" (see Jaimes Betancourt).

This cartographic set is completed by the "*Map of the Hills of the Pachuca Real de Minas*" of the *Circuito argentífero de Pachuca-Real del Monte* (Pachuca-Real del Monte Silver Circuit) made in 1750 and a map referring to the exploitation of the Campeche wood, or "*Logwood*", on Isla del Carmen (1792). In both we find differences in terms of representation: they are no longer precision maps, in compliance with Enlightenment ideas, but information documents, made by a public official. The first provides information on the religious and government buildings of Pachuca, as well as the twenty-nine mines in the region (see Cortés Manresa). In the map of the Isla del Carmen, based on elementary geometric information, a circle serves as a radiating center of lines in which rivers and towns are located to extract and transport the logwood of Campeche (see Durán Moncada). Cartography with very different purpose is the *Mapa hidráulico del valle de Chicana* (Hydraulic Map of the Chicana Valley), depicting also the "*Acequias Built by the Indians*", where the western cartographic procedure is used to revive a pre-Hispanic technology related to the use of water in the seventeenth century (see Noack).

Metal engraving was another technological development of the sixteenth century that was crucial for the spread of images and, together with the printing press, it reached an unusual boom. This brought artistic and economic benefits, since it made possible the multiplication of images, not on a large scale, but with sufficient reach for the enlightened European public of the time. Engraving in Germany had notable examples; Albrecht Dürer, who also marveled at the objects coming from the Indies, is one of the best known.

Engraving was used as a unit or in series to illustrate texts, as in the case of "*Indigenous Miners in Potosí*", published in 1601 in a volume of Theodoro de Bry's monumental work, *Viaje a las Indias occidentales y orientales* (Journey to the West and East Indies). De Bry, as a history buff, contributed to the creation of a "black legend" that emphasized the terrible conditions of slavery exercised in the Americas by the Spanish colonizers, and in particular by the Catholic Church. As a devout Calvinist Protestant, his aim was always to discredit the Catholics and denounce their voca-

tion for the accumulation of wealth, something unspiritual, as was the case in their colonies in the so-called West Indies. The engraving presented here is inscribed in that discourse; the Indians working in a mine, naked and holding candles with their fingers, constitute a swarm of bodies in a pyramidal shape that contrasts with the representation of the free Indigenous peasant in another part of the image (see Barragán and Molina). With an opposite intention, the scene “*The Parliament of Quilin*”, a meeting that took place in 1641 between the Spanish conquistadors and the Mapuche, in which both parties negotiated to end the war, is commented on. Five years later, Alonso de Ovalle left memory of the event in this engraving that, according to the author of the entry, speaks to us of the *Wallmapu* – Mapuche territory – not only from what is seen, but also from the underlying elements not visible or naturalized by the colonial imaginary (see Marimán).

Another engraving that is part of a series is “*Agricultural Work Among the Mocovíes*”, a plate from the book *Hacia allá y para acá (una estadía entre los indios mocovíes 1749–1767)* by the Jesuit Florian Paucke (see França). This image, between map and codex, provides important ethnographic information about the population in question, which is why it was necessary to transfer it to engraving and thus further dissemination.

A singular image for this period is the ceramic representation of the “*Taino Deity Hurakán*”; due to the circular movement of these atmospheric phenomena, it is represented with two elongated arms. Although much of the Taino cosmivision was lost in the violence of the colonization of the Caribbean, Cuban anthropologist Fernando Ortiz researched on the original thought about the spirit of the hurricane and reproduced some visual representations in this regard. As the author of the entry notes, the colonizers depended on Taino knowledge of the phenomenon to the extent of adapting the term hurricane to European languages, while anthropocenic activity altered the social and environmental dynamics of the region (see Rohland).

The seventeenth century was a time of exploration and expansion for the empires, and shipyards were built in various Atlantic and Pacific ports. The selection includes the illustration of a “*Shipyards*” that stands out for the number of workers employed and the size of the ship that would make the route to the east (see Yañez).

Drawing transferred to engraving was another resource of the period for the diffusion of visual representations. This is the case of the work *El primer nueva corónica y buen gobierno* (The First New Chronicle and Good Government) by Guamán Poma de Ayala, originally a protest letter addressed to Philip II and composed of 388 drawings, written in 1601, and published in 1626. Here we comment on “*The City of Hell*”, notable both for the figures depicted and for the intentional blending of Andean and European worldviews around the issues of sin and retribution (see Lay Brander).

An innovation in metal engraving was the introduction of color to achieve more realism as shown in “*Pineapple*”, an illustration by Maria Sibylla Merian. It is an image she made for her book *Metamorphosis of the Insects of Surinam*, published in Amsterdam in 1705. This explains the presence of caterpillars and a butterfly suckling

from a ripe pineapple, a fruit that the naturalist called the first globalization, in reference to the spread of the pineapple throughout the world (see Schmidt-Loske).

During the second half of the eighteenth century and until the independence of the Spanish-American colonies, both the Spanish and Portuguese empires opened their territories to scientific expeditions in order to obtain more reliable information about their natural resources. Therefore, this period presents a significant group of works by foreign naturalists or painters who traveled to the new continent. A splendid drawing made around 1786, entitled "*The Production of Butter from Turtle Eggs*," was the product of the talent of the draftsmen who accompanied the expedition of the naturalist Alexandre Rodrigues Ferreira (1756–1815) through the Amazon River basin. At that time, the extraction of turtle eggs served the colonists to obtain fat and oil, the latter used for lamps that illuminated with a weak light (see Schulze).

Among the numerous series of engravings published during the second half of the eighteenth century, the *Encyclopédie ou dictionnaire raisonné des sciences, des arts et des métiers*, an editorial, philosophical, and scientific enterprise published in 17 volumes between 1751 and 1766, directed by Denis Diderot and Jean Le Rond d'Alambert, stands out. This great work was intended to bring together all the knowledge accumulated up to that time in the spirit of the philosophy of the Enlightenment. In an image on "*Sugar*" published to illustrate the text dedicated to agriculture, one can see a version divided into three spaces: in the upper part, the fields surrounded by what appears to be the owner's farm, a group of small houses for the farmers, and another building that appears to be the factory where the agricultural product is processed; in the middle part, a piece of furniture containing the processed product and a sugar cane plant; and in the lower part, farming implements and a container used in the process of transforming the product. By 1750, the agricultural plantations of sugar cane and tobacco located in the Caribbean islands constituted an important part of the European economy and, at the same time, a social order based on slavery and a change in land use with consequences for its wear and tear (see Glietch).

In opposition to the spirit of Enlightenment mentioned above, there are works here that reveal aspects of the early Anthropocene in a religious key. The paintings of thanksgiving for a miracle obtained allow us to glimpse the imaginary of the colonial settlers in relation to the wonders worked beyond the natural, and are also a document for social history. The *ex-votos* of gratitude, for the Catholic world, have their origin in the Middle Ages, when knights returned with relics from holy lands that were deposited in sanctuaries and cathedrals. In Mexico their origin dates back to the seventeenth century. It is well known that the epidemics brought by the Europeans caused a decrease in the native population, with important consequences for the environment, especially in terms of land use and exploitation of the territories. At the same time, a sector of the Indigenous nobility managed to insert themselves into the colonial social order. The "*Ex-voto of Lusiana Grande de Acxotlan*", where she thanks the Virgin of Sorrows and Saint Sebastian for having been cured of small-

pox, is also notable for the handling of spaces, in which different scenes, presided by the Virgin and the Saint, are represented with mastery in terms of proportions and drawing. Other images depict the anthropogenic introduction of germs due to the Columbian Exchange and their effects on Indigenous people, like “*Diego Lázaro Sick from Cocolixtli*” (see Sigaut and Cramaussel).

Lithography emerged in 1796 as another way of reproducing images, through the use of grease pencil that allowed drawings with finer lines. This can be seen in “*Trees Born Before the Birth of Christ*”, published in 1817: an image that contributed to spread the idea of a millenary and gigantic nature, forming an imaginary around the tropical that persists to this day (see Squeff).

Perhaps because of the broad dimension of his work, Johann Moritz Rugendas (1802–1858) is one of the most important foreign painters who visited the region in the third decade of the nineteenth century. His stay included Mexico and South America; and the author of the entry narrates that the painter was walking in a Brazilian town when he came across this group performing “*Playing Capoeira or the War Dance*”: an Afro-Brazilian cultural manifestation in which dance, martial arts, music, and corporal expression are mixed. It should be noted that the painting analyzed here is from 1835, when slavery had not yet been abolished in Brazil, which is why he was impressed by these festive gymnastics as a way of escape from an oppressive reality, within a society based on racialized inequality that was the foundation of the plantation economy (see Oliveira de Souza).

The imperial gaze is evident in the painting “*Humboldt and Bonpland at the Foot of the Chimborazo Volcano*”, 1810. Made by a German painter who was never in Ecuador, it was inspired by Alexander von Humboldt’s drawings and publications. This naturalist, with a very clear vision, pointed out the damages caused by the exacerbated extraction of natural resources in America, anticipating the conceptualization of the Anthropocene. Humboldt was also the creator of many images that had a strong influence among nature and landscape painters of the first half of the nineteenth century (see Camacho).

To devise an iconology of the Anthropocene, according to Bénédicte Ramade (2018), the image “must be subtly ecological, blending culture, science, and politics with a sense of aesthetics.” This selection of images that was created according to the suggestions of the authors of the entries constitutes the beginning of an iconology in this sense, which does not necessarily have to be linked to the ecological issue or destruction. It is rather about images that provoke us to reflect on the multiple forms of human intervention in nature during the period in which the Spanish and Portuguese empires exercised domination over the vast territories of what is now known as Latin America.

The analysis of images, as a source or reference for the social sciences and specifically environmental history, requires in principle a theoretical framework from cultural history; therefore, the focus of research is centered on cultural practices carried

out by historical subjects to signify their world with images. This, in turn, is analyzed as a cultural object with methods in accordance with its content and the objectives of the analysis; the observation of characters and objects, the collection of data, the citation of sources and artistic analysis, among other processes used in the texts contained in this section of the volume, are used. Its methodological diversity is aimed at “looking at and creating” the image from the Anthropocene, identifying elements and characteristics of the effects of action on nature in Latin America during the colonial period. Generally observed, these are images that visually lead us through the profound changes that took place during the three centuries of external domination in social organization, technology, the exploitation of natural resources, and mainly the fascination of the Europeans before the nature of a world unknown to them.

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Visual Representations in the Southern Cone in the Colonial Period

Terra Brasilis

Elissa Rashkin



Terra Brasilis, attributed to Lopo Homem, Pedro Rienel, Jorge Rienel, and Antonio de Holanda, in the Miller Atlas (c. 1519). Parchment, 42cm x 59 cm. Source: Bibliothèque Nationale de France.

The *Terra Brasilis* map, included in a set of folios grouped under the name Miller Atlas, shows an emerging idea of the territory during the process of its colonization by the Portuguese at the beginning of the sixteenth century. The land mentioned in the title occupies little more than half of the map, which is spread over two rectangular sheets. Most of the space is devoted to the sea: Portuguese caravels in motion; flags and coats of arms that mark the possession of islands or the coast itself; and wind roses and other elements related to navigation. The map thus exemplifies the portolan chart tradition, a tool dating back to the thirteenth century whose focus on coasts and waters allowed cartographers to use their imaginations freely in the

depiction of inland regions (Ström 2017: 309–310). In this case, the continental area that projects from the left side of the map – faithful to the Portuguese interpretation of the Treaty of Tordesillas – is a dense representation in which multiple visions and power relations are captured.

To begin, it is worth noting how the written word is used to guide the reading of the image. A legend in Latin explains that the map represents

the great land of Brazil, which borders the Antilles of the King of Castile, whose inhabitants are cannibals and very skilled in the use of bows and arrows, where in this same land there are abundant parrots and wild animals, and where there are also many brazilwood trees, so useful in dyeing fabrics red. (Instituto Geográfico Nacional 2006)

Although the map indeed includes these elements, its true focus is only one: the extraction of *Caesalpinia echinata* (now *Paubrasilia echinata*), a wild tree species that would give its name to the colony and later to the country. It is thus an emblematic incursion of the early Anthropocene, one that involves from the beginning the exploitation of the native population as labor.

The Miller Atlas

The Miller Atlas contains in its name a history of buying and selling rather than a description or narrative of its origin: it was acquired in 1897 from the widow of Bénigne Emmanuel Clement Miller for the Bibliothèque Nationale de France. Its location for more than three centuries has remained one of its mysteries, and there is no consensus either on its immediate purpose or on the exact authorship of its maps. An inscription indicates that it was made by order of King Manuel I of Portugal and that the cosmographer Lopo Homem, who assumes authorship in the first person, was commissioned for its production; however, it is thought that the illuminator Antonio de Holanda and the cartographers Pedro Reinel and his son Jorge Reinel also participated (Marques 2011: 29). There is speculation that certain geographical errors in the atlas – primarily, the idea that oceans were fully enclosed by land with no waterways to transit between them – may have been included on purpose, to discourage circumnavigational voyages already about to take place under the auspices of the Spanish crown. Pedro and Jorge Reinel, in fact, were already involved in the preparations for Magellan's voyage during the period when the atlas was being made. This suggests their extensive knowledge of the oceans, as well as the possible subterfuge inherent in the project.

The history of the atlas has been told in detail, among others, by Marques (2011); however, our interest here lies in its representation of the landscape. *Terra Brasilis*

carries a wealth of topographic and hydrographic information, including some 122 place names along the coast (Marques 2011: 318) and some surprising lines that seem to allude to the Amazon River system. Despite this apparent precision, its visualization of Brazilian landscape mobilizes imagery that is both fanciful and instrumental. In these imaginaries, three elements stand out that, together, constitute an anthropocentric vision of the territory and a panegyric to extractivism: anthropophagous peoples, fantastic zoology, and exploitable resources – in this case, brazilwood.

The Cannibal Trope

According to Sergio Buarque de Holanda, the Portuguese navigators should have arrived in the South Atlantic somewhat dispossessed of fanciful ideas about the people and lands that they would find there, as they had been in contact with other regions of the world for long enough to have sized up the degrees of otherness and the possibilities of wealth that awaited them (2000: 1). Even so, their accounts of the encounter heavily exoticize the people's nudity, anthropophagy, and other aspects of their human-nature relationship. The notion of the cannibal, coined by Christopher Columbus in the Caribbean in 1492, was the model par excellence deployed to describe the populations of many Latin American territories (Chicangana-Bayona 2013: xvii-xviii). The consumption of human flesh, a practice portrayed in the engravings that illustrated the letters and chronicles of discovery, nuanced the also widespread Edenic notion of the peoples encountered. The innocence associated with nudity and a way of life harmonious with nature coexisted with darker ideas of primitiveness, alien to the taboos naturalized in Judeo-Christianity. Incidentally, the term *anthropophagy* existed earlier in Europe, and several anthropophagic practices were common in folk medicine (Federici 2010: 290). *Cannibalism*, on the other hand, arises in direct association with the conquering project, as a mark of radical otherness.

Many visual images made during the fifteenth to seventeenth centuries of the peoples inhabiting this region of the continent, analyzed in detail by Chicangana-Bayona (2013), deal with cannibalism. For purposes of communication, this was reduced to the caricatured representation of body parts recognizable as human: an arm, a leg, or a head in preparation for consumption or already being consumed. *Terra Brasilis*, unlike these other images (including maps), does not portray anyone eating human flesh; instead, it only mentions anthropophagy in the written legend. The need to bring this aspect of the population to the forefront is evident, and indeed, it would remain a privileged trope in characterizations of Brazil for centuries. For example, the account of the German soldier Hans Staden and his captivity at the hands of the Tupinambá, emphasizing the ritual consumption of war captives,

has been translated and edited numerous times since its original publication in 1557 (Staden 1928; see also Villalta 1948: 49–63).

The usefulness of this type of representation for the colonial enterprise has been noted by Silvia Federici, who writes that the European inculcation of repugnance towards the American peoples “must be considered as an inherent response to the logic of colonization which, inevitably, needs to dehumanize and fear those whom it wants to enslave” (2010: 293). In order to become part of the European civilizing project, native people would have had to detach themselves from their entire cultural constitution, deeply rooted in particular concepts of the body. In reality, such a rehabilitation was not even contemplated; rather, the “cannibal Indian,” along with other “animals,” became part of the exotic repertoire of New World zoology.

Fantastic and Abundant Zoology

Terra Brasilis portrays a territory of trees and men, living in coexistence with animals of various kinds. The birds, with bright blue and red plumage, are decorative as well as descriptive elements; their colors correspond to the pennants and shields on the sea, imparting visual coherence to the image and perhaps reinforcing the idea of possession. The parrots, described in all the early European accounts, seem to have been the fauna that most impressed travelers. Specimens, moreover, were sent to Lisbon by Cabral and taken to France by smugglers in later decades (Taunay 1934: 68–69), which is why the mapmakers were able to portray them with some accuracy. The other animals are more indeterminate in form: monkeys and felines with stylistic traits of medieval European art rather than specific American species.

A large, winged dragon on the far-left edge of the map’s central horizontal axis stands out in this regard. This figure exemplifies Taunay’s observation: “Chroniclers and historians of the New World, in the first centuries, constantly reveal how much they were influenced by having read or remembered the texts of the ancient authors of medieval *Bestiaries*” (1934: 48). The scene is attractive and exoticizing, more suitable for “a princely gaze” than as a tool for navigation (Marques 2011: 317). Yet the depiction of animal diversity contributes to the impression of abundance: in terms of input for the colonial project, it tells of a land whose very nature invites exploitation.

Brazilwood, or the Land Offered for its Exploitation

In contrast to the relative diversity of fauna and the apparent toponymic precision of the *Terra Brasilis*, the vegetation is striking for its uniformity. Apart from some shrubs – which could well be young specimens of the species in question – the im-

age focuses exclusively on the brazilwood tree. This species, designated *Caesalpinia echinata* for some centuries but recently reclassified as *Paubrasilia echinata* based on studies that reveal it to be distinct from other members of the genus *Caesalpinia* (Pesquisa FAPESP 2016), would be the most important product for Portuguese trade in the early colonial period. Therefore, this tree, tall and green, dominates the territory represented on the map.

Called *ibirapitanga* in the Tupi language, brazilwood was prized in Europe for its timber but even more so for its resin, which was used as a dye for fabrics. The vermilion color it generated, called *brasil* or “ember color” in Latin, gave its name to the tree and later to the territory. The exploitation of brazilwood began in 1501 and shortly thereafter it was designated a royal monopoly, managed by the crown through concessions (Schwarcz and Starling 2016: 21). Upon reaching the European market, the product gradually became identified with the country, above other possible designations: at first, the new colony was named Terra de Vera Cruz or Terra de Santa Cruz, but the religious reference dissipated in the face of the impulse to exalt the *ibirapitanga* and raise its mercantile value (Ibid.). Thus, as the map under consideration shows, an extractivist relationship was consecrated in its very identity.

What is extremely interesting in *Terra Brasilis* is that, barely nineteen years after the arrival of Cabral’s expedition and even less time since the formal beginning of the brazilwood trade, the representation of its extraction by local people is naturalized, as if it were just another element of the landscape and had perhaps taken place before colonization. Of the eight human figures represented, four wear feathers, and three of them carry bows in reference to hunting. The fourth figure, larger than the others and located far to the south, is kneeling on the ground, perhaps in a submissive attitude, as it is not clear what task he is performing. The other people are naked and shown either in the act of carrying brazilwood or splitting it for transport.

In this representation of humans and their labor, we can clearly appreciate the domestication of the native population in the service of the colonizing regime – which, for its part, is left out of the image. Its absence reinforces the idea that it is *natural* for these naked brown beings to harvest the wood and for the Portuguese ships to collect it. Such a depiction within the landscape is not merely decorative but also informative and instrumental. There is, moreover, a centrifugal spatiality: timber workers are in the central part of the territory, between the coast and the forests, i.e., they are forest dwellers who go to the coast with the product. The map is thus dynamic, both on land and at sea. Inland it is dense, with animals and vegetation, while outward, it becomes simple and transactional. What is crucial is the long line of nomenclature that marks European dominance: the written word that locks up natural resources and controls the labor used to extract them. Since the inhabitants do not even need clothing, it is understood that they require no remuneration for this work. The fact that in the image the most passive human figure is larger than the

ferocious dragon suggests that Brazilian nature, despite its strangeness, presents no impediment to the scientific, organizational, and civilizational superiority of the Portuguese crown and its representatives.

Final Thoughts

Despite its centrality in the configuration of the territory and corresponding imaginaries, *Caesalpinia echinata* would not endure as a significant element of the Anthropocene. Of the estimated 70 million specimens in existence at the time of contact, brazilwood would soon become an endangered species due to overexploitation (Schwarcz and Starling 2016: 21; Rocha, Presotto and Cavalheiro 2007: 752). Subsequent maps from the sixteenth century would also show timber harvesting as a natural activity of the inhabitants. Centuries later, the *Terra Brasilis* map from the Miller Atlas would be reproduced on banknotes and commercial product labels as an icon of national identity (Rocha, Presotto and Cavalheiro 2007).

In the early twentieth century, modernist intellectuals would take up both brazilwood and the image of the cannibal Amerindian as symbols of resistance. “Barbarous and ours,” writes Oswald de Andrade in the *Manifesto of Pau-Brazil Poetry* (1924), “The rich ethnic formation. Plant wealth. Ore. Gastronomy. The vatapá, the gold, the dance” (Schwartz 2002: 167). The aesthetically radical modernist position had far more impact in the artistic sphere than in the political one. Yet the avant-garde gesture would later give way to movements of Indigenous and environmentalist defense in the face of the genocidal racism and ecological degradation that has persisted ever since extractivism was assumed as a natural condition of the *terra brasilis*. In this sense, the cartographers of the sixteenth century not only gave expression to imaginaries of ecological and human otherness; they also captured in their maps the genesis of the Anthropocene, in the epic of the capitalist world-system that would structure colonial geography.

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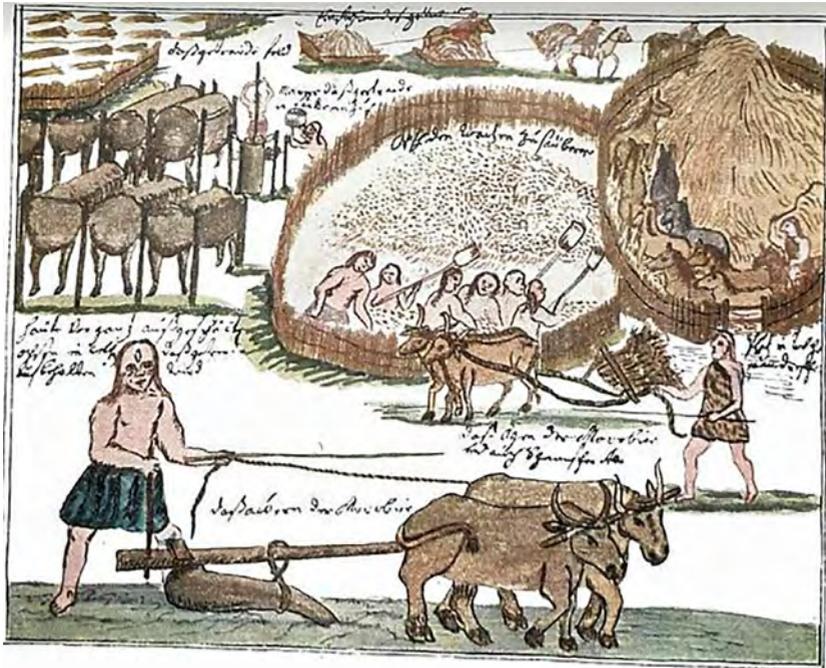
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Agricultural Work Among the Mocovíes

Ana Marcela França



Florián Paucke, "Las faenas agrícolas entre los mocovíes", in *Hacia allá y para acá. Una estadía entre los indios mocovíes, 1749–1767*, plate XXXVI (1944). Source: Library of the Cistercian Convent of Zwettl, Austria.

Usually, images produced in colonial times awaken our imagination about almost fantastic landscapes and situations that belong to a past considered very distant. However, when carefully observed, they reveal a much more complex universe, full of possible questions and ways to better understand human actions in the world. In addition, and similar to other sources, these images allow us to perceive that ac-

tions taken in the past are openly manifested in the present, through different political, economic, cultural, and environmental events.

The socioenvironmental transformations produced in the colonial centuries had a strong influence on the formation of the Argentine agrarian economy, in such a way that many of the species introduced at that time are still visible in its landscapes and its economy today. On the subject of biological dispersion, Alfred Crosby has already mentioned the dissemination of “portmanteau biotas” (or portable biotas) in the context of European colonization in the Americas, in which an intense global flow of living beings was inaugurated (2011). Many of these lives and pathogens that were transported from one continent to another are still unfolding in different forms, proportions, and contexts.

Based on this reflection, this chapter analyzes an illustration by the Jesuit Florian Paucke, an Austrian missionary (1719–1780) who landed in Buenos Aires in 1749. His destiny would be to pursue his mission in the north of Santa Fe and the southern Chaco, a region then inhabited by the Guaicurúes Indigenous peoples (Gobierno de Santa Fe 2006). From his experience with the Mocoví emerged a vast set of texts and images that described Indigenous customs, local flora and fauna, geography, and Jesuit practices in the reductions. The manuscript was written after the expulsion of the Jesuits from the Americas, between 1767 and 1780 (the year Paucke died). Between 1942 and 1944, a complete edition was published in Spanish in four volumes, translated by Edmundo Wernicke, entitled *Hacia allá y para acá: una estada entre los indios mocovíes, 1749–1767*. The choice of plate XXXVI, part of the latter publication, was because it depicts some elements considered today characteristic of a large extension of Argentine landscapes, such as wheat, cattle, and horses; as well as the native peoples, who still inhabit many of the agricultural areas.

Among his accounts, Paucke described the sowing and harvesting of wheat in the San Javier reduction. San Javier was created in 1743, the result of an agreement between the government of Santa Fe, priests, and local caciques; in pursuit of a peaceful coexistence, among other things (Scala 2019: 25). The sedentarization established by the reduction was aimed at the pacification and evangelization of the Indigenous people and the abandonment of their “erratic” life through different activities, from the religious to work. Currently, San Javier is the main city of the department of the same name, in the province of Santa Fe, located in northeastern Argentina, in the Chaco-Pampas plain.

In the image, the sedentarization of the Mocoví peoples through agricultural activity is striking. Originally, the Mocoví were a nomadic, hunter-gatherer people. The presence of cattle and horses among the Mocoví dates back to the seventeenth century, when the rewilded animals reproduced in the fields. The horse was quickly incorporated as it offered greater mobility, while cattle (the introduced species *Bos taurus*) served food purposes (Rosso and Medrano 2013: 51). Prior to the reduction, the Mocovíes already had commercial relations with colonial society, and their con-

flicts with the Spaniards and Creoles for the control of bighorn cattle were also permanent (Bender 2017: 39). However, they remained a mobile group, of which there is no record of instances of breeding and agriculture before the arrival of the missionaries (Nesis 2005: 76).

Paucke's plate offers a visual narrative similar to medieval iconography (that is, different episodes in the same image), which describes the different stages of wheat production: in the foreground, it illustrates how the land was ploughed with the help of oxen; then, how the grain was separated from the chaff by trampling mares in the fence, how it was cleaned; how it was kept in whole ox hides and; finally, at the top left, the wheat field appears. In the text referring to the image, Paucke describes in detail all the work done by the Mocoví, as well as other related activities. One of the most interesting pieces of information provided by the Jesuit is about the preferred type of payment taken by this Indigenous community: he granted "permission to hunt with their chiefs rewilded horses in the field, for as many days as they had spent during the cut; they preferred this to any other payment" (Paucke 2010: 546). This data shows the free and hunting essence still prevalent among the Mocoví, then subjected to the disciplined work of agriculture.

First of all, the image illustrates an agricultural activity commonly carried out in the reduction, but also shows the subjugation of animals, land, and humans. Faced with the occupation of their native territory by the colonial system, the Mocoví peoples – as happened with other Chaco ethnic groups – were losing their space of survival, where they could previously feed and develop. It was fundamentally this pressure and the constant conflicts that led them to submit to reductions. In addition, "to the pauperization of environmental conditions in the Chaco that manifested in the extinction of different animal and plant species, the dispersion of a smallpox epidemic between 1732 and 1736 was added" (Nesis 2005: 89). Faced with the problems arising from Western occupation, the dynamic fields previously dominated by hunter-gatherers were gradually redesigned and adapted to the European model of civilization. After the expulsion of the missionaries, and without the effective support of the official authorities, the precarious way of life of the Indigenous people became a permanent reality. Due to the injustice caused by the non-compliance of land distribution and the growth of the town, in 1904 the Mocoví carried out the last Indigenous raid or *malón* in the streets of San Javier, resulting in more violence and prejudice in relation to the natives.

Although the ecological transformations that occurred in the colonial period did not have the current proportions, they were nevertheless profound. The introduction of new technologies, species of fauna and flora, pathogens, people, in short, foreign culture, caused unprecedented socioenvironmental transformations in Argentina. In the image analyzed, we can observe the beginning of the alterations that the Pampean region would suffer especially in the following century, when the agribusiness model was adopted. Thus, from a long-term point of view, we can affirm that this im-

age shows the origins of the Anthropocene in the center-north region of the country. In Argentina, a nation whose economy has been structured especially on the basis of agricultural activity for centuries, the introduction of species and the acculturation suffered by the native peoples meant a socioenvironmental change that continues to show even today, through agro-industrial production and territorial conflicts.

Argentina is currently one of the main producers of grains (corn, soybeans, wheat, etc.) and cattle ranching in the Global South. Of exotic origin, these productions have abruptly affected the ecological and social universe of the country throughout the historical process. Environmental crises, such as the loss of native fauna and flora, long droughts, criminal fires – like the ones currently happening on the islands of the Paraná Delta, located in the provinces of Santa Fe and Entre Ríos, provoked to “clean” the area for cattle (Risso 2022) –, among others, have been a permanent reality in several provinces. At the same time, ethnic conflicts and power disputes over Indigenous territories are still far from being resolved peacefully. These are chronic problems, many of which arose in colonial times and are still going on in the current Anthropocene era. That is to say, if before the Jesuits sought to dominate nature through the manipulation and control of human and non-human lives, today this domination continues to develop through other technologies, such as the use of chemical fertilizers, pesticides, and genetic alterations. Bio-technological activity in Argentina “exerts power over life, not only displacing species for centuries in ecological niches, but now also manipulating and modifying the genetic code” (Zarrilli 2020: 128). Thus, in more than three hundred years of domination over the land, the domestication and manipulation of lives through agricultural activity has generated innumerable social, cultural, and environmental crises, which are far from being solved.

Wheat continues to be produced in the region described by Paucke, and current data show that northern Santa Fe is the second largest producer in the country (Instituto Nacional de Tecnología Agropecuaria [INTA] 2021). In addition to wheat, the region currently grows other types of grains, such as sunflower, soybeans, corn, and is also dedicated to livestock. The department of San Javier’s economic base is livestock and agriculture (Cámara de Senadores de la Provincia de Santa Fe 2022). However, the city of San Javier engages in other activities, such as tourism, sport fishing, and rice production. After the different colonization processes, according to the 2010 census, the city has a Mocoví population composed of only 603 people (Instituto Nacional de Estadística y Censos [INDEC] 2010), out of a total population of about 16,000 inhabitants.

Based on the history of this region, how can we think of the Anthropocene in the multiple realities that arose in the colonization process of what is defined today as Latin America? After this brief reflection based on Paucke’s image, it seems necessary to consider the problems that emerged from then on, when foreign species and cultures were introduced into territories previously drawn by other spatial log-

ics and experienced from other worldviews. Starting from this, it is essential to understand the colonial past of these places, in order to project a future of equity for human and non-human beings that today inhabit territories marked by entangled histories.

The current socio-environmental crisis in Latin America has been developing for centuries, and also has roots other than those linked to the use of fossil fuels. Thus, to think of Latin America exclusively from Western logic is to ignore the biocultural complexity of its nations (official or unofficial); that is, it is to ignore the different forms of life that keep it throbbing. For this reason, reviewing the colonial past from the perspective of environmental history can also be an act of decolonization, because through studies on the interaction between non-humans and humans, these different realities are revealed. By making these realities perceptible, differences begin to emerge, thereby shifting the world away from being based on a single dominant knowledge. Hence, Paucke's image not only informs us about aspects of colonial Argentina, but, when observed from a critical point of view, it opens up the possibility of projecting a future based on the lived past, and not on a barely theorized past.

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The Parliament of Quilín

Pablo Marimán Quemenedo



Alonso de Ovalle, "Pax inita inter hilpanos et Indos an 1641", in *Historica relacion del Reyno de Chile y de las misiones y ministerios que exercita en el la Compañía de Jesus* (1646). Source: Biblioteca Nacional de Chile.

The *Wallmapu* is an ancestral space defined within the parameters of the *Mapudugun* language of the Mapuche people. It alludes to a set of demographically, linguistically, and historically united territories that, as such, constitute a nation, understood as a human and cultural landscape interwoven with multiple habitats, to which the inhabitants feel they belong. According to *rupalu chi zugu*, the temporal perspective of the Mapuche (Huenchulaf and Ancalaf 2007), the margins of the colonial phenomenon (*trawümen*) are located in a *newe kuiñi em*, that is, a time not long ago, of which there are stories (*piam*) that overlap with later periods (Cayupan

2021; Marivil and Segovia 1999). However, these stories allude to historical events whose discursive nucleus is articulated in the *winka* (Spanish, Chilean, and, later, Argentinian) invasions and their effects: wars, displacements, and rearticulations. Although a plethora of images from the colonial period depict the spaces where this system was imposed on the peoples of Aby Yala, these spaces do not correspond to the Wallmapu; that is, in the temporality of the sixteenth to the eighteenth centuries, maps, engravings, and paintings were products of the colonial imaginary, rather than records arising from settler colonialism.

This process is exemplified in the engraving studied here, part of the *Histórica relación del Reyno de Chile* of 1646. Its author, Father Alonso de Ovalle, was a Jesuit who, like many of his order, was committed to the evangelization of the Mapuche who resisted the Spanish Conquest. He was sent to Rome in 1640 as procurator of the ecclesiastical vice-province of Chile in order to raise funds and recruit more missionaries for the divine cause. During his decade-long stay, he wrote the *Histórica relación*, a report that reflects the vicissitudes of the time and also its transformations. The work was illustrated by Francisco Cavallo, whose art complements the experiences and situations that the author describes by way of his own emphases and connotations. The engraving in question evokes a historical event that not only had repercussions in its immediate context, but also creates a discursive and graphic dialectic (Didi-Huberman, Cheroux, and Arnaldo 2018) whose montage and memory extends to the present through historiography, politics, and Indigenous intellectual agency.

The engraving portrays a peaceful encounter between opposing sides in the conflict derived from the Arauco War, which had begun with the founding of the fort of Santiago in the Mapocho Valley in 1541. The image represents a *parliament*, a moment in which the two sides sought to negotiate an agreement that would allow at least a ceasefire, if not a peaceful conclusion to the war. This parliament occurred on January 6, 1641.

From the perspective of the power and resistance of the Mapuche, the parliament of Quilin finds its context in the changing biopolitics of the European empires of the time (Kaltmeier 2022). Sovereign power was moving towards a pastoral form that sought to optimize its intention not only to battle and impose its own reason, as previously had been the case (as expressed in the conquests of Indigenous territories, until losing force and entering a context of crisis), – but also to subjugate these individuals and groups in an effort to transform them and impose order by means of assimilation. Both the missions and the parliaments were part of this strategy that sought to court local caciques and make them co-responsible for practices of surveillance and control over the behaviors, conflicts, and movements of the society, its members, and foreigners. For their part, the Mapuche complemented this strategy of imperial containment through a method of negotiation, the *koyang* (Contreras 2007), which came to be called *parlamento*, thus establishing limits based on a pact of alliance.

The scene depicted by the engraver does not appear to show the submission of either of the parties, as it is a meeting. However, the textual heading describes the Mapuche surrender: *Pax inita inter hilpanos et Indos an 1641 qua Indi Hispano Regi manus dederunt* (Peace was made between the Spanish and the Indians in 1641, when the Indians surrendered to the Spanish king). This historical event in the shift from war to peace was traversed by a series of phenomena that is represented in part of the engraving. Among the outstanding ritualistic aspects is the centrality of the Christian altar above the scene that highlights the cross while to its right there is a sacrifice of camelids (*weke*), called *chilihueques* by the Spanish chroniclers (González de Nájera 1968[1614]; Mariño de Lobera 1595). This is complemented by the written legend “*Indorum ritus in foedere faciundo*” (Rites of the Indians when making the pact). Studies of the disappearance of this species of camelid during the seventeenth century (Colectivo Chilliweweke 2021) understand the impact of conquest as not only circumscribed to human populations, for instance, in the case of the *kullinicide* (extermination of the *weke*) or the displacement and annihilation of native species to replace them with others that were functionally important to the European mercantilist economy.

This visual record of the parliament as a political and ritual act depicts only men from both nations. The absence of women in the engraving, both Spanish and Mapuche, according to studies (Payas 2020), is explained by the fact that women were only in attendance to handle logistical tasks on meeting days or were used as pledges of peace and exchange in the negotiations, reintegrating them into their respective societies, where they had previously been victims of abduction and subjected to captivity. Moreover, the subjects represented are collective rather than disaggregated individualities; written captions allow us to identify the *marchio de vaydes*, that is, the Marquis of Vaydes, Francisco López de Zúñiga, leader of the Spanish forces who also served as governor of the Kingdom of Chile. However, a similar caption was not used for the Mapuche chiefs (*lonko*), one of whom appears with a cinnamon branch (*foye*) in his right hand; these are labelled *Cacique Indorum antesignamus* (Chiefs of the Indians). Chronicles of the period refer to these individuals as *bokifoye*, identifying them as principal subjects in the ceremonies associated with the peace agreement. From these same contemporary sources (Rosales 1640), we know that the principal *lonko* present at the event were Lientur, Butapichun, Chicawala, and Lincopichun. Once the pacts were consecrated through rites and the presence of members of different levels of social hierarchy, a new formal practice was instituted in which, with each transfer of power between colonial governors, a new parliament would be held. This event served as a commemoration and at the same time a re-actualization of the pact.

Although its overt message has to do with the war, the image also shows other underlying processes that were already naturalized at the time and thus not the object of emphasis. The landscape devoid of trees, mountains, or rivers – the background barely indicates a specific topography – makes the human actors and their

history central. However, an important element in the foreground is the omnipresence of horses, illustrating one of the most remarkable phenomena of this century of contact: the appropriation and incorporation of equine species into the Mapuche world. Horses contributed to the defense of Mapuche society, giving them an incomparable tactical advantage, a strategic balance that made it possible to establish peace through parliaments like the one portrayed here. Horses, furthermore, shortened distances and enhanced travel; they were also used in exchanges and integrated into rituals, such as the Mapuche diet (Leiva 1982).

Along with the *kawello* (horse), cattle, sheep, pigs, goats, mules, and donkeys were also incorporated into Mapuche culture, as well as displacing the *weke*, alongside the introduction of new agricultural practices and crops, particularly wheat (*kachilla*). War, as the engine of this history, transformed these intertwined societies and resulted in this percolation of species (*kulliñ*) which, in its proliferation, grew into an unprecedented livestock model whose volume, dispersion, and circulation in the Wallmapu affected the native society, its surrounding areas, and the environment with which they were inextricably connected. Among the recorded transformations are those regarding the pressure on the soil after the new species acquired access to pastures, watering holes, and forests. The Mapuche society found itself in a transition from a domestic economy with a focus on community toward a circulation of livestock not only through the pasture cycle between different ecological niches, but also through dry ports of exchange, strengthening intra- and inter-ethnic, commercial, and political relations. Horse derivatives such as meat, hides, and tallow boosted an industry that, like textiles (Chacana 2023), increased the *trafkintu* (exchange) between nations and whose dynamics and volume contributed to the international movement of goods that left traces on the landscape expressed in the *ras-trilladas* (*Kulliñ ñi rūpü*): roads where cattle were herded (Ancan 2002; Bello 2011), as well as the series of military forts built to provide security for commerce and prolong imperial sovereignty (Barba 1997; Alioto 2011). These were connected to the *caminos reales* (royal roads) and the transcolonial trade network.

Meat preservation systems, at this time, used salt and smoke for conservation of the product. The salt flats (*chadimapu*), scattered in certain places throughout the Pampas (*fütxa lelfim*), were sites of pilgrimage for the livestock business; traders would go in caravans to buy salt, then sell or deliver it to the ports from where it would leave for other areas of the Spanish empire. Residents of these territories were called *Chadiche* (salt people) and were clearly aware of the resource under their control, gaining sympathy that allowed them to ally themselves commercially and militarily, as would become clear over time (Lobos 2015). This had a notable impact on the sociopolitical sphere. Although cattle among the Mapuche were within everyone's reach, some had a greater proportion than others, achieving not only economic power but also a prestige that developed into differences between and within lineages. This in turn impacted the political world, particularly in the for-

mation of leadership, some more distributive than cumulative. Exchanges sealed alliances and generated confrontations that, in the context of border societies, created new dynamics in the relations between the colonizers and the *Wallmapuche*.

These conditions led to complementary and competitive relationships that, over the centuries, resulted in consequences for the Wallmapu. War was to be a ghost that would haunt the two societies in their interaction and a wound in the body interconnected with the diversity of existences (*Itrofill mongen*). These, finding themselves controlled and decimated, marched toward what would be massively unleashed from the nineteenth century on with the appearance of the nation-states, whether republican or liberal, and the expansion of their agricultural and livestock frontiers. This expansion remade the Indigenous territories, seeking to erase all signs of barbarism and savagery attributed to the “Indians” and their spaces, as well as the parliaments that had revitalized the earlier pacts of peaceful and mercantile coexistence. Since then, the coloniality of the image from a supposedly neutral perspective has naturalized these processes of devastation (Barriendos 2011). The Eurocentric, colonial, and racialized narrative, although condemning classical colonialism, does not see or recognize its own continuities and reproductions in the apparatuses of power and representation. These continue to prevail and intensify in the Anthropocene, whose core contains supremacist and racializing impulses over others (peoples, territories, lives): a habitus that is reproduced in a historical teleology. Meanwhile, the historical *others*, some of whom view their project explicitly as alternative while others do not, today emerge as antitheses, if not a parallel universe that has struggled to not disappear despite changes and adaptations. Herein lies the unresolved historical continuity of the conflict that this image contains.

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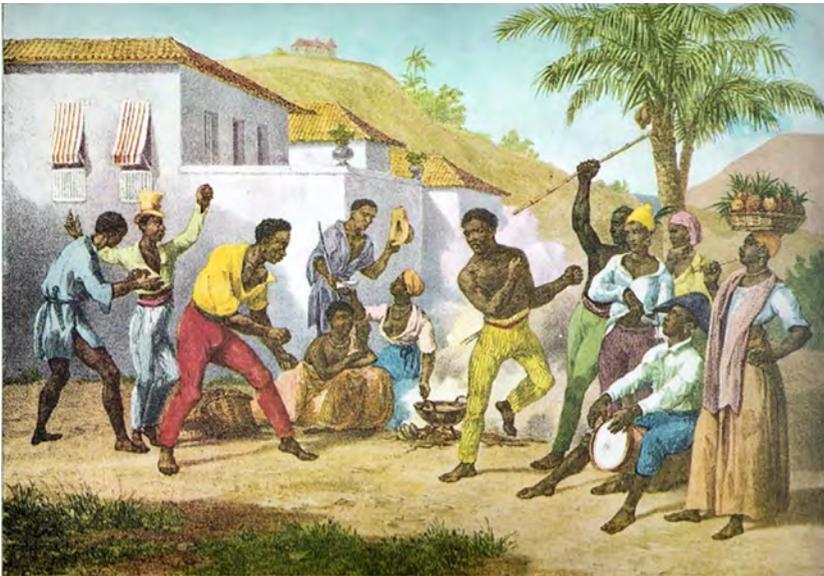
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Playing Capoeira or the War Dance

Fernanda Oliveira de Souza



Johann Moritz Rugendas, *Jogar capoeira ou danse de la guerre* (c. 1830). Painting reproduced as lithograph in *Voyage Pittoresque à travers le Brésil*, plate 97 (1827–1830).

It was a clear morning and Johann Moritz Rugendas (1802–1858), a German painter from Augsburg who visited Brazil between 1822 and 1824, was likely strolling through the streets of a city in colonial Brazil. The landscapes emphasized a mixture of rural and urban spaces, which was very common in the cities of this time. Rugendas observed large estates and low hilltops, bare, without a single tree. At the end of one street or another, he saw huge coffee plantations and other crops disappearing into the horizon.

The painter's path crossed that of the passers-by in their daily comings and goings. The year was 1835 and, although some countries in the Americas – also called *Abya Yala*, *Anáhuac*, if we use decolonial denominations (Cabrera 2012; Mignolo

2007) – had already abolished slavery. Others would do so in the following years, yet Brazil would continue to maintain its brutal slave regime for more than fifty years, becoming the last country in the continent to abolish, at least officially, the practice (Schwarz and Gomes 2018). However, the deeply rooted racist structures in this country have not yet disappeared.

Among the myriad of different noises, Rugendas perceived a sound that stood out from the rest and caught his attention. The roll of a drum, loud, rhythmic, accompanied by clapping and voices in unison, forming a circular chant. Curious, the painter let himself be led by the sound to a fabulous manifestation under a coconut tree: a circle of people. In the center of the circle, two men look at each other in concentration, swaying their bodies in a semi-drunken way, performing their *ginga*. Alternating fast and precise strokes, they flail their feet, legs, and heads, stopping just a few centimeters away from their opponents. The movements form dialogic synchronies of question and answer. They fight at the same time as they seem to dance. This strategic game that weaves and unweaves with elegance is *capoeira*, a word that means “that which was forest,” from the connection of the terms *ka’a* (“forest”) and *pûer* (“that which was”) – derived from the Tupi-Guarani language. It alludes to the shallow forest areas in the interior of Brazil, where Indigenous agriculture continued to be practiced and where this dance could be performed, although consensus on the origin of the term is not unanimous. *Ginga* is the core movement of capoeira, and its name is inspired by Queen Nzinga (*Ginga*) Mbandi Ngola of the kingdoms of Ndongo and Matamba, who resisted colonialism and slavery by negotiating peace treaties that the Portuguese colonizers never respected.

Finding historical records on capoeira and defining the temporality and causality of its origin is an arduous task, since the hegemonic narrative – Eurocentric, white, and male for centuries – has led to silencing thousands of other narratives. *Playing Capoeira or the War Dance* by Rugendas is, therefore, a magnificent piece of documentation that opens possibilities for a wide range of interpretations. On the one hand, it allows us to perceive the ecological crisis initiated with colonization, woven through its images, and on the other, to contextualize capoeira in its framework of practices of anti-hegemonic (re)existences, “energized in its anti-colonialist and anti-racist character” (Araújo 2017). With this aim in mind, I will first provide a few brief reflections on capoeira based on two aspects present in the painting, and will then address the environmental extractivist context of this moment in history.

Musicality and its Role in the Preservation of Memory

Capoeira is a tool for the preservation of individual and collective memory in the face of racial ideological violence that has annihilated knowledge, histories, and identities. Through its songs, it orally transmits stories that remain alive to this

day, in addition to preserving, to a certain extent, linguistic expressions of ancient African languages and a past Portuguese. The instruments used, such as the *agogo* or the *berimbau*, can be traced back to specific regions of the African continent, making it possible to reconstruct, to a certain extent, their origins of its practices. Its different rhythms from religious percussion and various dances, such as the *ngolo* (Araújo 2017), blended to create a musicality that was both afroreligious and pagan, which allowed not only the exercise of faith, but also varied cultural expressions. It survived by hiding its warrior aspect. Vicente Ferreira Pastinha, the capoeira master and philosopher responsible for the dissemination of traditional capoeira from Capoeira Angola, explains:

Black Africans in colonial Brazil were slaves, and in such inhumane conditions they were not allowed to use any type of weapon or practice any means of self-defense [...] In these circumstances, capoeira [...] was practiced in secret or disguised, cautiously, with dances and songs from their homeland. (1988: 22)

The Role of Women in Liberation Strategies

Of the various elements that make up the capoeira *roda* (capoeira circle or ritual), an inherent and essential part is the presence of the community and the interactions that result from both of them. The image portrays various social dynamics, among which the presence of women, both outside and inside the *roda*, must be highlighted. In reference to the latter, the presence of a woman, the character with yellow scarf to the right of the male player, could be a female *capoeirista* who subtly shows a possible bladed weapon (according to some accounts, players sometimes hid small weapons such as razors or blades in their hair, clothes, or shoes to intimidate their opponents). It is worth highlighting this possibility, since women's participation in capoeira has been made invisible through a logic that appropriates and dominates the discourse. There are accounts found in police reports from Bahia, in the early twentieth century, of women called troublemakers (*desordeiras*), who practiced capoeira or used it to defend themselves. To name a few, Rosa Palmeirão and Idalina come to mind.

Although these were times of heavy anti-slavery political agitation, the slavery regime's privations and penalties continued to be imposed. Some enslaved women, however, were able to obtain a status, for example, as *ganhadeiras* (those who performed different commercial functions and were obliged to deliver to their *senhores* a pre-established amount of what they received), which helped them purchase their own freedom. The image seems to portray this social condition, since we can see two other female figures: a cook and a possible fruit vendor, both probably *ganhadeiras*. "In street vending, mainly through small stores, Black women occupied a promi-

ment place in the urban labor market” (Soares 1996: 57). Carvalho (2018: 166) adds that “women represented two-thirds of the freed persons in Rio de Janeiro and Salvador in the nineteenth century.” An example of these women, whose history is little known, was Luiza Mahin (Lima 2011). Although there are doubts about her biography, it is known that she bought her freedom in 1812 and that, besides helping to organize the purchase of freedom for many other enslaved women, she participated in uprisings against slavery, such as the Revolt of the Malés, which took place in Salvador the same year that Rugendas walked the streets of colonial Brazil.

Capoeira was born on Brazilian territory as an embryonic manifestation of various African expressions in its diaspora. Today it is one of the most important Afro-Brazilian arts, despite the fact that it was banned until 1930. Its anti-colonial experience – material and immaterial – was interwoven, and it built ways of existing and resisting physically, morally, emotionally and spiritually against the violent slave regime.

Colonialism, and the racism created to legitimize it, mark the beginning of modern history. It established the *modus operandi* of our westernized societies and leads us, together with its modernization project, to multiple and complex crises. Its deployment has not only established structural domination over certain human lives (Indigenous, Black, female), but also over non-human lives in an intertwined and inseparable way – which can be understood, for example, in the conceptual framework of the Anthropocene or its critical variants such as the Capitalocene and Planationocene (see e.g. Haraway 2016, Ferdinand 2022).

Ecological Crisis and Extractivism: the Example of the Atlantic Forest

In the face of this, when looking at two background planes of Rugenda’s work, one can see bare mountain peaks, without a single tree. Since the European invasion and the centuries of colonialism and imperialism that followed, Brazilian society has settled, developed, and expanded along the Atlantic coast of the continent, where the Atlantic Forest, a tropical rainforest similar in biodiversity to the Amazon, originally grew exuberantly. Once covering 1.2 million square kilometers and distributed widely in terms of altitude, latitude, distance and proximity to the sea, the forest created the potential for its different morphophysiologicals and the numerous ecosystems associated with it, such as mangroves and estuaries.

The appropriation, commodification and exhaustive utilization of nature, i.e. non-human species, finds itself epitomized here. The extraction of *Pau-brasil* (Brazilwood), which had a direct and immediate impact on the forest, dates back to 1502. Due to its reddish core, it was used as raw material for textile dyes in Europe, generating abundant wealth for the Portuguese crown (Dias 2018). The predation of Brazilwood and that of other Brazilian trees quickly put them in the process of

extinction (Santos 2009). Moreover, it was precisely in the Atlantic Forest territory where the four major economic activities from the sixteenth to the nineteenth centuries, based on enslaved labor, were developed: sugarcane monocultures with mills, coffee monocultures and their roasters, cattle ranching, and gold and gemstone mining (Freitas 2013). Likewise, the energy needed to sustain these economic activities was obtained from firewood and charcoal, evidently extracted from the surrounding jungle (Dean 1996). After having endured 10,000 years of presence and interaction with human societies, it was during colonization that the decline of the eco-systems began (Pádua 2010). As Williams (2003: 378, cited by Brannstrom (2016)) mentions, “[the devastation of the Atlantic Forest] must rank as one of the most voracious, thorough, profound and, in the extreme, perhaps unnecessary and senseless episodes in the annals of the Earth’s deforestation.” Today only 7–11 percent of its original area remains, represented by small, widely dispersed fragments. In comparison, some thirty-five years ago the Amazon rainforest had lost only 1 percent of its vegetation cover (Pádua 2010).

Thus, the regimes of extraction and exploitation of life established at the beginning of the modern era in almost the entire world – by 1935, about 85 percent of the planet had been colonized by European countries – outlined the enforced power structures between the Global North and Global South, between colonizer and colonized, which are still by no means dynamics alien to the current ecological crisis. Ferdinand (2021) approaches the history of modernity as conceptualized from a double structural rupture: on the one hand, the environmental crisis caused by a model of civilization based on technocratic and capitalist domination, which has systematically harmed ecosystems and both human and non-human communities; on the other hand, the colonial dimension, marked by processes of Western colonization and imperialism, which involved the subjugation and exploitation of Indigenous peoples and, in particular, of women.

Today, much of what remains of the Atlantic Forest overlaps with the territories of Indigenous and traditional communities: *Ribeirinhas*, *Caiçaras*, *Quilombolas*. To cite an example of particular interest, the Quilombo dos Palmares was one of the most important in Brazil and was defended countless times from colonial troops by its people and leaders, one of whom was Dandara, who had been an experienced *capoeirista*.

In the case of Afro-descendant populations, “this overlap is no mere coincidence but the result of a historical process that marginalized Black populations and led many of them to settle in areas far from urban centers or from the large monocultures that replaced native forests” (Silva 2012: 48). In addition, the *aquilombamento* (literally, the organization of a group of people in a place, forming a nucleus of resistance, the quilombo, now a metaphor for the fight for freedom) prioritized forests and mountain ranges as they were better hiding places and had resources available for the reproduction of their life forms. It is precisely in these remnants where the

highest degree of conservation of the forest and its biodiversity is found today (Andrade 2001).

Various conflicts of interest still exert pressure on the remnants of the Atlantic Forest and endanger all the lives that inhabit it. Without a decolonial perspective that confronts the capitalist and racist Western system and takes into account the plurality of life and different ways of living and thinking in the world, we will always be condemned to reproduce the same hegemonic power relations, thus reproducing the same racial, ecological, and epistemic violence as in the past. Understanding instead the interconnectedness of human and ecological relationships as ancestral and connected to their respective political, historical, and social context, which including senses of spirituality and communion with other beings, we can aid the shift toward a paradigm that is less colonial in its relation to the material world.

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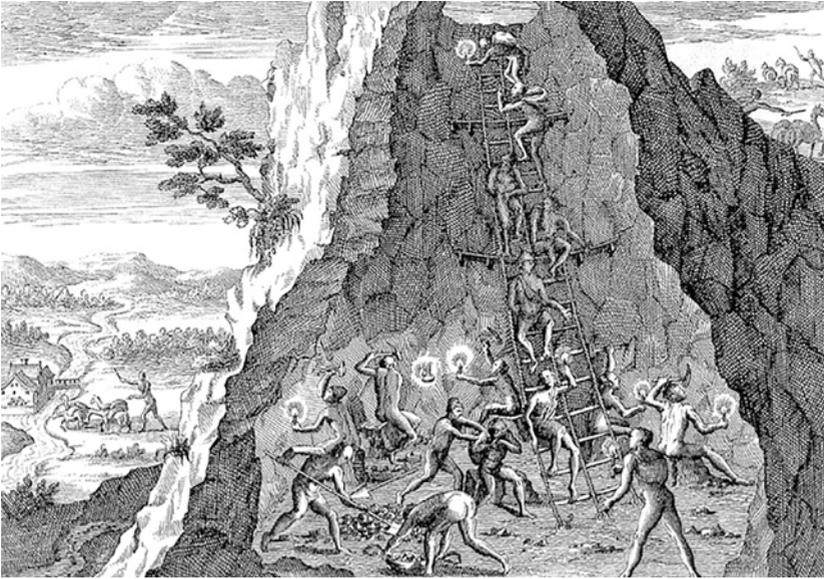
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Visual Representations in the Andes in the Colonial Period

Indigenous Miners in Potosí

Rossana Barragán and Luciana Molina



Theodor de Bry, *Indigenous Miners in Potosí*, in Johann Ludwig Gottfried, *Neue Welt und Americanische Historien* (1655).

Potosí Mountain is an impressive yet painful sight. Almost 500 years after its discovery by Europeans, it continues to be intervened and exploited. Its previous zenith has crumbled due to permeation and contamination by corrosive, emerald-hued *copajira* waters, which obliterate the attire of the *Palliri* and Mermaid women, caretakers from the hillsides who protect the mines and live above the mountains' waste disposal sites.

From 1545 onwards, the silver from Potosí enabled continuous trade between the Americas, Europe, Asia and Africa. This gave rise to the first globalization, primitive accumulation and the development of world capitalism. The exploitation of silver entailed the expansion of the mining frontier and caused significant ecological

change. The dense forests of trees such as *yareta* (*Azorella compacta*), *thola* (*Parastrephia lepidophylla*), *kewiña* (*Polylepis besseri*), and *kishwara* (*Buddleja coriacea*) were used as fuel for smelting and processing silver, which desertified the high plateau and vast regions between mountain ranges. Meanwhile, the mercury used in the amalgamation process, transported from Huancavelica (over 2,000 km away), poisoned bodies and territories. Silver production also involved intricate links between products and vast regions, as well as the coerced mobilization of over 12,000 *mitayos*, or Indigenous workers, who migrated to Potosí with their families. This comprised over 40,000 people travelling up to 300 km each year. By the end of the sixteenth century, no other productive center had reached the industrial and residential scale of Potosí. Thousands of llama and mule caravans transported silver from the Andes to the Pacific (Arica) and Atlantic (Buenos Aires) ports, from where it was shipped to Panama, Spain, the Baltic region, Africa, Manila and China.

Images of the legendary mountain and its silver traveled around the world, and one of the most famous, which would influence the renowned painter Paul Rubens in Antwerp, was made by an engraver from the same city. This engraving, which appears in a volume by Theodor de Bry, depicts the Potosí silver mountain, which gave rise to a settlement with a population of thousands. This settlement was said to be as large as Paris or London at the time. The “Imperial Village of Potosí,” perched 4,000 meters above sea level, produced a *commodity* that pushed the boundaries of non-renewable extraction to an unprecedented scale. Just as Theodor de Bry dissected the rich Potosí hillside, his image allows us to explore the connections between knowledge and power that such exploitation entails.

A Dissection of Bodies and Gazes

De Bry’s early engraving, which was widely circulated, shows an unusual image: a cross-section of the mountain that reveals its insides as if it were a human body.

This dissecting gaze creates the sensation of revealing what is hidden and suddenly exposing it: men working underground, almost swallowed by the mountain, living in harsh and violent conditions:

they work there inside – in perpetual darkness – scarcely knowing when it is day or when it is night. And, since these are places never visited by the sun, there is not only perpetual darkness but also extreme cold and very thick air, alien to human nature [...] A man retrieves a load of two *arrobas*, the blanket tied to his chest and the metal that goes in it on his back. They climb three by three: the one in front carries a candle tied to his thumb so that they can see, because, as we have seen, there is no light from the sky. (Acosta 2002[1590]: 180–181)

It is not only the high temperatures inside the mine that strip these men bare, but also the European imagination and representation of the worst working conditions under the Spanish Empire. The contrast between the man herding llamas in the background and the people inside the mine is also noteworthy. The man is outside in the open air, wearing a loincloth and a *chullu* (wool cap), and holding a staff to guide the group of domesticated camelids towards the river. The house, bridge and controlled vegetation denote civilization and peace. However, the attire of this figure bears little resemblance to how Indigenous groups actually dressed in the highlands, where thick layers of fabric were required for protection against the cold. The vaguely delineated loincloth reveals the imagination of the engraver, who created the representation from the other side of the ocean without having visited the American continent and thus exposes his lack of knowledge of the Andean region. Beyond these inaccuracies, the contrast between the two types of laborers portrayed in the image is interesting: the men working inside the mine, subject to the Spanish yoke, and the man working outside the mine in harmony with his surroundings. This is a contrast between civilization and nature.

The purpose of this image went beyond merely documenting the reality of these men; it sought to expose the Spanish regime's brutal oppression of Indigenous laborers in colonial America, while simultaneously serving as an accusation, and a pointed critique, of the political order in the Spanish Netherlands, particularly its persecution of Protestants.

Representing Otherness: De Bry's Double Critique

In the final decades of the sixteenth century, descriptions of the recently discovered American continent generated a profound sense of curiosity and fascination in Europe, thereby catalyzing voyages of conquest and colonization. Furthermore, this era was distinguished by a period of intense religious conflict between the Catholic and Protestant factions. Concurrently, as Viceroy Francisco de Toledo was instituting the *mita* system of forced labor in the Potosí mines, King Philip II was known to have initiated a campaign of repression against the Calvinists, resulting in the execution of thousands. In the context of religious confrontation, the goldsmith Theodor de Bry relocated to Antwerp, where he pursued a career as a printer and bookseller, acquiring the influence of renowned local engravers. In approximately 1585, he relocated to London, subsequently settling in Frankfurt, which was the epicenter of German and European trade at the time and a pivotal printing center (Van Groesen 2007: 4, 47–49, 64; Van Groesen 2008).

It has been said that in the religious confrontation there was a “war of images” (Wallerick 2010; Verstegan 1587), in which Catholics published illustrations of the atrocities committed by “Protestant heretics”, while De Bry in turn depicted the cru-

elty and violence of the Spanish. Analysts of his images have pointed out that the Indigenous were assimilated to Christians while the Spanish were identified with the bloodthirsty Romans (Wallerick 2010: 48; Greve 2004). Moreover, De Bry became known for his engravings that illustrated the work of Fray Bartolomé de las Casas. The latter's *Brief Account of the Destruction of the Indies* had been published in 1552 and translated into French by the Flemish Jacques de Miggrode with the title *Tyrannies et cruautés des Espagnols* (Tyrannies and Cruelties of the Spanish) in 1578. The edition included a note stating that the text should serve as an example and warning to the provinces of the Netherlands (Greer, Mignolo, and Quilligan 2008: 6; Chartier 2015). An English edition of 1656 was even more inflammatory, bearing the title *Tears of the Indians* (Brooks-Kelly 2016: 12). Michiel van Groesen, one of the most important scholars of De Bry's work, has emphasized the political aims of this "editorial strategy," at the same time that writings about the conquest of America served to spread the Black Legend (2007: 9, 22).

The publications and prints of the De Bry family also express a European perspective on what seemed to be an extraordinary expansion of the world, along with the desire for knowledge, exploitation, and control. Between 1590 and 1634, father and sons, without being themselves travelers or explorers of remote lands, published their magnum opus entitled *Collectiones peregrinatorum in Indiam orientalem et Indiam occidentalem*, featuring 13 volumes dedicated to the East Indies and 14 to the West Indies or America. The compendium was published in Latin, German, English, and French (Quilligan 2011: 11; Van Groesen 2007; Keazor 1998: 134) and included more than 600 engravings by prominent artists. The centrality of the image is such that Duchet considers that De Bry's books do not constitute written texts with illustrations, but rather "engraved texts" (*text gravé*) (Van Groesen 2007: 65, 95; Duchet et al. 1987).

Labor in the Depths of the Mine: Transforming the Landscape through Work

The image of Potosí, printed in 1601 in German and in 1602 in Latin, appears in volume IX, dedicated to the West Indies. The de Brys republished the work of the Jesuit José de Acosta's *Historia natural y moral de las Indias* in 1590 after living in the New World for more than seventeen years. The book was subsequently translated into Italian, French, German, and Dutch, with further editions being published from 1600 onwards. This extensive dissemination ensured its status as one of the most widely read works of its time.

For this republication, fourteen passages were accompanied by illustrations. In the German (Linschoten, Humberger, and De Bry 1601) and Latin (Jansz and De Bry 1602) versions, the famous Potosí mountain is included at the end of the volume

(Pino Díaz 2005). The written text describes the production of silver (in chapters 5 to 8), and the image of Potosí is titled “How the Indians extract gold and silver from the mountain” (in Latin: *Indi, Qua Arte Aurum Ex Montibus Eruant*; in German: *Wie die Indianer das Goldt aus den Bergen graben*). Potosí was erroneously identified as a site of gold production; when in fact its wealth derived exclusively from the extraction of silver. This inaccuracy reveals the De Brys unfamiliarity with America, and the distortions in their chain of information.

The image published in volume IX corresponds almost exactly to José de Acosta's written description:

Those who labor always work by candlelight, dividing the shift so that some work during the day and rest at night, and those who succeed them do the opposite [...] The metal is usually hard and is extracted by hitting it with a crowbar, breaking it, which is like breaking a flint. Then they carry it up on their backs by stairs made of three strands of cowhide, twisted like thick ropes: and from one strand to the other, poles are placed like steps, so that one man can go up and another can go down at the same time [...]. (Acosta 2002[1590]: 180–181)

The image is very peculiar and powerful. As Van Groesen (2007: 96, 253) argues, its author was probably inspired in Georgius Agricola, who was well known for his work *De Re Metallica*, a kind of bible of European mining published by Sigmund Feyerabend, a famous and successful German bookseller of the time whom De Bry met between 1587 and 1588 in England (Wallerick 2010).

The De Bry engraving of Potosí broke with Cieza de León's previous representation, a peaceful landscape with an imposing mountain but no workers, with houses and a stream running through its base. Here, in contrast, the nakedness of the workers inside the mines shows bare life within hundreds of meters in depth. It implies the fragility of the human being and his exposure to the limit of life: death. This limit also shows a life stripped bare by its oppressors. The comparison and contrast between the naked worker under the Spanish yoke and the loincloth indigenous man herding outside can also be read as an early version of the noble savage. The noble savage is the man outside the mine, a person in a state of nature who lives a placid life in freedom, in contrast to the cruel subjection of the workers within the depths of the mine.

With the exception of a few who are facing forward and thus covered to avoid exposing their genitals, the workers are naked; exposing their skin and carrying tools for labor. They hammer the rock, collect the mineral, and carry it up the rope ladders that connect the interior with the mouth of the mine, a representation of the thin line between life and death. The artist resolves the darkness inside the mine by accentuating with light those places that the candles can illuminate, simultaneously highlighting the difference between the man who shepherds the llamas and those

who work inside the mine, that is, man in a state of nature and man in a state of semi-slavery.

The workers inside the mountain, who wield their hammers and produce silver for the world's markets, also transform the landscape: like sculptors that chisel it away. Even more important than what the image "shows", however, is what it conceals. We do not see, for example, the llamas that carry the mineral extracted from the mountain to the mills and that, in time, are sent to the slaughterhouse to produce meat for consumption, wax for candles, and leather and ropes used in the mine. Nor do we perceive the magnitude of the labor energy utilized through the *mita*, a sophisticated system of pre-Hispanic origin, reinvented to permit continuous work in shifts throughout the week, both inside the mountain's tunnels and outside in the numerous ore-crushing mills where massive waterwheels ground the mineral. It also obscures the long process of obtaining the "flour" and mixing it with water, salt, lime, and above all, mercury, which required the "*repaso*" or work with the feet of laborers stirring the dough for several days. The long and varied stages of washing the mixture and removing the mercury to finally obtain a silver bar are equally invisible. This "industrious" labor is to a large extent, silenced.

Equally invisible are the bodies of the women and children who climb the mountain carrying food to feed thousands of men, and those who sell minerals on a small scale, as well as locally consumed goods such as coca and fuel. Despite these dark and unspoken aspects, De Bry's image succeeds in depicting production and exploitation under the Spanish Empire, even as it consolidates a vision that considers Indigenous workers as passive objects, in contrast to the mining proletariat of the twentieth century. The Potosí engraving, in any case, portrays the stark moments of the origins of global capitalist exploitation, which has meant a depletion of resources, poisoning bodies, and environmental degradation that not only belongs to the past, but continues to trouble the present, 500 years later.

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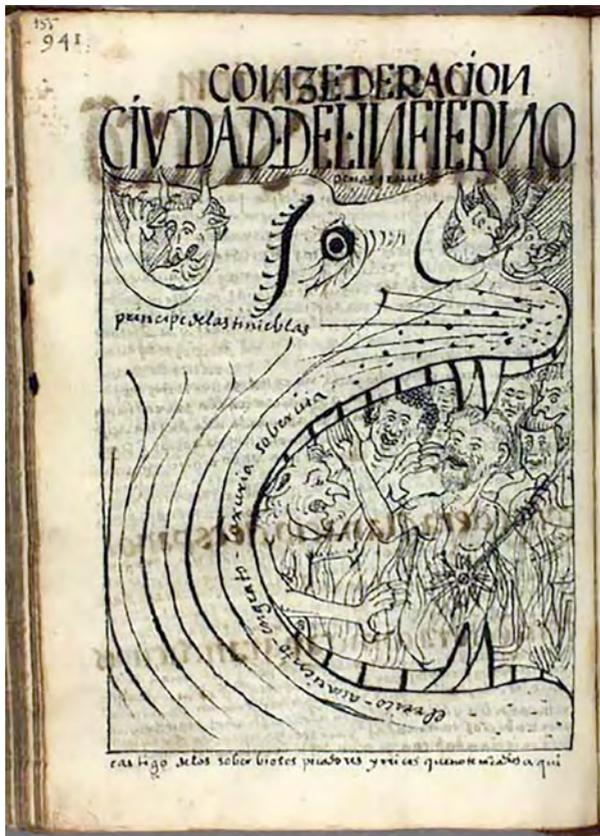
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- Insulen, Königreichen und Provintzien, Seecusten, fliessenden und stehenden Wassern, Port und Anländungen, Gebürgen, Thälern, Städt, Flecken Wohnplätzen, zusampt der Natur und Eygenschaft dess Erderichs, der Luft, der Minerer und Metallen, der Brennenden Vulcanen oder Schwefelbergen, der Siedenden und anderer Heilsamen Quellen, wie auch der Thier, Vögel, Fisch und Gewürm in denselben, sampt andern Wunderbaren Creaturen und Miraculn der Natur, in diesem halben Theil dess Erdkreyses. Dessgleichen gründlicher Bericht von der Inwohner Beschaffenheit, Sitten, Qualitäten, Policy und Götzendienst, Leben und Wesen, Barbarischer Unwissenheit und unerhörter Grausamkeit dess meisten theils dieser Wilden Leuthe, sampt Unterscheid der Nationen, Sprachen und Gebräuchen. Item, historische und aussführliche Relation 38. Fürnembster Schiffarten unterschiedlicher Völcker in West-Indien, von der ersten Entdeckung durch Christophorum Columbum, in 150. Jahren, vollbracht.* Frankfurt am Main: Bey denen Merianischen Erben.
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The City of Hell

Miriam Lay Brander



Guaman Poma de Ayala, "The City of Hell, Where Fearless Sinners Are Punished," in *Nueva coronica y buen gobierno* (1615). Source: The Royal Library, Copenhagen.

Felipe Guaman Poma de Ayala, the author of this image, was born around the year 1535 in the region of Huamanga (today Ayacucho) in the viceroyalty of Peru. Of

Inca descent, he identified himself as a member of the local elite and, at the same time, as administrator of the colonial government (Adorno 1993: 55). The image is one of 398 ink drawings contained in *Nueva corónica y buen gobierno* (1615), a 1,188-page letter of protest against Spanish bureaucracy and clergy addressed by Guaman Poma to Philip III, King of Spain and Portugal. The text and images include precise information about Andean geography and environment, as well as human interactions with nature in the cycle of the agricultural and ritual year (Cushman 2015). The author knew such details as a result of his pilgrimage through the central Andes, but they also had a personal meaning for him: Guaman Poma was involved in disputes between several clans over forests, pastures, water, and agricultural land, which may have been another reason for addressing the king with his *Nueva corónica* (Adorno 1993).

The “City of Hell” image (Guaman Poma 1615: 941) represents the gigantic head of a jaguar in whose mouth we can see, in the foreground, a bearded Spaniard and a devil and, behind these, an Indian and a Black man. The inscription tells us that these people are subject to “severe sanctions” for “the greedy thankless rich” and for “lust, arrogance.” At the bottom of the photo, it is specified: “Punishment of proud sinners and rich people who do not fear God.” In the jaguar’s mouth, a demon lights a flame that is shaped like a star. In the corner of the mouth – wide open to devour sinners – folds have formed, which resemble waves that flood the space of hell, burying the damned as soon as the beast closes its mouth.

The Jaguar and the Water

The jaguar (in Quechua: *otorongo*) is one of the deities worshiped by the Indigenous people of Antisuyu, one of the four divisions of the Inca Empire, as Guaman Poma lets us know in another drawing entitled “Idols and *waqas* of the Andesuyos” (Guaman Poma 1615: 268). In its corresponding text on the next page, the author explains that, according to the Indigenous people, the Inka himself had been transformed into an *otorongo* and that they worshiped him by offering him a sacrifice of “burnt tallow from snake and corn and coca and feather of birds from the Andes” (Guaman Poma 1615: 269). Although in this context Guaman Poma describes these practices as idolatry, in “City of Hell” it is precisely the jaguar that executes the punishment of “the arrogant sinners and the rich” (Guaman Poma 1615: 941). However, this drawing is not about *otorongo*, but rather, as Cushman (2015: 100) points out, about the *chuqui chinchay* who guarded the entrance to the ancestral country: “many spotted animal, of every color, that they say was *apu* [god] of the jaguars, in whose care hermaphrodites, Indians of two natures, are given” (Pachacuti Yamqui 1993: 21vo - 22ro). The star, identical to the evocation of stars elsewhere in the text, probably represents the star Antares, which is part of a constellation of dark clouds in the Milky

Way, known in the Andes precisely as *chuqui chinchay* (Cushman 2015: 100). Another imprint points to Illapa, the god of thunder and lightning, who, according to the Jesuit historian Bernabé Cobo, was also the water donor. He was depicted with a baton in his right hand, and it was believed that he gave off the spark of lightning (Bolin 1998: 46).

Among the drawings that Guaman Poma includes in his *Nueva crónica*, there are only a few in which water plays a significant role. In the “World Map of the Kingdom of the Indies” (Guaman Poma 1916: 914–915), with Cuzco as its center, the rivers, their tributaries, and mouths are obvious. This *mapa mundi* has the same reference points as an earlier map that Guaman Poma used in a 1590 lawsuit in which he defended his ancestral rights to a territory of one hundred square kilometers south of the city of Huamanga (Cushman 2015: 92–96). This territory was the source of the rivers that made up the Chupas valley, the original name of the Huamanga valley invaded by the Spaniards (Macera 1991: 45–46; see also Adorno 1993: 61). The map shows the geographical dependence of the city of Huamanga on the Chupas Valley, and suggests that the control of the hydraulic system in that valley was the source of economic power and also of the political authority of the Guaman Poma family and their ancestors (*ibid.*). Water was therefore associated with power, both from the perspective of the colonial realm and with respect to the author’s personal interests.

The close relationship between power and control of water is also suggested by two other drawings depicting a Spanish galleon on the high seas, with discoverers, explorers, and conquistadores on board (Guaman Poma 1615: 46, 373). These allegorical compositions depict the expeditions that gave rise to the “conquest” of America by Europe (Adorno 1991: 163) and, therefore, what Crosby (1972) has called the “Columbian Exchange”: the exchange of flora and fauna products between Europe and America that led to ecological changes on both sides of the Atlantic.

It is striking that, in the drawings of the conquistadors’ fleet, the ship constitutes a dividing line between the sea and Spanish passengers, so that the water is separated from the rest of the image. The passengers are in a position above the sea, which suggests that they have overcome the water by traveling with their fleet the “hundred leagues” (Guaman Poma 1615: 46) that separated Europe from the American coasts. These coasts and their inhabitants appear in the first drawing – where they almost merge with the waves of the sea – thus inserting themselves into the water world. In addition, the organization of pictorial space indicates a pattern of hierarchies drawn along a diagonal line that places Spaniards in the upper right part of the pictorial field, and which can be seen in a whole series of drawings in the *Nueva crónica* (Adorno 1991: 134–142). The conquerors of Peru, Almagro, and Pizarro occupy the center of the pictorial space, which gives them additional symbolic authority. In the drawing “City of Hell”, this organization of the pictorial field is in disarray: the characters and objects are no longer organized along a diagonal or around a center, implying that the colonial order is crumbling. The water is no longer separated

from the characters, but surrounds them to flood the space of hell. Water, previously tamed by the conquistadors, now joins the animal world to take revenge on 'the ungrateful, greedy rich' (Guaman Poma 1615: 941) and thus to re-establish the inverted order.

The Disturbed Cosmic Balance

The drawing "City of Hell" allows us to recognize an analogy with drawing 118, "Punishment and Justice: *Sankay*, Perpetual Prison; Inquisition" (Guaman Poma 1615: 302). It shows the punishment of a traitor as practiced by the colonial government in the Viceroyalty of Peru, by confining the offender in a hole deep in the earth. In the drawing, the convict is surrounded by several animals and vermin, including a jaguar, who come to him to eat him alive. The Quechua term *sancai*, which means perpetual imprisonment, relates here to the Christian concept of hell as an eternal punishment for the proud. As Berríos-Campos has pointed out, the physical punishment of *sancai* in the Andean world was part of the punishments necessary to reaffirm the "principle of reciprocity as a stabilizer of a world in change or crisis" (Berríos-Campos 2020: 207). The disturbance of this balance is articulated in the baroque literary trope "the world upside down," used by Guaman Poma on several occasions to complain that the original Andean hierarchy has been inverted by the presence of Spaniards (Adorno 1991: 142, 159).

In the restoration of justice – one of the pillars of the Andean world – nature plays an active role, which can be seen in the drawings "Punishment and Justice" and "City of Hell". In both depictions of punishments, animals participate in the execution. While it is true that, in the first case, the animals are at the service of the Inka as the main authority figure, helped by the main lords and the royal council, in the second case, it is God himself who sends the jaguar to execute his sentence. However, neither secular nor divine authority appear in the drawings, giving the impression that it is the animals who take revenge for the injustices committed, thus restoring the lost balance.

The first sin mentioned by Guaman Poma in "City of Hell," and which provokes the deity's punishment, is greed. The author leaves no doubt that this vice gave rise to the conquests and cruelties committed by the Spaniards:

And they did not want to rest any day in the ports. Every day nothing was done, but everything was thinking about gold and silver and the riches of the Piru Indians. They are like a desperate, foolish, crazy man, mind lost in greed for gold and silver. Sometimes they did not eat because they only thought of gold and silver. (1615: 374)

This lack of appetite due to so much thirst for gold is also addressed by Guaman Poma in another drawing, which represents Pedro de Candía invited to eat by the Inka Huayna Cápac. To the Inka's question about what Spanish people eat, the latter replies: "This gold we eat" (Guaman Poma 1615: 369). The episode, which never took place, is the allegory of an all-consuming greed regardless of the costs of such an attitude. These are, first of all, the exploitation of Indigenous people. As the chronicles show, colonized and colonizers agreed that the decline of the Indigenous population was one of the most serious problems in the viceroyalty of Peru, because it meant the destruction of the most important source of all wealth: labor. In addition, the demographic decline affected the landscape, producing the so-called *despoblados*: wild lands formerly inhabited by prosperous populations (Cushman 2015: 89).

Isotopes of Swallowing: From the Colonial Period to the Anthropocene

The terror inspired by *chuqui chinchay* and other animals, as in the *Sancai* drawing, as well as the justice Guaman Poma attributes to the punishment of being eaten by them, were deeply rooted in the Andean belief that nature itself had the ultimate power to avenge acts of violence committed by humans against the cosmic order (Cushman 2015: 97). This force of nature to condemn those who harm it is also manifested in the essay *Des Cannibales* (1580), in which the French philosopher Michel de Montaigne defends the Tupinambá Indigenous people of Brazil against the accusation of eating human flesh. According to Montaigne, these practices are harmless compared to the barbaric acts committed by the French in religious wars. According to an ecocritical reading of *Des Cannibales*, the greed of colonizers in America endangers ecological balance. Montaigne's essay contains digressions about natural disasters in Europe: the myth of the island Atlantis buried under the sea with its inhabitants and the erosion of the banks of the Dordogne River. As Goul (2017) points out, with these digressions, Montaigne places the conquest of America in a universal context and draws attention to the fact that humanity is situated within an unstable ecosystem. Moreover, he presents being devoured by water as a just condemnation for inexhaustible greed. Nature itself takes revenge on those who "have eyes bigger than their bellies" (Montaigne 1981: 251) and those who "eat" gold (Guaman Poma 1615: 369) and thus disturb the cosmic balance.

Excessive consumption and greed are central elements in today's ecological debates. For example, Crutzen and Schwägerl (2011) warn:

First, we must learn to grow in different ways than with our current hyper-consumption. What we now call economic "growth" amounts too often to a Great Recession for the web of life we depend on. Gandhi pointed out that "the Earth provides enough to satisfy every man's needs, but not every man's greed."

In this sense, Guaman Poma, like Montaigne, anticipates a central idea of the debates about the Anthropocene: if humanity does not moderate its greed, it risks being devoured by nature as a result of an ecosystem destabilized by its hyperconsumption. Although Guaman Poma does not establish an explicit link between the colonizers' gold rush and the (possible) natural disasters that could be caused by the unrestrained exploitation of the resources of his region, his way of linking greed with cosmogony and the Andean animal world give a glimpse of the background of an ecological conscience. The representations of elements of nature in the *Nueva corónica* are based on the conviction that humanity lives in a strong interdependence with its natural environment, and that this plays an important role – although not empirically specified – when the principle of reciprocity both within the human realm and between humanity and nature is disturbed.

Translated by Eric Rummelhoff and revised by Luisa Raquel Ellermeier.

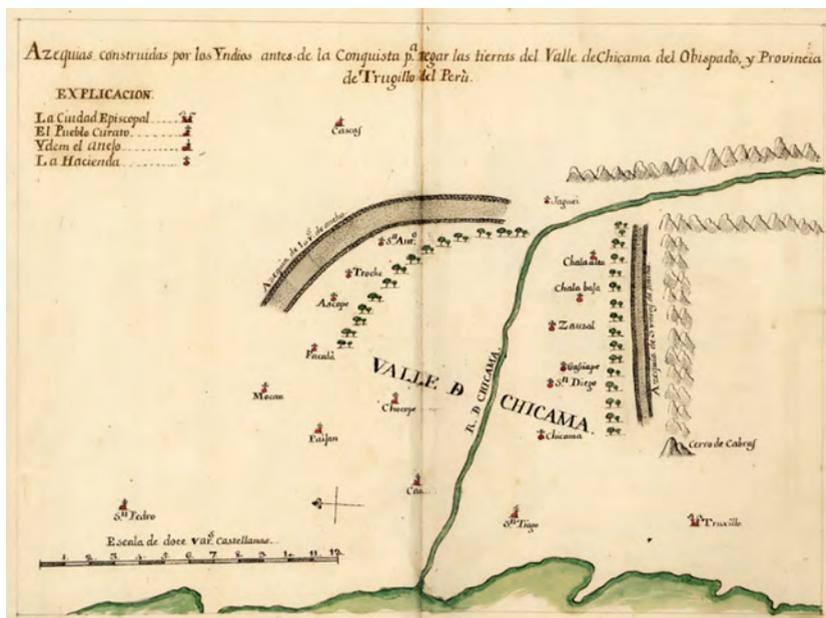
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Acequias Built by the Indians

Karoline Noack



Baltasar Martínez Compañón, "Azequias construidas por los Yndios antes de la Conquista para regar las tierras del Valle de Chicama del Obispado y Provincia de Trujillo del Perú," in *Códice Trujillo del Perú* (1782–1785).

This map is one of 1,400 watercolors and twenty musical scores included in Baltasar Martínez Compañón's *Trujillo del Perú* codex, comprising nine volumes. This work was created as part of the ecclesiastical visit made by the bishop Martínez Compañón to his jurisdiction at the end of the eighteenth century, accompanied by a group of companions and collaborators, including his secretary, a missionary, a chaplain, a notary, his nephew José Ignacio Lecuanda – an educated economist –, and six slaves (Sanfuentes 2019: 279). For three years, the bishop and his assistants traveled through the bishopric of Trujillo, a large and heterogeneous territory en-

compassing seven present-day departments in the northern part of Peru – coast, mountains, and jungle. This visit was the impetus for what was perhaps the most extraordinarily detailed study of an American region at that time (Pillsbury and Traver 2008: 193).

The *Azequias* map, featuring the Chicama River (about 600 km north of Lima) that comes from the Andes and flows into the Pacific, provides a close-up of a section of a larger map entitled *Carta topografica de la provincia de Trujillo del Perú* (Topographic Map of the Trujillo Province of Peru) (Martínez Compañón 1775–1800). The province of Trujillo encompassed the Chicama Valley as well as the valleys of Chimo (Moche), Virú, and Guamanzaña (Chao). Drawn and colored by hand by specialists under the guidance of the bishop (Zabía de la Mata 2019: 142), the *Azequias* map harbors an anachronism in both its title and execution, insofar as it suggests that the canals were built *before* the Conquest to irrigate the lands of the Chicama Valley in the bishopric, where colonial haciendas abounded. The mouth of the river at the map's center creates a certain symmetry, highlighting the importance of the rivers that line the valleys of the coastal desert and make agriculture possible. Due to the slight shift of the illustration to the right, the acequias appear as sections rather than as a complete irrigation system. These are the Ascope canals north of the river, which also includes the aqueduct of the same name, and the intervalley channel called Vichansao that connects the Chicama and the Chimo Valleys to the south with a length of approximately 74 km.

In pre-Hispanic times, Vichansao was the axis of a complex network of smaller channels (Castañeda and Gálvez 2002: 54). The canal supplied water to the southern part of the Chicama Valley and the northern part of the Moche Valley for cultivated fields (Gálvez 2024: 78). The Ascope acequia and the intervalley canal are the only large, long-distance channels in the Chicama Valley. Instead of mentioning the names of the acequias, the map offers technical details such as their width: ten *varas* (roughly eight to nine meters) in the case of Ascope and three in the case of Vichansao. The stone edges of the channels are visible, although, as the Ascope channel formed part of an aqueduct, both its edges and bed were made of clay soil. The channels' base was composed of sandy soil, waterproofed by the silt accumulated as a result of the flow of water rich in sediments from summer floods. On the banks of large canals, as in this case, trees such as willow (*Salix chilensis*), hawthorn (*Acacia macracantha*), and other vegetation contribute to the stability of the channel's borders (César Gálvez, personal communication). The haciendas, each with its church, are lined up like a pearl necklace along the acequias, beginning in the northwestern part with Mocán, in the southeastern part with Chicama, and up the foothills of the coastal Andes with Jaguei. The parishes are in the western part of the valley. One of these, Cao (today Magdalena de Cao), is now known for its proximity to El Brujo, a pre-Hispanic site with a long history that flourished especially during the Moche era (ca. 100 to 800 BC).

Trujillo, the episcopal seat, is shown out of scale at the southwestern end of the map. Without highlighting any other detail besides the coastal chain of the Andes, from which Cerro de Cabras stands out, the map creates an impression of perfect spatial order, corresponding to an organized distribution of the population in haciendas, villages, and cities under the control of the church. Such an order, however, is contrary to the situation of generalized crisis in the Peruvian viceroyalty at the time of the bishop's visit. The reference in the title to the function of pre-Hispanic irrigation acequias "to irrigate the lands of the Chicama Valley of the Bishopric" may imply the potential of indigenous pre-Hispanic technology as a model to counteract effects of the Anthropocene felt since the beginning of the seventeenth century, at a time of environmental and economic crisis that manifested in the Chicama Valley in the form of destroyed crops, infertile land, and a drastic decline in agricultural production. The bishop's language suggests that he observed this connection.

Since the European discovery of its silver mines in 1545, Potosí was the engine of the globalized colonial economy, contributing to trade centered in Lima with the port of Callao and agriculture in the coastal valleys. High demand on the part of Lima's population, especially for wheat (staple of the Spanish diet), boosted production in Trujillo, especially the Chicama Valley during the seventeenth century, the granary of the north coast (Assadourian 1983: 169). During this period, "major grain trade and the city grew in perfect balance with the advantage of the low cost of sea freight" (170) that reached as far as Panama. But with the decline of mining in the late seventeenth century, commercial grain production also declined. Climate change caused by the end of the Little Ice Age and the beginning of global warming, earthquakes (1687, 1725, 1759), and floods caused by the El Niño phenomenon (1701, 1720), followed by droughts and pandemics from the end of the seventeenth to the end of the eighteenth centuries, all brought about drastic changes in the agricultural landscape (Carcelén Reluz, Molina Gutiérrez, and Medina 2020: 23; Assadourian 1983: 172).

The earthquake of 1687 alone destroyed Lima and Trujillo, leaving all the land along the Peruvian coast barren, as the scholar Miguel de Feyjóo observed (Vásquez Requelme 2019: 56). The subsequent replacement of one monoculture (wheat) for another (sugar cane) occurred during the eighteenth century in the context of continuous fluctuations in climatic conditions and changes in water infrastructures. The predominance of sugar cane entailed the destruction of the previous landscape and its prevailing form of labor organization. In effect, sugar monoculture meant a disorganized and violent expansion of plantations in the face of a saturated market and without the possibility of opening new export routes (Assadourian 1983: 176).

Against the background of the situation described here, the visit of bishop Baltasar Martínez Compañón can be understood as one of the important projects of the new Bourbon government of the eighteenth century – the era of the Enlightenment – , whose purpose was to gather knowledge about the Crown's Spanish-American

domains so as to further the modernization and rationalization of these territories in crisis in ecclesiastical and economic terms with a reasonable use of resources (Sanfuentes 2019: 277; Ramírez 2022: 97). Martínez Compañón's work constitutes an impressive utopia that imagines a complete overhaul of colonial Peru (Huertas Vallejo 1993: 371; Soule 2014). Part of its program is archaeological, reflected in approximately 100 highly detailed images of pre-Hispanic monuments, objects, and technologies, a register unheard of at that time (Pillsbury and Trever 2008: 192). The *Azequias* map accompanies other maps and archaeological drawings of the "palaces" of Chan Chan, the capital of Chimor, the last independent pre-Hispanic state (ca. 1000 to 1470 BC) before the Inca conquest; Marca Huamachuco in the mountains; the Huaca del Sol in the Moche Valley; the famous Ransom Room of the Inca Atahualpa in Cajamarca, and others. The map in question represents the largest pre-Hispanic irrigation channels in the Chicama Valley, north of Chan Chan, as well as the city of Trujillo, one of the first Spanish settlements.

Peru is located in an area that is frequently affected by earthquakes, even before the Anthropocene. Pre-Hispanic societies on the north coast, such as Moche and Chimor, adapted to abrupt oceanic and atmospheric changes that greatly impacted the natural and social environments (Huertas Vallejo 1993: 346). Given that the combination of environmental crises caused by the Anthropocene and the impact of early capitalist production was not yet a factor, adaptation to natural disasters led to a high point in pre-Hispanic coastal societies. Starting in 100 AD, dry periods alternated with floods along the northern part of the coast, destroying entire settlements and canal systems (Mann 2016: 604). The Moches, according to Castañeda and Gálvez (2002), "not only summarized previous achievements with regard to the construction of canals and provision of land for cultivation, but also expanded the agricultural frontier of previous cultures" (41), developing different strategies to adapt to changing environmental conditions. It is possible that a large part of the canals and cultivated areas built during the Moche period were preserved during the that of the Incas (58). Thanks to an extensive artificial irrigation system, adaptability reached its peak in agricultural expansion during the heyday of Chimor as a centralized state. Landscapes were transformed into artificial environments composed of terraces, canals, and paths, suitable for land cultivation (Mann 2016: 498). Before the Inca conquest, the Chimor domain encompassed two thirds of the population living in the Pacific coastal desert and two thirds of the land irrigated in this desert (Moseley 1990: 1). In the Moche Valley, for example, more than 20,000 hectares were irrigated for the cultivation of corn and cotton during the Chimor era, something that Peru would not achieve again until 1960 (Mann 2016: 367).

After the Spanish conquest, the decimation of the Indigenous population in the sixteenth century due to wars, disease, exploitation, and flight paved the way for Spanish colonizers to appropriate the fertile lands of the Chicama Valley. This first affected the lands that had been assigned to the Incas and their deity, the sun, but

later also extended to lands cultivated by the community. The key to productivity in the coastal desert had been the link between the complex hydraulic system and communal ownership of land under the control of various levels of political power. The weakening of communal land ownership in the colonial era meant the increased vulnerability of the hydraulic system, whose maintenance was not assured under Spanish notions of private property. This problem would reach a critical point in the following centuries. The abandonment of irrigation channels led to a return to the desert and thus a shortage of water to irrigate the fields. As explained above, at the beginning of the eighteenth century, agriculture in the Chicama Valley had become a monopoly of sugar cane producers. These had almost unrivaled access to water, since after 1700, wheat – the previous monopoly – was no longer cultivated in the valley. The accumulation of land was accompanied by the accumulation of water rights, while the scarcity of labor was increasingly resolved with the deployment of enslaved workers. However, the often-conflicting private interests of sugar farmers caused a further deterioration of the irrigation system (Rischar 1984: 244).

Unlike their native predecessors, the Spanish did not know how to operate large hydraulic systems. One of the reasons why the floods of 1720 and 1728 had such a serious impact was undoubtedly the decades of poor cleaning of the canals that had reduced their capacity to such an extent that, in the case of excessive flooding of the Chicama River, water distribution could no longer be controlled, which aggravated the flood's consequences (246). Because the communities' forms of organization had been destroyed, they increasingly adapted the behavior of the Spaniards in a situation of persistent water scarcity and came to act as competitors for water. Natural disasters after 1700 were so catastrophic that they interrupted the development of Spanish agriculture, which long remained dormant (251–252).

The inclusion of the illustration of the irrigation system of the Chicama Valley in the bishop's compendium can be seen against two backgrounds: the interest in the monumental nature of "antiquities," on the one hand, and on the other, as representation of basic technological knowledge for the functioning of societies in a coastal desert environment affected by floods, droughts, and earthquakes – knowledge that had by then been lost. We know that "the bishop invited a group of Indigenous people to be his collaborators for a decade" (Soule 2014, cited in Sanfuentes 2019: 280). Thus, for the bishop, Indigenous knowledge was understood "as an indispensable factor in the acquisition of knowledge about America" (281). In fact, the bishop "ordered the construction of three irrigation canals (almost 16 leagues long)" (Ramírez 2022: 105). Considering this experience, we may view the *Azequías* map as an instruction manual for a new beginning after times of crisis, one that draws on the knowledge of the inhabitants of these lands passed down from pre-Hispanic times.

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Humboldt and Bonpland at the Foot of the Chimborazo Volcano

Juan Arturo Camacho Becerra



Friedrich Georg Weitsch, *Alexander von Humboldt und Aimé Bonpland am Fuß des Vulkans Chimborazo* (1810). Oil on canvas, 163 x 226 cm. Photo by Jörg P. Anders. Source: Picturing the Americas (<https://picturingtheamericas.org/painting/alexander-von-humboldt-and-aime-bonpland-near-the-chimborazo-volcano/>).

In 1799, when Alexander von Humboldt and Aimé Bonpland began their first voyage through South America, the continent's Spanish colonies were immersed in an economic and structural crisis due to the exhaustion of the extractive system and the discontent of the general population, including the Creole oligarchies who considered the taxes demanded by the crown to be excessive. (Moreno 2002; Cornejo and Ruales 2020)

In this painting, which features the Chimborazo volcano in the background, a blue sky frames the imposing snow-capped mountain; the presence of two European explorers, one of them a specialist in mining and geology, exemplifies the colonies' interest in obtaining scientific data in order to continue the exploitation of natural resources by the Spanish crown.

In the foreground of the painting are two human groups. On the viewer's right, Aimé Bonpland (1773–1858) sits under an improvised tent, holding a book in which he is making notes. On the ground beside him are a press for plant collection and a dead condor. Standing nearby, Alexander von Humboldt (1769–1859) receives a barometer handed to him by one of his Indigenous guides. The other group is also made up of Indigenous inhabitants, one of whom unloads a donkey while others light a fire. These figures wear distinctive garments made of cotton with wool ponchos; one wears a sheepskin as an overcoat. Humboldt and Bonpland, in contrast, are dressed European style, Humboldt in trousers and a short jacket and Bonpland in a longer jacket, trousers and leather boots. Further away on the plain is another group of four human figures and a pack animal and, almost ethereal, the figures of two vicuñas.

The creator of this painting, Friedrich George Weitsch (1758–1828), called it “an imaginary scene.” In it, the Europeans named in its title are the protagonists, contrasting with the presence of the faceless Indigenous inhabitants who are only identifiable by their clothing. Weitsch was born in Lower Saxony in 1758, and between 1784 and 1787, he lived abroad, first in Amsterdam, then in Rome and Florence. Upon returning home, he received an invitation from Charles William Ferdinand, Duke of Brunswick, to work as his court painter. In this capacity, he created numerous portraits of the duke and his family. These often showed the influence of Anton Graff, a highly renowned Swiss portrait painter of the time (Zimmermann 1896: 660).

This painting dates from 1810, the year in which Humboldt returned from his voyage to “equinoctial America” and settled in Paris, where he published *Vue des Cordillères et monuments des peuples indigènes de l'Amérique* (View of the Cordilleras and Monuments of the Indigenous Peoples of America), Weitsch's probable source of inspiration. The painting displays the formal style of German Romanticism; thus, as in the paintings of Weitsch's contemporary Caspar David Friedrich, the human presence is marginal compared to the magnificence of nature, in this case the snowy volcano.

As an explorer, geographer, and naturalist, on Humboldt had a deep affection for the visual arts. He encouraged artists to experience nature through his expeditions and writings, promoted landscape painting as means of showing the diversity of the natural environment, and argued that, with the aid of scientific research, artists could paint the diverse topographical features of a landscape. He believed that scientific drawing “should speak to the senses without tiring the mind.” Between 1799 and 1804, with the permission of the King of Spain, Humboldt and his team of nat-

uralists followed Indigenous guides on a journey through what is now Venezuela, Colombia, Peru, Ecuador, Cuba and Mexico.

Aimé Bonpland, for his part, was a French naturalist, surgeon and botanist, who along with Humboldt received recommendation to join a scientific mission organized by the Spanish government to South America and Africa that did not materialize. Instead, he traveled with Humboldt to Spain, walking along the Mediterranean coast from Marseille to the Spanish cities of Barcelona, Valencia and Alicante. Upon arriving in Madrid, thanks to altitude measurements taken along the way, they produced the first precise relief diagram of the Iberian Peninsula. With this experience, he joined forces with Humboldt for the trip to America.

Humboldt's ascent of the Chimborazo volcano was highly publicized. Berlin newspapers published letters describing his journeys. Weitsch captured this scene of Humboldt and his companion Bonpland at the base of Chimborazo, in a detailed natural landscape, and in so doing, demonstrated the impact Humboldt had on painters such as Weitsch himself. Indeed, the German scientist and explorer inspired a generation of painters to create landscapes as scientific documents. An example of this was Johann Moritz Rugendas (1802–1858), one of the first painters to seek out an America that was unknown and mysterious to his European contemporaries. Rugendas spent significant periods of time in Brazil, Haiti, Mexico, Chile and Peru and also visited Bolivia, Argentina and Uruguay. Ferdinand Bellermann and Frederick Edwin Church were also among the artists inspired by Humboldt's writings and his passages through the American continent.

The Epiphany of Chimborazo: A Wish Fulfilled

On June 22, 1802, Humboldt and Bonpland began their excursion to Chimborazo, a volcano just below the equator and then thought to be the highest mountain in the world (in fact, at 20,564 feet, it is more than 8,000 feet lower than Mount Everest). They arrived at the foot of the volcano at a village called Calpi and, according to Humboldt's account, spent the night restless from the excitement of the ascent. The next morning, they hired Indigenous guides to help them carry the instruments. It had snowed during the night and the weather was adverse. Upon reaching an altitude of 4,700 meters (15,420 feet), the guides refused to continue the ascent, so the two scientists divided the instruments among themselves and continued with their measurements: "The path became increasingly narrower and steeper. All the Indians, except one, deserted us at an altitude of 15,600 feet. Our pleas and threats were in vain. The natives claimed to suffer more from lack of air than we do" (Humboldt [vol. 1] 2021: 344). Despite physical suffering such as bleeding and wounds on his feet, Humboldt was able to contemplate the slopes of Chimborazo and describe its landscape. Referring to the Tapia plain, for instance, he writes, "it is sparsely cov-

ered with varieties of cactus and *Schinus molle*, very similar to the weeping willow; the herds of llamas of different colors come here, by the thousands, to search for their scarce food” (Humboldt [vol. 1] 2021: 337). In general, the landscape described by Humboldt coincides with the one painted by Friedrich Georg Weitsch.

As an explorer and mountaineer, climbing Chimborazo had become an obsession for Humboldt. He attempted it twice without success; the second expedition reached 5,917 meters, higher than had been achieved before. Even without reaching the summit, it represented the accomplishment of a goal. From that point on, “everything that he had ever observed fell into place. Nature, Humboldt realized, was a web of life and a global force” (Wulf 2015: 87).

Humboldt’s narrative takes the form of a “view” or painting that combines science with an aesthetic vision; this sublime vision of nature, he believed, would reveal the internal forces that made it operate. As a result, his works “introduced into German literature an absolutely new type of discourse on nature” (Van Dusen 1971: 45).

In *The Invention of Nature: Alexander von Humboldt’s New World* (2015), historian Andrea Wulf argues that, upon climbing Chimborazo, Humboldt began to see the world differently. He conceived the Earth as a large living organism, in which everything was related. After the expedition, Humboldt began to sketch his *Naturgemälde*, “an untranslatable German term that can mean ‘a painting of nature’, but which also implies a sense of unity or wholeness,” and as such, “a microcosm on a page” (Wulf 2015: 88).

With his innovative travel literature that combined expressions of wonder with scientific data and as a new way of seeing nature, Humboldt reinvented America for Europeans. Idealized visions of the Americas had circulated in Europe with the voyages of conquest that had taken place during the sixteenth and seventeenth centuries; but Humboldt provided the scientific information to support the idea of a “wild and gigantic nature.” Along with those of other authors of his time, his works “proposed to Europeans a new type of planetary consciousness” (Pratt 2010: 228).

Prophet of the Anthropocene

The scene imagined by Friedrich George Weitsch shows Humboldt and Bonpland in a state of tranquility, enjoying their activity of recording nature, far from the hardships and illnesses that the scientists in fact endured. The Capac Indigenous guides, who carried the Europeans’ equipment, were from the parishes of San Juan or Calpi, known for their work with textile garments made from sheep’s wool, examples of which are visible in the painting. Also depicted are local fauna, such as vicuñas and small rabbits. In terms of geography, an outstanding feature is the *páramo* or high plateau, the ecological formation found on the slopes of Chimborazo, from its humid eastern flanks to the sands of its western desert, variations determined by the influ-

ence of trade winds coming from the Amazon. As far as the landscape, flora, and fauna, the scene differs little from Humboldt's own representation, "The Chimborazo Seen from the Plateau of Tapia" (in his *View of the Cordilleras and Monuments of the Indigenous Peoples of America*). The naturalist, however, did not include himself, Bonpland, or any Indigenous people in the image.

During his trip through Venezuela and after seeing the negative effects of colonial plantations on Lake Valencia, Humboldt became the first scientist to speak of the harmful climate change caused by humans:

There are some very powerful reasons for the successive decline of Lake Valencia. On the one hand, in the changes which the destruction of forests, the clearing of the plains, and the cultivation of indigo have produced in the mass of the tributaries for half a century, and on the other, in the evaporation of the soil and the dryness of the atmosphere. [...] By felling the trees that cover the tops and sides of the mountains, men, in all climates, prepare for future generations two calamities at the same time: lack of fuel and scarcity of water. (Humboldt 1941, 3, 105)

Today, this prediction has proved to be correct. Humboldt saw colonialism as something disastrous for people and also for the environment; he understood that nature, politics and society form a network of connections in which each one influences the other and contributes to an inappropriate use of natural resources, as he pointed out mainly in *Travels on the Orinoco*.

Humboldt's writings are an account of the natural elements that he encountered, and also a historical and ethnographic record. In his discussion of the ascent of Chimborazo, in addition to ecological data concerning the different plant layers that he found on the way up, he also notes that Lican – then a small village – had been the regional capital during the period of Inca domination, a history that he complements with a legend about the predictions of the natives alluding to balls of fire from the volcano (Humboldt 2021: 338). Without naming it as such, his chronicle documents the Anthropocene in early nineteenth-century America. His romantic spirit contributed to the imagining of a region whose inexhaustible and exuberant nature aroused the wonder of the Europeans of his time and drew attention to the importance of proper stewardship of the natural environment.

More than 220 years ago, Humboldt and Bonpland arrived at the site where the new Riobamba was being built, after the old city had been destroyed by the earthquake of 1797 that left 45,000 dead (Humboldt [Vol. 1] 2021: 367). The Audiencia of Quito was a prosperous region, in which Humboldt estimated a population of 550,000 inhabitants (Humboldt 1941: 5, 103). Today, Riobamba is considered in Ecuador to be "Heart of the Nation" or "Sultana of the Andes"; it has five urban parishes and eleven rural parishes, with an estimated population of 225,000 inhabitants in the entire canton in 2020. Of the rural parishes mentioned by Humboldt,

San Juan has grown the most, with around eight thousand inhabitants; at more than 3,500 meters above sea level, it is the most direct route for trips to Chimborazo and the starting point for a variety of excursions. In 1986, a 58,000-hectare protected area was declared around the volcano for the preservation of wildlife, mainly vicuñas. What was once a difficult climb for Humboldt and Bonpland is now within reach of adventure tourists.

Weitsch's painting of Humboldt and Bonpland at Chimborazo says much about visual representation in the nineteenth century: in this case, a painter creates a scene from his imagination based on the scientist's writings, imparting to the work of art valuable information about the subject that is portrayed. Humboldt's research on this journey contributes to documenting the Anthropocene without naming it as such, in a narrative style that emphasizes the romantic exaltation of the scientist who overcomes adversities in the search for knowledge. The painting confirms the idea that Humboldt, in the ascent of the Chimborazo volcano, discovered and later disseminated the interconnection of climate, geography, nature, and human societies. His ideas were revolutionary for the nineteenth century and, for scientists studying the effects of climate change, remain relevant today.

Translated by Elissa Rashkin and revised by Luisa Ellermeier and Olaf Kaltmeier.

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Visual Representations in the Amazon in the Colonial Period

Cartographic Details of Colonial Amazon

Daniel Esteban Unigarro Caguasango



Diogo Homem, *Mapa de Sur América* (detail), in the Queen Mary Atlas (1558). Source: British Library Board.

The age of discovery at the turn of the fifteenth to the sixteenth century should be considered the prelude to the Anthropocene, as it marked the beginning of one of the greatest impacts of humans – European, white, civilized, and rational – on Earth, by transforming the map of the known world and promoting the conquest – that is, control and domination by force – of everything that existed in what was deliberately called the New World. This name allowed it to be conceived as an empty, uninhabited, and uncultivated space, as the ways of life and social organization of the original inhabitants were unknown. Of course, understanding this *Terrae Incognitae* – unknown land – was a challenge both for the explorers and conquerors who, in the name of European monarchs and despite the dangers and surprises, ventured into and settled there. It was also a challenge for cosmographers and cartographers,

who had to devise a new scheme and model of visual representation that included the *Quarta orbis pars* – the fourth part of the world – as the scene of colonialist power. However, the creation-invention of the New World also sparked the geographical imagination.

In the case of the Amazon, just hearing or reading the word brings to mind a great river, an extensive jungle, and the immensity of endemic fauna and flora in Latin America's largest natural area, which covers the northern part of the southern continent and is divided among nine countries since the twentieth century. This geographical imaginary is the product of almost five centuries of cartographic representations generated, at first, by navigators who saw a vast estuary on the coast and lush greenery in the distance, and later based on the reports of explorers who – some traveling up the rivers and others coming from the Andes – spread European conquest throughout the interior of the New World (Unigarro 2024b). One of the expeditions that set out from Quito in search of the mythical land of cinnamon, led by Spanish captain Francisco de Orellana, resulted in the fortuitous “discovery” of the river of the Amazons in 1542. Just two years later, the image-idea of a vast region of wilderness surrounding a winding snake was configured as the first complete, schematic, and figurative representation on the world map of the Venetian sailor, explorer, and cartographer Sebastian Cabot (Fernández-Armesto 2007: 757; Rabelo 2019; Unigarro 2024a).

This winding figure that crosses the center of South America with large and fanciful loops was consolidated in the visual imagination of the New World thanks to its recurrence as a depictive pattern in sixteenth-century nautical world maps, given the static permanence of the Amazon's geospatial information (Buisseret 2007: 1163; Bahill and Gitzen 2021). In this sense, the Renaissance cartographic synthesis process of that period bestowed to the region an identity that was assimilated, constructed, and invented as a geographical entity in visual production through the lens of European intermediaries (Rabelo 2020). An example of this can be seen in Diogo Homem's map of South America from 1558, which is part of the collection known as the *Queen Mary Atlas*, a gift to Philip II of Spain commissioned by his wife, English Queen Mary I of the House of Tudor, to the Portuguese cartographer, who worked at the time as her cosmographer.

True to the portolan cartographic tradition that had been in use in Europe since the thirteenth century, Diogo Homem's maps (like those of his father Lopo, also a cartographer) were coastal images with a wealth of figurative details and colorful decoration that, beyond reflecting late medieval art and aesthetics, incorporated valuable information and geographical imagination. Thus, on the map of South America, in addition to the visual elements required for navigation, such as compass roses and a route network, we find detailed knowledge of the eastern coastline, including many place names and hydronyms, in contrast to the western coastline, which was still unexplored and without references. We can also observe the inten-

tion to materialize the continental interior with landscapes of trees, mountains and ranges, various types of human settlements, and scenes of inhabitants, not to mention the flags and coats of arms as markers of various forms of territorial domination exercised by the European colonial empires.

Although all the elements depicted are interesting objects of symbolic analysis, the protagonist of the map is the blue body – a cartographic convention for water – produced with dark lines and yellow, green, and red spots – representing the islands – of the snake. Its tail is directly connected to the mountains and widens along its fifteen descending and ascending waves to the large head, which depicts the mouths of the so-called *mare aque dulcis*, another of the colonial hydronyms of the Amazon. Only the head faces north, above the equinoctial line and below the hydronym and a compass rose, in a kind of cartographic syntax that establishes that the entrance and exit – this is, control of the flow – of the fantastic and grandiose river belongs to this hemisphere. Additionally, the winding body with sixteen tributaries and thirteen settlements with monumental buildings of different scales on its adjacent banks are located to the south.

Breaking the continuous thick yellow line of the Equator, we find the name assigned to the *Quarta orbis pars* and commonly used in cartography since 1507, thanks to the Ptolemaic planisphere of Franco-German geographer and cartographer Martin Waldseemüller: *Americas*. Above the continental toponym is the coat of arms of the Catholic monarchs, and on either side the flag and banner with the double-headed eagle of the Habsburg dynasty embedded in prominent red dots, confirm the Spanish presence. The the toponym *Peru*, the name of the viceroyalty created in the same year that Orellana discovered the Amazon, stands out between the western coast and the mountainous areas and tree-covered valleys. On the eastern coast, the toponym *Brasilis* stands out in red letters, and below it is the coat of arms of the Kingdom of Portugal, in use since 1481, which appears to be the target of an arrow shot by a native with his bow, who is standing to the left of the Portuguese flag with its five blue bezants (disks). Thus, the winding river seems to be the boundary between the two Iberian empires.

Beyond political symbolism, it is in the southern hemisphere, specifically between the Equator and the Tropic of Capricorn, where all human activity takes place: that is, in the southern surroundings of the undulating serpent. To the southwest, we see *el Cuzco* (Peruvian city) and mining extraction – probably in Potosí, next to the reddish mountains – but to the north, among the Andean mountains, another imposing city seems to shine: Lima. From there, the Spanish conquest against *Atabaliba Regne* (that is, the kingdom of Atahualpa, who was the last ruler of the Inca empire and who died in 1533) unfolds. This is the scene of Francisco Pizarro's conquest army preparing for war. Around two fences there are fourteen tents of different colors, shapes, and sizes: six with pennants, four with arabesques, and others with geometric drawings. As for the military personnel, four men on horseback wearing ar-

mor stand out, along with at least a hundred others wearing helmets, breastplates, wide breeches, and boots. Based on the weapons they carry, some of them would be spearmen.

As an oriental backdrop to the scene, there is an Amazonian tributary and a towering tree with dry branches, whose roots seem to be buried in the blue mountains. A green macaw with colorful wings rests on a branch, seemingly targeted by the arrow that an Indigenous warrior has drawn on his bow. Yet the warrior's posture and bearing suggest that he is prepared not only to defend himself against the enemy army positioned behind the bird and beyond the mountains, but also to launch an attack. Behind the warrior, from another leafless tree, hang four dismembered limbs and the head of what appears to be another member of the group, as indicated by the features he shares with the warrior. These images form the western frame of the scene, and at its eastern edge the inscription *Canibales carnibus umanis* can be read:

One of the scenes is of a village of cannibals. The villagers have two fires burning with an (identifiable) arm and leg being grilled on the rear fire. To the right of the fires is a tree with legs, an arm and a head hanging from the branches. The illustration is located below an iconic feature that will characterize many maps of this part of South America – the snake-like Amazon river, which resembles the Anaconda. Furthermore, Diogo Homem inscribed the word *Canibales* to the right of the scene. (Chambers 2006: 176)

This is a cartographic re-creation of the practice of cannibalism, presented in a colorful, festive, and ritual scene that depicts the life of an entire group among the many Amazonian peoples. In previous cartography, cannibalism had been figuratively hinted at in the 1540 map by German cosmographer Sebastian Münster – in which the continent begins to take shape – and was also suggested by Caboto in his 1544 representation. However, in this case, the practice is illustrated and embodied by anthropomorphic beings who eat human flesh, apparently as part of a monstrous and savage daily life that emerges from European exoticism as a projection onto the New World (Chicangana-Bayona 2017). Thus, the figure of the cannibal became firmly established in the European imagination of the sixteenth century as a central protagonist in both the fantasies and the collective fears of the time, in Europe as well as in overseas territories (Vignolo 2005: 154).

The Indigenous peoples were deemed “savages” not only because they resisted conquest but also because of their dwelling within and around the river environment. This gave rise to “a long-distance historical-cultural process, based on a European source,” revolving around three elements: the migration of a population convinced of its own worth and its civilizing mission; an unknown and sparsely populated territory considered ripe for colonization and various forms of exploitation; and an Indigenous population whose culture, ways of life, and social organization

were considered inferior (Bouchard 2003: 29). Accordingly, in European eyes the image of the Indigenous people possessed four negative traits: nudity, associated with libertine shamelessness and sexual excess; superstition or presumed atheism; anarchy and a rudimentary socioeconomic order deemed outdated; and, finally, cannibalism (Altmann 1995: 480).

The serpentine figure and the scene of cannibalism, products of colonial fantasy, came to form part of a series of imaginaries about the region depicted in maps, serving as metaphors of the represented space that laid the foundation for the “imaginative geographies of empire” (Cosgrove 2002: 87) and gave rise to a “cartographic myth” (Ortega Sánchez 2013). Such imagery was capable of generating imagination and thought, of making people see and believe, especially from a distance. The Amazon was construed as an immense, rich, and untamed territory, a natural setting for the conquest of its lands and peoples by colonial empires. At the same time, however, it elicited fear of the unknown and of unforeseen dangers that might exist there. This dichotomous perception contributed to the foundation of the “epic dimension of colonization” (Bouchard 2003: 26), marked by an ambiguity linked to nature in the representation of Indigenous customs – an ambiguity that in turn gave rise to a mixture of curiosity and aversion towards the natives (Beauchesne 2013).

The colonial encounter represented by European warriors and cannibalistic Indians simultaneously provoked feelings of fear and attraction, which generated in the conqueror a fascination with the savage other and the “culture of terror” that emerges from the act of separating and negating the “other-world” targeted for conquest, thereby producing the fusion of the conqueror’s so-called civilized world with the beastly and savage “other-world” (Taussig 2002). This ideological foundation justified the use of force and violence to conquer those peoples deemed barbaric and ignorant. Thus, the colonial invasion-invention of Amazonia was made possible through the particular gaze of the European conquerors upon the territory and its inhabitants – a gaze that, through interpretation within its own narrow cultural terms, succeeded in inscribing the region on the world map by means of geographical imagination, that is, through the creation of the idea and image of the great serpentine river (Unigarro 2024a; 2024b).

The serpent and the macaw, the military attire and the naked bodies, and even the dry tree from which dismembered body parts hang, all appear in their own cartographic representation as mute witnesses of a history endowed with its own agency and meaning within the imagination of the past, which simultaneously accounts for and describes the “landscape of the visible” (Rancière 2011) of a region in constant transformation. The Amazon has not only changed course as a possible geological effect of the Anthropocene, but was also included in the global imagination at the beginning of this era. Moreover, it has undergone a radical transformation in the conditions of its visibility and in the ways it is represented to the world (Emmelhainz 2015). In this sense, both the sixteenth-century cartographic representation

of the winding serpent and today's maps of deforestation are cultural products that reveal complex regional realities such as the conquest and extraction of resources that have been present since then and are still latent today.

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From the Shores of the Sea to the Lands of Quito

Carla Jaimes Betancourt



Bento da Costa (attributed), “La planta del río Amazonas desde Quito hasta su desembocadura,” in *Descubrimiento del Río de las Amazonas y sus Dilatadas Provincias*, folio 32 (1639). Source: Jiménez de la Espada (2020 [1889]); Biblioteca Digital Hispánica (<https://bdh-rd.bne.es/viewer.vm?id=0000199147>).

The map accompanying the manuscript entitled *Descubrimiento del Río de las Amazonas y sus Dilatadas Provincias* (Discovery of the River of the Amazons and Its Vast Provinces), preserved at the National Library of Spain, is a key piece in the history of Amazonian cartography. Jiménez de la Espada (2020 [1889]: 6) [attributes the map to the Portuguese pilot Benito de Acosta (or Bento da Costa in Portuguese), who took part in the expedition led by Pedro Teixeira. This map stands out as one of the earliest to provide systematic observations of the Amazon River, including distances in leagues and depths in fathoms. Beyond its practical value, the map possesses a remarkable aesthetic character, with ornamentation and coloring that reflect seventeenth-century cartographic techniques. The coat of arms of Quito, prominently displayed in the design, underscores the city's importance as a strategic point for explorations into the Amazon. Over time, however, the work has been subject to misattributions, having been credited to governor Martín de Saavedra y Guzmán or to the jesuit Cristóbal de Acuña, Teixeira's companion.

Despite its detailed hydrographic representation and the legend claiming that "From the shores of the sea to the lands of Quito, on one side and the other there are countless provinces, which, because they are so many and not all their names are known, are not shown here," the map omits any visual or symbolic reference to Indigenous peoples. This absence contrasts sharply with contemporary accounts such as that of Gaspar de Carvajal ([1542] 1934), which describe a densely populated Amazon during the first exploration initiated in 1541 by Pizarro and Orellana. The omission is significant, as it reveals how sixteenth- and seventeenth-century geographic depictions, far from being neutral representation, operated as a tool of territorial control and legitimation of colonial rule (Fernández-Christlieb and Garza Merodio 2006).

Environmental and Social Transformations in Post-1492 Amazonia

Historical accounts such as those of Gaspar de Carvajal ([1542] 1934) describe an Amazon densely inhabited, with settlements housing thousands of people. Yet by the seventeenth century, such records vanish, reflecting the social fragmentation brought about by colonization and the region's reconfiguration (Denevan 1996). The arrival of Europeans marked a turning point, triggering the "Great Dying" – a demographic collapse that decimated up to 90 percent of the Indigenous population during the sixteenth century (Denevan 1992). Before this crisis, the region supported between 6 and 10 million inhabitants organized into large, permanent villages, whose intensive landscape management significantly transformed ecosystems (Denevan 2003; 2014). The subsequent abandonment of traditional agricultural systems allowed for the regeneration of roughly 55.8 million hectares

of forest, sequestering 7.4 Pg of carbon, lowering atmospheric CO₂ by 3.5 ppm, and contributing to the climatic cooling known as the Orbis Spike (Koch et al. 2019).

Environmental responses to this collapse were diverse. In some areas, such as the seasonally flooded savannas of French Guiana, fire activity intensified after European contact. In contrast, in regions with Amazonian Dark Earths (ADE), polycultural agroforestry systems preserved forest cover, challenging the notion of uniform reforestation (Iriarte 2024).

The impact of colonization extended far beyond Amazonia. Massive depopulation across the Americas, coupled with population losses in Africa due to warfare and enslavement, promoted forest regeneration, and a global reduction in CO₂ levels, which may have contributed to the onset of the Little Ice Age (Koch et al. 2019; Nevle et al. 2011; Nevle and Bird 2008). This hypothesis of large-scale reforestation has even been proposed as a marker for the beginning of the Anthropocene in 1610 CE (Lewis and Maslin 2015). Yet it has also faced criticism, particularly regarding the difficulty of empirically linking depopulation, forest regeneration, and global atmospheric change (Zalasiewicz et al. 2015). Moreover, studies suggest that Amazonian populations may have already begun to stabilize by 1200 CE, due both to ecological carrying-capacity limits (Arroyo-Kalin and Riris 2021) and to the highly variable nature of reforestation dynamics across local contexts (Bush et al. 2021).

European colonization between the sixteenth and eighteenth centuries profoundly transformed both ecosystems and social relations through the intensive exploitation of resources, the introduction of new technologies such as iron tools, and the construction of missions and cities. These practices, legitimized by colonial narratives rooted in the “civilization-barbarism” dichotomy, reshaped Amazonian biodiversity by promoting the domestication of species and reconfiguring landscapes in ways distinct from Indigenous practices (Cuvi, Guiteras Mombiola, and Lehm Ardaya 2021). In this context, the selected image reinforces such narratives by representing the Amazonian space as empty and available for appropriation, thereby silencing the presence and agency of Indigenous peoples.

Before Contact: Amazonia as an Anthropogenic Landscape

Far from the traditional vision of Amazonia as pristine rainforest, interdisciplinary research has demonstrated that at least 11 percent of *terra firme* forests in the Brazilian Amazon are anthropogenic, as a result of long-term management by pre-Columbian Indigenous populations (Balée 1989). This sustained management left a lasting imprint on biodiversity. In Central Amazonia, archaeological sites with multiple occupations present 10 percent higher floristic diversity compared to sites with single occupations, reflecting a long-term impact on forest composition and structure (Lins et al. 2015). With at least eighty-three domesticated species,

the region was a key center of agricultural innovation (Clement et al. 2015). The presence of hyperdominant plants – a small number of species present in overwhelming abundance – further highlights the human role in shaping biodiversity over millennia (Maezumi et al. 2018).

Recognizing Amazonia as an “anthrome” or anthropogenic landscape underscores the diversity of Indigenous cultural strategies, ranging from sustainable resource management to intensive forms of agriculture (Arroyo-Kalin 2015; Clement 2014). This perspective challenges European notions of domestication (Clement et al. 2024) by emphasizing that Amazonian societies conceptualize their relationships with non-human beings through social bonds and ontologies that recognize shared attributes between humans and non-humans (Descola 1992; Viveiros de Castro 2004). Incorporating these historical legacies into Anthropocene debates is essential not only for acknowledging Indigenous influence on ecosystem transformations but also for integrating traditional knowledge into current conservation and sustainability efforts (Coelho et al. 2021).

Cultural Landscapes and Anthropogenic Legacies: *Terra Preta*, Urbanism, and Environmental Management

Among the most studied legacies of Amazonia are the *terra preta de índio* or Amazonian Dark Earths (Glaser and Woods 2004), highly fertile anthropogenic soils created through intensive processes of soil formation. Chemically enriched and abundant in ceramic fragments, these soils were strategically distributed across the landscape, serving as valuable resources in both practical and symbolic terms (Arroyo-Kalin 2017). Associated with large sedentary settlements – like those described by Carvajal ([1542] 1934) – they confirm the existence of intensive agriculture and territorial planning along the major Amazonian rivers (Neves et al. 2021; Neves 2022).

Beyond dark earths, late pre-Columbian cultural landscapes in Amazonia include urban patterns interconnected by road networks, surrounded by agricultural fields, orchards, and managed forests, as seen in the Upper Xingu (Heckenberger et al. 2003; 2008). Large-scale earthworks and drainage modifications are also evident in monumental low-density urbanism sites documented with LiDAR in the Llanos de Moxos (Prümers et al. 2022). Although some studies argue that forest modifications in interfluvial areas were minimal (Piperno, McMichael, and Bush 2015; McMichael et al. 2017), archaeological research has revealed pre-Columbian earthwork enclosures spanning 1,800 km across the southern Amazon, demonstrating that interfluves and smaller tributaries supported high population densities in fortified villages between roughly 1250–1500 CE (De Souza et al. 2018).

Moreover, higher concentrations of domesticated trees and palms have been documented near archaeological sites and along major rivers and tributaries, con-

firming that past management practices continue to shape present-day landscapes. Indigenous agroforestry systems likewise remain active, representing a repository of knowledge developed over millennia (Levis et al. 2017; 2018).

Indigenous Amazonia: Historical Lessons for a Decolonized Anthropocene

The concept of the Anthropocene, traditionally associated with environmental destruction attributed to humanity as a whole, has been criticized for its Eurocentric and universalist framing. Such perspectives overlook cultural diversity and the sustainable human-nature interactions found in regions like Amazonia (Aparicio et al. 2024). By focusing exclusively on devastation, they obscure Indigenous contributions to long-term landscape management and biodiversity conservation.

As argued above, far from being a “virgin” wilderness, Amazonia is an anthropogenic landscape, shaped by millennia of human-environment interaction. For decades, early archaeological theories – heavily influenced by ideas linking social complexity to ecological carrying capacity (Steward 1948; Meggers 1971) – dismissed Indigenous and ethnohistorical narratives. Yet accumulating evidence now demonstrates that Amazonian societies developed sustainable strategies for managing natural resources, leaving a lasting imprint on biodiversity. According to Aparicio et al. (2024), Indigenous practices such as forest management, diversified cultivation, and hunting have fostered significantly greater biodiversity compared to non-managed areas. These practices are deeply embedded in Indigenous cosmologies that conceive of nature as an interdependent network of human and non-human beings, offering alternative perspectives on how to relate to the environment.

The theory of cultural niche construction (Laland and O’Brien 2010; Arroyo-Kalin 2015) further emphasizes how human practices transform landscapes and plant populations, positioning Indigenous peoples as ecosystem engineers. To rethink the Anthropocene from this perspective requires integrating these historical dynamics and recognizing the central role of Indigenous communities in landscape management.

In light of such discussions, alternative terms such as the “Capitalocene” (Graeber and Wengrow 2021) or “age of destruction” (González-Ruibal 2018) highlight the impacts of capitalism and extractivist practices on today’s climate crisis. By contrast, concepts like the “Good Anthropocene” (Iriarte 2024) underscore how lessons from the past can inform sustainable solutions for the future.

Ultimately, integrating Indigenous knowledge with archaeological, ethnohistorical, and ecological approaches not only provides a more inclusive vision of the Anthropocene but also provides us with crucial tools to address the climate crisis in respectful and sustainable ways. Recognizing Indigenous communities as key agents in both the historical and contemporary transformation of Amazonia is es-

sential for envisioning and building a more balanced future. In this sense, critically revisiting early representations such as the *Discovery of the River of the Amazons* map enables us to understand not only how conquest narratives were constructed, but also how the social and ecological complexity of Indigenous life was rendered invisible – a complexity that we now seek to revalue.

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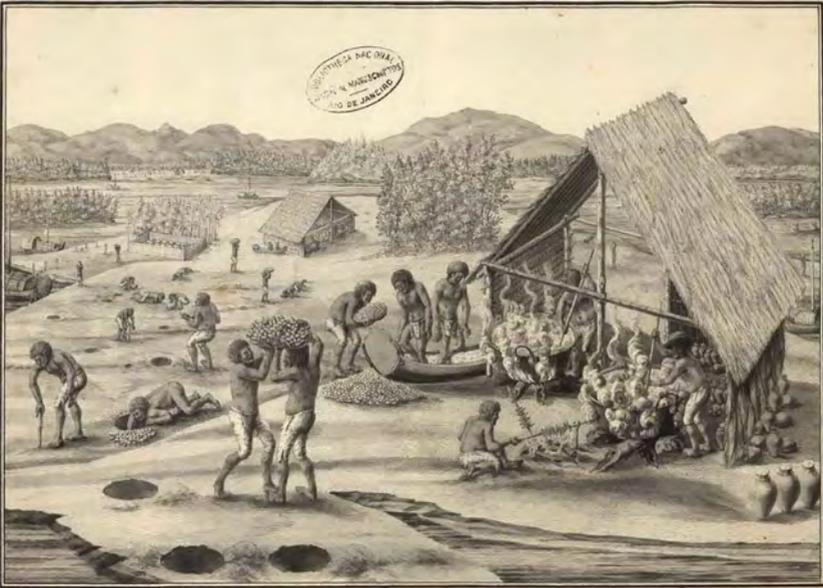
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The Production of Butter from Turtle Eggs

Frederik Schulze



Alexandre Rodrigues Ferreira, *O fabrico da manteiga de ovos de tartaruga*, illustration by José Joaquim Freire or Joaquim Codina (c. 1783–1792). Manuscritos, 21A,1,001, no. 18. Rio de Janeiro: Biblioteca Nacional.

In the 1780s, Alexandre Rodrigues Ferreira (1756–1815) wrote some of the earliest known texts that criticized anthropogenic effects on the environment in the Amazon. Born into a family of merchants in Bahia, Brazil, Ferreira was sent to Portugal in 1770 to study at the prestigious University of Coimbra (Fontes 1966; Carvalho 1983; Miranda Neto 2012). At the time, the Portuguese Crown, influenced by the Enlightenment and the political reforms of the Marquis de Pombal, was seeking to optimize the economic output of and political control over its overseas colonies; to this end, it organized scientific expeditions to collect knowledge about the geography, natural resources, and Indigenous people of these distant territories (Domingues 1991).

After graduating in natural history, Ferreira was recommended by one of his professors to lead an expedition to the Amazon. Together with the painters José Joaquim Freire and Joaquim Codina and a botanist, he set sail for Belém do Pará in 1783. In 1792, he returned to Lisbon where he began to organize the vast collection of animals, plants, and ethnographic artifacts he had gathered in these nine years. During and after the voyage, he wrote dozens of reports. However, his texts were not published, nor was the knowledge he had obtained used by the government, since Ferreira's occupation as a civil servant slowed down the preparation of the collection. When the French occupied Lisbon in 1807, they stole a large part of the items collected by Ferreira. Geoffroy Saint-Hilaire would later use Ferreira's objects to name several monkey species (Meirelles Filho 2009: 78). Ferreira's texts were only published posthumously, and their visual component was not made public until 1970–71 (Ferreira 1971; Raminelli 2001).

The pictures from Ferreira's collection include animals and plants, Indigenous people and their costumes, and cityscapes and maps. One of the most stunning images is the depiction of the "Production of Butter from Turtle Eggs," today part of the collection of the Biblioteca Nacional in Rio de Janeiro (Ferreira n.d.; Ferreira 1971 [1783–1792]: illustration 57). The illustrator (Freire or Codina) condensed schematically the process of butter production in one image, corresponding to what Ferreira describes in his *Memórias* about turtles and their eggs, especially in his *Memória sobre a jurararetê*, written in Barcelos on the Rio Negro in February 1786.

Turtle meat and eggs ranked among the most important staples in the Amazon during colonial times. While turtles were hunted and even kept in corrals, their eggs were collected to produce butter and oil for cooking and illumination (Fiori and Santos 2015: 43–74). The Portuguese used turtle butter mainly for local trade and consumption. Although minor as an article of export, turtle butter represents, together with spices, one of the early natural resources of the Amazon that the Portuguese inserted into their colonial economy. The scope and impact of this exploitation laid the foundation for later economic interventions in the Amazonian biome.

On the left side of the image, several Indigenous people dig holes on a riverbank with wooden sticks. The river's beaches were where turtles would lay their eggs, normally up to 200 per individual (Ferreira 1972a [n.d.]: 27). The people in the drawing extract these eggs and collect them in baskets; Ferreira writes that this took place in the Rio Negro area usually in November (1972 [1786]: 38). In the middle and the right side of the picture, we see a butter factory (*feitoria*) established temporarily on the beach. As a first step, the Indigenous "gather them [the eggs] in a heap on the beach and, if one wants a higher yield of butter, let them ferment for 4 or 5 days" (38).

When the eggs are prepared fresh, they put them in a canoe set aside for this purpose and knead them with their feet as they do with grapes in Portugal. Water is poured over the crushed eggs and, after being well stirred and incorporated with

them, the oil is allowed to supernate. The supernatant oil is removed with gourds or shells called *itãs*, used as spoons, and thrown into pots. They are then put on the fire, cooled in separate pans, and then moved to jugs. (39)

The picture also shows workers feeding on baby turtles at the *feitoria*. On the right side, we get a glimpse of the jugs, which will be transported by several canoes. On the left side on the riverbank, the illustrator included a corral or *pesqueiro* where adult turtles were held captive for further exploitation (41–42).

In sum, the picture gives the impression of a standardized, professional, and almost industrial procedure. However, it is in fact a fierce criticism of this procedure. At first glance, the image is relatively discrete in condemning the production of turtle butter, yet the sheer number of processed eggs and the racist depiction of the Indigenous – who appear as shaggy, greedy, and unreflective – point to what Ferreira explained in more detail in his texts. In his already mentioned *Memória*, he complained constantly about the excessive destruction of turtle eggs and hunting of adult individuals and expressed his concern about the decline of the turtle population.

This amphibian that is so useful to the State has not yet received the care or measures that are required to avoid abuses against it. A turtle to reach its proper growth takes a few years. Annually innumerable ones are wasted at the absolute arbitrariness of the Indians; all the hatchlings are discovered, trampled underfoot, and most of the turtles are eaten unnecessarily, all of which together contributes to their rarity over time. (41)

According to Ferreira, tens of thousands of turtles and eggs were collected and destroyed in the 1780s, mainly in the Captaincy of Rio Negro. As a consequence, turtles began to disappear in certain regions (Schulze 2025: 105). While the drawing does not specify the turtle species, Ferreira lists fifteen different Amazonian turtles and claims that the *jurararetê* or giant Amazon River turtle suffered most from predatory human behavior (Ferreira 1972a [n.d.]). He also refers to a law from 1769 that had banned a specific hunting method of turtles in the Rio Branco area, but which, apparently, was not enforced (Ferreira 1972 [1786]: 41).

What do Ferreira's texts and illustrations tell us about the Proto-Anthropocene? First and most interestingly, the turtle butter example demonstrates that representatives of European colonial intervention were not automatically unaware of environmental issues or uncritically in favor of total exploitation. Clearly Ferreira's view of nature as a passive object was European; nevertheless, he took issue with colonial politics and sought a change in environmental legislation and human behavior towards nature. He understood the harmful effects of human intervention and argued for sustainability. Although pity for the turtles might have played a role,

the main reason behind his argument was the recognition that the economic use of turtles would be jeopardized if the animal was hunted to extinction (Pádua 2002: 86–87). In this sense, scientific knowledge was not simply utilized to exploit nature, even though this was a crucial aspect of the colonial endeavor (Miranda Neto 2012: 222–223). Conservation also played a role.

The second surprising finding is that Indigenous people were active participants in anthropogenic behavior. Without a doubt, Ferreira, and in particular the image in question, downplayed Portuguese participation in the turtle butter trade and the increased demand caused by the colonial regime. Nor did he highlight the fact that the Indigenous harvesters worked in the context of a colonial labor system. Rather, he described the production of turtle butter as part of Indigenous culture and economic techniques (Ferreira 1972a [n.d.]: 27; 1972b [n.d.]) and attributed responsibility to the Indigenous who participated in the unsustainable extraction and trade of eggs and were often able to make a fortune with the butter trade. In an almost anti-capitalist critique, he wrote:

A canoe equipped with skillful people, in a year when the weather is not bad, makes around 1,000 jugs, and in big harvests, they double that amount. Each jug is sold in the city for 1,000 réis if there is no shortage of the product, but if there is, it can go up to 1,600 and even 2,000 réis. The competition from the Indians, who flock to the beaches at this time to make a living from turtles and their eggs [...], and the waste caused by turning thousands of turtles [...] are undoubtedly important factors in their decline in number. (Ferreira 1972 [1786]: 39)

Even bearing in mind the Portuguese responsibility in this scenario, we can conclude that anthropogenic behavior in colonial settings was complex and not strictly restricted to the colonizers. Indigenous groups did not necessarily live in harmony with nature, and Europeans did not always aim at exploiting natural resources without critical reflection. This finding does not trivialize the colonial setting in which turtle hunting flourished, but it takes Indigenous individuals seriously as actors who could pursue their own economic goals within the colonial system, in this case by collecting turtle eggs.

Third, the image demands a reevaluation of chronology and agency in the field of scientific explorations. While scholarship often highlights European scientists such as Alexander von Humboldt whose travels in South America provided a fresh, scientific, and arguably non-colonial view of the region, Alexandre Rodrigues Ferreira, born in Brazil, produced his research and environmental thinking much earlier. On the one hand, Ferreira classified and evaluated nature much like other travelers had done, but on the other hand, he contributed to the discovery of many new species (Fontes 1966: 33) and provided a multi-faceted interpretation of the nature of his home country by underscoring the importance of biodiversity. The many accounts

by European travelers in the following decades that mentioned the overhunting of turtles and the practice of turtle butter production must be seen in the context of a Brazilian rather than a primarily European tradition.

Government measures to protect turtles had little success. Commenting on their experiences in Brazil from 1817–20, German travelers Johann Baptist von Spix and Carl Friedrich Philipp von Martius lamented the excessive hunting of turtles, even as they mentioned environmental policies to regulate such hunting (1966 [1831]: 1142–1143). Indeed, throughout the nineteenth century, travelers such as Englishman Henry Walter Bates or Frenchman Marcel Monnier still criticized the exaggerated hunting of turtles and the collection of eggs (Bates, vol. 2, 1863: 272; Monnier 2005 [1890]: 333). The Amazon Steam Navigation Company petitioned as late as 1904 for the conservation of turtles (1904: 78). This is another lesson of the Anthropocene: Even when humans do understand the consequences of their harmful behavior, as Ferreira did in the late eighteenth century, correction is not automatically forthcoming, but rather must be purposefully implemented.

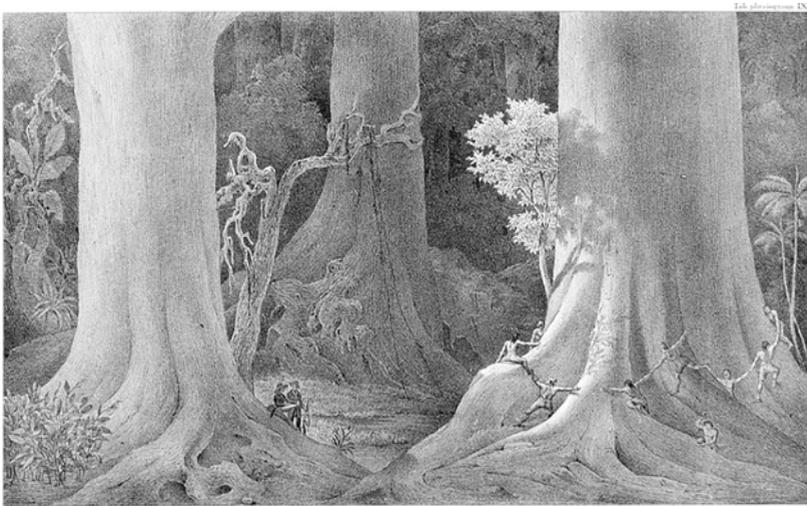
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Trees Born Before the Birth of Christ

Leticia Squeff



Karl Friedrich Philipp von Martius, "Arbores Ante Christum Natum Enatae, in silva juxta fluvium Amazonum," in *Flora brasiliensis: enumeratio plantarum in Brasilia* (1840–1906).

Karl Friedrich Philipp von Martius arrived in Brazil in 1817 as one of the leaders of a large expedition that covered nearly 10,000 kilometers of Brazilian territory, which at that time was part of the United Kingdom of Portugal, Brazil, and the Algarves. With the help of zoologist Johann Baptist von Spix, this expedition carried out a groundbreaking, comprehensive study of Brazilian fauna and flora, establishing the foundations of what would later be defined as the Brazilian biomes. Martius also wrote about the history of Brazil, collecting and studying the customs, music, clothing, and languages of the various Indigenous groups with whom he came into contact (Diener and Costa 2018). He went on to edit *Flora Brasiliensis*, a monumental work first printed in Latin in 1840, which, after his death, continued to be published until 1906. Describing more than 22,000 plant species, *Flora Brasiliensis* is considered the largest botanical treatise regarding Brazil. The lithograph "Trees Born Before the

Birth of Christ” (*Arbores Ante Christum Natum Enatae, in silva juxta fluvium Amazonum*) was created as part of this work.

This lithograph is an example of how the appropriation of tropical nature by nineteenth-century naturalists was highly problematic. In the first place, the published image was based on a drawing by the Belgian diplomat Benjamin Mary, who depicted the Atlantic forest but never visited the Amazon (Martins, Piccoli, and Stols 2006). *Flora Brasiliensis* was illustrated by other artists, including Thomas Ender, Johan Jacob Steinmann, and the photographer George Leuzinger. Composed of images created by many individuals and supported by personal testimonies as well as scientific texts, the *Flora* constitutes an interpretation that aims to be universal and scientific of a nature still little known yet already recreated in the projections and imaginations of foreign visitors.

The lithograph “Trees Born Before the Birth of Christ” is one of 59 “physiognomic tables” printed in the *Flora*. This term has an important meaning in the history of the Americas, as it refers to the illustration model developed by Alexander von Humboldt to explain American vegetation as the result of a combination of geographical, geological, and climatic factors, as well as interaction with fauna. For Martius, an admirer and reader of Humboldt, the tables served the function of complementing a work such as *Flora Brasiliensis*, whose botanical illustrations showed each plant in isolation (Diener and Costa 2012). Martius also sought to combine his “scientific” knowledge with an aesthetic interest in the different aspects of nature. He believed in the existence of an original harmony between the elements and often echoed ideas of Goethe, whom he also knew personally (Andrade 2023). Martius sought to understand as an integrated whole the relationships between all the aspects of life he had encountered in Brazil. For this reason, he is considered by many to be a precursor of environmental awareness in the nineteenth century (Heizer and Ormino 2018). However, his relationship with the flora and the original inhabitants was not free of contradictions (Lisboa 1997).

The lithograph is distinguished by the economy of elements it represents: three enormous tree trunks, with tiny human figures distributed throughout the scene. Each trunk appears at one extreme of the frame, with a third a little further back, at the bottom, forming a triangular structure, in a typically classical arrangement. The smaller trees and bushes surrounding them indicate that the characters are in a forest. In the text accompanying the table, Martius comments that that part of the forest, with its gigantic trees, looked like a “magnificent temple, (...) built by the author of nature himself” (1996: 46). His words convey an enchanted, almost religious vision of the forest, which also seems to reverberate in the image. In fact, the thick trunks evoke large columns, implying an association between nature and divinity that would be highly appreciated by the romantic sensibility of the period.

In his text, Martius writes that he had spoken to the Indigenous inhabitants to obtain information about these trees. However, by calling them “trees that grew be-

fore Christ,” he inserts the autochthonous tree into a history that occurred thousands of miles away, and that is only meaningful to Christians. In so doing, the naturalist replaces the sacred vision of the forest shared by Indigenous people from different Amazonian groups (Albert and Kopenawa 2023) with other epistemes. Thus begins a process of symbolic appropriation of natural and indigenous space that would be further developed in the lithograph.

This representation is clearly linked to a broader series of visual representations of the forests of the Americas: in the case of Brazil alone, it is worth mentioning the images created by the Count of Clarac, Saint-Hilaire, Rugendas, Adrien Taunay, and later by photographers such as Albert Frisch and Marc Ferrez, among many others. Utilizing similar compositional schemes with minor thematic variations, the image of the forest is consolidated either as the opposite of “civilization” and a place of barbarism due to potentially dangerous Indigenous groups, or as a sanctuary, a “temple” of original purity reminiscent of the Garden of Eden of Judeo-Christian tradition.

The Domesticated Forest

Although its title refers to trees, it is the human figures that help us understand the deeper meanings of this image. In one half of the frame, a group of near-naked men form a circle around one of the trees. In the other, almost in the center of the representation, we see two “civilized” men, fully dressed and comfortably seated. While the Indigenous inhabitants work, the European travelers watch. Observation is the privilege of naturalists (and that of the image’s viewers, including ourselves). In the interplay between actors on the right and left, the game of colonialism is staged: Europeans and Native Americans, ethnographers and their specimens. By bringing travelers and Indigenous people together in the natural space, the image portrays the forest as a space of cultural negotiation.

Martius’s written account helps us understand the scene: he tells us that he and Spix “asked” the indigenous group to measure the circumference of the enormous tree. To completely surround the trunk, Martius says in amazement, “it took fifteen men” (2017). The text then changes tone. He discusses ways to calculate the age of the tree and its height, offers hypotheses about its chemical composition and about how many tons of wood might be extracted from its trunk, as well as the heat produced by burning it, among other data that distance the story from its earlier sensitive and testimonial tone and introduce it into a pragmatic rationality.

This lithograph demonstrates the expansion of the domains of science and capitalism into the Amazonian forest. The gestures of the indigenous figures evoke other scenes created by Europeans that also articulate indigenous and/or African bodies and the natural environment (Buono 2007). Among these we can mention, for instance, the *Terra Brasilis* map included in the Miller Atlas in 1519, decorated with

men carrying logs of Brazilwood to the European ships moored on the beach; or the countless representations of the destruction of the forest made by Wied-Neuwied, Rugendas and Debret, among others (Marques 2024). Thanks to the labor of Indigenous peoples and Africans, the confines of the known world were incorporated into empire (Pratt 2008 [1992]), whether the Portuguese monarchy or, later, the logic of the international circulation of forest goods in the context of independent Brazil's participation in the capitalist market.

As for the two European characters, one appears to be drawing the scene shown on the right. Beside him, the other carries a rifle pointed carelessly at the ground. The association between the artist and the gunman is not a coincidence; rather, it seems to summarize one of the contradictory aspects of the role of European naturalists in America. The artist and the other man converse while contemplating the efforts of the Indigenous group to encircle the tree trunk. In this representation, which of the two is Martius: the artist or the armed man? Look, observe, choose the target, and attack (...) with rifle or paintbrush (Penhos 2005). The rifle and the brush remind us that botanical drawing and landscape painting accompanied the colonial project of conquest (Bleichmar 2012). Judging by the prestige achieved by Humboldt, Martius, and many other naturalists, it is possible that the image was more effective than the rifle in guaranteeing colonialist interests. Although this lithograph is often referred to as merely another representation of the “great Brazilian forest,” it is time for us to acknowledge it as a representation of colonialism.

A final aspect of the representation is worth highlighting. The center of the image is occupied by the meeting of the roots of the two enormous trees in the foreground. The encounter between the roots, which almost touch, evokes that other utopian encounter between Europeans and Indigenous people staged by the characters in the image, that is, between civilization and nature, between the “civilized” gaze of the observer and the “natural” condition of the observed. It is the record of a utopian dream – Martius’? ours? – of a harmonious encounter between the West and the natural world.

The Indigenous people depicted by Martius prefigure what would be one of the most tragic chapters of the Anthropocene in the tropics: the exploitation of the forest by the market economy (Valdés and Squeff 2024). This exploitation went through different stages, which we can only briefly mention here. During the colonial era, the forest was sought out as a source of products (cloves, cinnamon, sarsaparilla, chestnuts, cocoa, dyes, fibers, among others) that were sold to Europe and North America. The Amazon had been visited by European travelers since the sixteenth century, yet it was not until the nineteenth century, or until Humboldt's voyage, that its flora, fauna, and inhabitants began to be systematically studied. In 1865, the Thayer Expedition, led by Louis Agassiz, was another decisive step in the process of exploring and mapping this region. Subsequently, several photographic expeditions further expanded the material on Indigenous peoples and their ways of life (Meirelles

Filho 2010; Souza 2019). At the end of the nineteenth century, the exploitation of rubber brought a brief period of wealth and luxury to some towns in the region. And a century later, the clearing of forests to build roads and pastures for livestock has led to the worst environmental and humanitarian crisis yet for the forest and its inhabitants. The consequences of this latest stage of exploitation of the Amazon are reflected in global warming and other processes with broad implications for the planet. To mitigate these urgent problems, the life of the forest and its original inhabitants must be guaranteed.

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Visual Representations in Mesoamerica in the Colonial Period

Map of the Hills of the Pachuca Real de Minas

Enriqueta Lorena Cortés Manresa



Mapa de los cerros de Real de Minas de Pachuca, autor unknown (1750).

Source: Mapoteca Manuel Orozco y Berra, Mexico.

Looking closely at this map of a mining complex painted by an anonymous artist in 1750, we find that the information in the left margin lists the twenty-nine mine shafts that formed part of the Pachuca-Real del Monte silver circuit (in the present-day state of Hidalgo, Mexico). At the time, the area covered the space guarded by

the mountains and was surrounded by the hills of San Cristóbal, “the one called La Rejona,” Magdalena, and Mesa. Paying closer attention, it is also possible to locate the village of Pachuca, a series of dwellings grouped together or scattered around the mine entrances, nestled among steep paths and narrow ravines. The geography was clearly difficult to traverse, and yet, as is well known, mule caravans were able to move along these routes carrying the implements required for daily mining labor. The map also shows the main structures that articulated the settlement: the parish church; three additional churches (San Diego, San Juan de Dios, and Santa Veracruz); three small plazas and the bullring; three haciendas; as well as the colonial administrative buildings: the royal treasury, the assaying office (where officials tested and examined precious metals to determine their purity and value), and the public notary. Two roads branched northeast and east, one leading to Atotonilco el Chico and the other to Real del Monte, in addition to a tributary of the Omitlán River that ran through the settlement.

As can be seen at a glance from the center to the bottom of the map, the mining complex ultimately became embedded in the mountainous landscape, causing deforestation around the settlement and colonial buildings, where only a few scattered bushes can be seen. By contrast, the upper part of the image shows evident greenery, with different types of vegetation represented, such as cathedral cacti (*Euphorbia trigona*) that resemble pine groves, alongside shrubs, and bushes. A main stream, fed by two tributaries with patches of bushes and grasses along their banks, runs through the settlement, requiring four bridges and an aqueduct to the east (right side of the map), which also suggests a water drainage channel. Shading in certain areas of the map shows the elevations of the mountainous terrain, highlighting the relief. Notably, given the purpose of the painted map – marking the enclave of the twenty-nine mine shafts and the population settlement – no local fauna is represented, although, given the ecosystem, endemic species such as pocket gophers, shrews, fish, reptiles, amphibians, and endemic birds must have been abundant.

Apparently, the anonymous hand that painted the settlement area of the mining complex did not employ mathematical skills or astronomical references, both characteristic features of eighteenth-century New Spain cartography, as in the case of the maps drawn by Antonio de Villaseñor y Sánchez in the 1740s or those by Antonio Alzate in the 1770s (Rojas 2008; 1999; Antochiw 2000). However, we find references that allow us to identify this map within the cartographic tradition of this period through its use of conventional symbols. While neither scale mathematical coordinates appear, the map does contain directional reference elements such as a compass rose indicating the cardinal directions, a fleur-de-lis pointing north, a shining sun marking the east, and a “dim sun” to indicate the west. The buildings – painted in red – also follow the conventions used by military engineers, derived from the royal decrees of Philip V in 1718 for the acknowledgement of conquered territory and the benefits for the royal servants and their vassals (*Historia de la cartografía* n.d.: 32).

This mining complex began operating in the sixteenth century and then went into decline; it subsequently enjoyed a period of prosperity, reaching its peak production in the 1740s, when José Alejandro Bustamante Bustillo assumed responsibility for its operation. He later brought in his close friend Pedro Romero de Terreros, Count of Regla, as a shareholder (Velázquez 1976; Flores Clair 1997). Such partnerships were not unusual at the time; on the contrary, it was the best strategy to pool sufficient capital for silver extraction from the deposits in the region, which included two of the most productive mines, “La Joya” and “La Vizcaína.”

Certainly, mining production was not an easy enterprise, as it demanded a great deal of investment and required a large workforce for daily operations. Among some of the trades required were: “guardians, scrapers, watchmen, gatekeepers, blacksmiths, *cavallerizeros*, *cajones*, *malacateros*, *atecas*, captains, *barreteros*, laborers, *ademadores*, assistants, and various others, in which, depending on the prosperity or decline of the mines, the number of individuals of each category increased or decreased” (Bustamante, cited in Velázquez 1976: 341). Added to this were frequent failures in finding veins, as well as the arduous efforts required to drain water from the tunnels, a necessary step for exploitation. Upon Bustamante’s death in 1750, the vein of “La Vizcaína” was awarded to Romero de Terreros, who went on to become the wealthiest miner in New Spain. With his fortune, he owned several cattle and grain farms purchased from the Jesuits, acquired ships, made loans to the Spanish Crown, and secured three noble titles that gave his family “noble lineage” (Flores Clair 1997: 9). Romero de Terreros had undoubtedly found the ideal regional commercial network, concentrating in his circle of contacts the profits from the entire mining production process: the supply of inputs, ore extraction, silver refining, and transport to the ports.

Like Bustamante and Romero de Terreros, many figures in the colonial period invested their resources in mining, as this activity had become the primary economic engine through the extraction of precious metals. In this context, Mexico and Peru acquired special relevance, as they became the main silver-producing centers, supplying both the coinage – the well-known *de a ocho* pieces – and the jewelry of the European and New Spain nobility, as well as the sacred art that increasingly adorned Catholic churches across the Americas – in monstrances, chalices, ciboria, and so forth.

Through these processes, the Americas entered the global economy arena, as new geo-historical axes emerged through the creation of merchant shipping routes that linked them to Europe across the Atlantic and to Asia across the Pacific. The economic basis for these global connections was the production of manufactured goods from Eurasia and the extraction of precious metals from the Americas. Silver exports were the main contribution of the Americas to this emerging global economic circuit that began in the sixteenth-century. From Peru and New Spain, silver flowed to Europe and China via two transatlantic axes: the New Spain route, connecting Spain/

Europe to Veracruz-Mexico City-Acapulco; and the South American route, departing from Spain to Portobelo (Panama) and on to Callao (Peru), with extensions to Valparaíso and the Río de la Plata, eventually connecting Lima-Potosí-Buenos Aires (Bonialian and Hausberger 2018). The presence, exploitation, and circulation of silver were by no means a minor detail, as Bustamante himself wrote in his text 1748. *Representación echa al excelentísimo señor don Juan Francisco de Guemes, virrey de esta Nueva España por don José Alejandro de Bustamante, sobre la fundación de una compañía general de minas, para aumento de la real hacienda y alivio común de todo el reyno* (1748. Representations to the Most Excellent Don Juan Francisco de Güemes, Viceroy of New Spain, on the establishment of a general mining company for the increase of the royal treasury and the common good of the kingdom). Added to this, dire repercussions could occur if the miners decided to stop extraction and abandon their mines.

All merchants, farmers, and practitioners of other trades would lose out, for their warehouses and barns would be useless without the coin to buy from them. What could we give in return to those who bring us wine, linen, cloth, fabrics, and other necessary goods if we had no silver? [...] then, inevitably, trade would soon collapse, and the kingdom would be destroyed, as His Majesty would be deprived of the immeasurable increase [sic] of his royal fifths. (Bustamante, cited in Velázquez 1976: 337–338)

Bustamante's assertion seemed accurate: Between 1701 and 1810, Pachuca-Real del Monte produced 6 percent of all silver in New Spain, ranking as the seventh most productive district in the viceroyalty; and with the production between 1750–1770, the region experienced its greatest boom, as average production reached 116,000 marks per year between 1766–1775, despite the labor disputes at “La Vizcaína” (Navarrete 2021).

One notable aspect is that mining required abundant water resources for refining silver through the mercury amalgamation method, which reduced production costs while improving the quality and acceptance of American coins in global markets (Laris Pardo 2022). Thus, in order to supply the Pachuca-Real del Monte mining complex depicted in the map, the stream and its two tributaries were essential both for ore amalgamation processing of the extracted ore and for the subsistence of the settlement's population. Water was indispensable, but as it traversed the mining landscape, it also served as a channel for the disposal of mercury and other substances, polluting its waters and harming the local biodiversity, as shown in the image by the discharge flow emerging at the end of the aqueduct on the map's right side.

It is worth noting that the mercury amalgamation method for refining silver – crucial to the growth of mining in the Americas – was developed precisely in Pachuca by Bartolomé de Medina in 1553, and has been considered by some histori-

ans “an achievement of the Early Scientific Revolution” (Barrera Osorio 2006, cited in Laris Pardo 2022: 82). Mercury, commonly referred to as *azogue*, was used from the sixteenth century onward in New Spain and became increasingly widespread over time, so that by the eighteenth century it was a routine process for proto-entrepreneurs engaged in metal extraction across the Americas. For the workers, however, handling this chemical had severe mid- and long-term health consequences. Recent studies on the historical use of mercury from an environmental perspective reveal a series of effects that workers in metal processing plants suffered, as inhaling its highly toxic vapors caused mild to severe tremors, insomnia, headaches, cognitive impairment, mouth sores, and tooth loss, among other ailments (Laris Pardo 2022: 85–86). The impact was significant, as the process itself involved crushing the ore extracted from the mine – initially in mortars, later in mills – then washing it, and adding water, mercury, salt, copper sulfate, and iron filings to the mixture, known as *masa* (dough) or *torta* (cake). These “cakes” were kneaded in a large courtyard with a stone floor, hence the term “courtyard process” (Herrera 2021: 16).

The main moments of contact between the workers in these refining haciendas and the mercury were during the filling of the cake (*incorporo*) and its mixing (*repasso*). The *desazogamiento* stage, when the amalgam was placed in large bags and squeezed and beaten to remove the excess mercury, was the most critical for health. (Laris Pardo 2022: 85–86)

Through this procedure, silver of the highest possible purity was obtained, determining the excellent quality of the coins produced.

Besides the technical process and its health impacts, this method also had significant economic implications, as it was part of a commercial circuit that provided great benefits to the Spanish monarchy. Employing mercury meant miners had to pay for its importation, which was monopolized by the Spanish Crown, as it was primarily extracted from the mines of Almadén (Spain), Huancavelica (Peru), and, later, Idria (present-day Slovenia). The distribution route was as follows: “from Almadén the mercury went to New Spain, passing through Seville, then Cádiz, where it was shipped to Veracruz; from there it was sent to warehouses in Mexico City, from where it was distributed to the mining centers of New Spain” (Herrera 2021: 17).

The productive activities of New Spanish mining also encompassed social and cultural factors that must not be overlooked. The dispersed settlement depicted in the 1750 map reflects the dwellings of people living near the mine shafts and provides evidence of habitation amid the steep and difficult geography. Labor demand determined the inclusion of workers and their families in the area, forming a diverse combination of enslaved Indigenous, enslaved Africans, Indigenous laborers conscripted through hacienda *repartimiento*, free Indigenous *aboríes* (not subject to

servitude) (Navarrete 2021), as well as salaried mulatto or mestizo workers, together with Spanish owners. This created a multiethnic, multilingual, and culturally diverse community. When Italian traveler Gemelli Carreri visited the area's mines in 1610, he reported: "twelve thousand people earn their bread in those abysses" (Gemelli Carreri 1983, cited in Flores Clair 1997: 10), attributing the size of the group to the great silver boom at the time. Navarrete (2021) draws on three colonial sources to affirm that between 1754–1779 the population numbered about 14,000, declining to 10,000 in the early 1790s, reflecting the fluctuations of mining's productive cycles.

In this shared space, the multiracial and multicultural community fostered coexistence of different ways of life and facilitated various racial, economic, and cultural exchanges. However, sources never describe it as a space of well-being or a "good life," mainly because of the arduous and exhausting workdays, conceived in terms of profit for the owner and with minimal or no compensation for the workers. It is therefore not surprising that the first miners' "strike" took place in 1766 at the "La Vizcaína" mine, triggered when Romero de Terreros replaced payment in kind – i.e., in ore – with payment in cash. After a violent confrontation that left two officials dead and several workers imprisoned or banished, payment in kind was reinstated.

Conclusions: Extractivism and Neo-Extractivism

As we have seen, in the eighteenth century the geographic region that in pre-Hispanic times encompassed Mesoamerica was transformed through the exploitation of natural resources for the benefit of the colonial administrations of the Spanish and Portuguese crowns. Mining in particular became the most important economic activity of the time, since gold and silver were the currencies of global mercantile exchange. Unfortunately, as Bonialian and Hausberger (2018) note, the creation and expansion of a market from the Americas after the conquest confirms the multipolar character of an early globalization that had environmental consequences not always favorable to the regions that enriched the treasuries of European monarchies.

Mining extractivism has been characterized as one of the most profitable activities in capitalist terms, but also among the most destructive and environmentally damaging, with health risks not only for those who labor in the mines but also for populations living nearby. The historical trajectory revealed by the image analyzed here, through the social and productive evidence it provides of mining extraction, bears witness to this reality. The depletion of resources in mining regions, along with the damage inflicted by this activity on land, water, air, and biodiversity, has not changed over time – a reality that compels reflection on whether such practices should continue or should be changed for the sake of future generations.

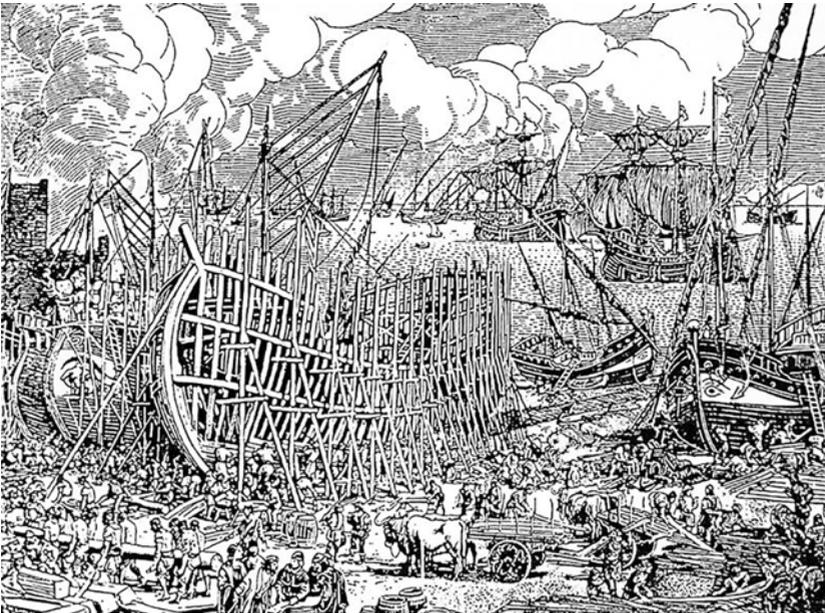
Translated by Luisa Raquel Ellermeier and revised by Omar Sierra Cháves.

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Shipyard

Rosa H. Yáñez Rosales



Shipyard in the colonial period, in Efrén Áviles, "Astilleros de Guayaquil" (n. d.). Source: Enciclopedia de Ecuador. https://www.encyclopediadeecuador.com/astilleros-de-guayaquil/#google_vignette. The authorship of this image has not been verified; it is included here for the purposes of illustration.

Shipyards, places where ships were built and maintained, proved indispensable for exploring the vast and promising maritime zones that emerged as knowledge of the “new world” unfolded before the eyes of the European conquerors. The image heading this text is highly evocative of what was transpired there. It resembles a snapshot of events in Guayaquil, Ecuador, on the Pacific Ocean, transporting us literally centuries back to reconstruct the intense activity: hundreds of workers, vast amounts of wood strewn across the ground, oxen hauling it in carts – wood that

would ultimately form the walls, holds, and cabins giving shape to ships. These vessels would later sail from some port, needing the capacity to traverse vast distances, withstand sea swells, winds, and nature's full fury during the journey.

The "South Sea," as the Pacific Ocean was then known, became a goal for Hernán Cortés himself, who began the construction of shipyards around 1522, that is, shortly after the conquest of Mexico-Tenochtitlan (1521). The endeavor expanded along Mesoamerica's western coasts, as, after Cortés, other soldiers and sailors followed, among them Viceroy Antonio de Mendoza. Its limits were those imposed by northern Indigenous groups and nature. To maintain commercial networks between Pacific ports and Asia, shipbuilding had to advance. This essay's image mirrors the reality of most American shipyards: relentless, even frantic activity. The subject itself has been only superficially explored. León Sáenz (2009) points to missing data and sources needed to clarify shipyards' economic role in the regional economies, furthermore there is a lack of comparative research.

For our part, we argue that these enterprises were yet another manifestation of what the Anthropocene imposed on America, the "new" continent, whose "discovery" overflowed the ambition and imagination of European rulers, sailors, soldiers, explorers, and so forth. We also deem it crucial to investigate the shipyards' relationship with local labor forces, the logistics of sourcing materials (rigging, sails, pitch, tar, etc.), and how substitutions were made when European components were unavailable. Missing is a perspective analyzing environmental changes near these sites. By establishing themselves in areas with suitable timber for shipbuilding, near rivers or currents where vessels could be launched and tested for leaks once completed, shipyards caused severe local transformations – now perhaps unimaginable five centuries later. These shipyards must have functioned as proto-industrial cities, given the workforce size, the very nature of ship construction, and the collective labor performed there.

This inquiry's starting points are, on one hand, images and engravings of shipyards built in both Atlantic and Pacific ports; and on the other, the *Visita hecha a don Antonio de Mendoza* (Inspection of Don Antonio de Mendoza) and the *Interrogatorio por el cual han de ser examinados los testigos que presente por su parte don Antonio de Mendoza* (Witness Examination Interrogatory), prepared in 1547 by inspector Francisco Tello de Sandoval (García Icazbalceta 1980). The interrogatory repeatedly addresses alleged abuses inflicted by the viceroy on Indigenous populations during preparations for two expeditions: that of Francisco Vázquez de Coronado, who journeyed overland in search of the legendary Cibola, and that of Cortes' lieutenant Pedro de Alvarado, the *Adelantado* (title for a frontier military governor), who was to depart from Puerto de Navidad, in what is now the state of Jalisco, with thirteen ships. As is known, Alvarado never undertook this voyage because Viceroy Mendoza summoned him to suppress the Cazcanes rebellion (1540–1542), during which Alvarado died. It is evident that Inspector Tello de Sandoval possessed information about events

preceding Vázquez de Coronado's expedition and the preparations for Alvarado's thwarted mission, as reflected in questions 122, 123, 130, and 131 of the interrogatory. Below are transcriptions of three of these questions:

122. Likewise, whether they know [etc.] that the ships which the said viceroy ordered built in the port of Navidad in the province of Colima were constructed at the said viceroy's expense, and that the Indians who worked on the said ships did so of their own will, as free persons, for their own benefit, as is customary in other such projects, and were well treated and paid to their satisfaction: let them state what they know.

[...]

130. Likewise, whether they know [etc.] that the people whom the said viceroy sent with Captain Francisco Vázquez Coronado to explore the new land of Cíbola were not the cause – nor could they have provided any reason – for the uprising of the Indians of Nueva Galicia, since from the towns of Ávalos, through which all the troops passed, to the stronghold [*peñol*] of Tepetistaque, where the first rebellion began, lies a distance of over forty leagues: let them state what they know.

131. Likewise, whether they know [etc.] that the fleet of the said viceroy and of the adelantado Don Pedro de Alvarado was even less the cause of the uprising in said Nueva Galicia, since from the port of Navidad – where they disembarked – to the said stronghold of Tepetistaque [...] lies a distance of over seventy leagues, and because when said fleet arrived at said port of Navidad, the Indians of said province were already in revolt. (101–102)

As can be seen, the inspector presents information he expects the witnesses to corroborate. Let us examine what occurred a few years earlier.

Although navigation on rivers and lakes was common and advanced in Mesoamerica, exploration northward, southward, and westward across the Pacific Ocean required ships robust and durable enough for open-sea voyages. In this context, a sixteenth-century shipyard was a place where working with timber of varying size, metal, and other materials posed immense challenges – mathematical, artisanal, and beyond – for those engaged in shipbuilding and navigation.

Hernán Cortés' ambition to explore the "South Sea" materialized in 1522 with the construction of the first shipyard at Zacatula, on the border of what are now the states of Guerrero and Michoacán, harnessing the Balsas River's course and its Pacific estuary. There, four vessels were built – two brigantines and two caravels – though due to setbacks, they were only completed by 1526 (Borah 1971: 3). Later, around 1528, Cortés established another shipyard in Tehuantepec, which offered more direct communication with the port of Veracruz, the arrival point for European materials and supplies. After Zacatula and Tehuantepec came Acapulco, which by 1532 had two seaworthy ships (6). Other shipyards followed: Panamá, Realejo (Nicaragua), and Iztapa (Guatemala). All correspond to the period when Cortés

prioritized infrastructure for maritime exploration, dispatching trusted captains or personally leading expeditions (Álvarez 1990: 7).

The thirteen ships originally intended for Alvarado's command were repurposed for various expeditions under Viceroy Mendoza's orders, patrolling the New Spain coastline and the Pacific's western reaches – with mixed fortunes. While navigational charts to the Philippine Islands had been established, the return route to New Spain's shores was only secured during the Legazpi-Urdaneta expedition (1564–1565). The construction of ships for this voyage is better documented, confirming they were built in Navidad and Melaque, within Navidad Bay. According to Álvarez, “The vessels outfitted for the transpacific expedition numbered four: ‘two large ships and two *pataches* [small escort ships],’ with capacities of 500 and 400 tons for the first two vessels, and 60 and 40 tons for the latter two” (9).

Muro (1970) and Borah (1971), drawing on primary sources, meticulously document the Pacific coast shipyards' early decades. What interests us here is the subtext – the environmental modifications and labor exploitation that emerge “between the lines,” as these were not explicit concerns in the authors' archival sources. For instance, mast construction for ships sailing from Navidad to the Philippine Islands required commissioning a certain Juan de la Isla to oversee timber felling in Tehuantepec, where the logs were then shaped into masts (Muro 1970: 175). Unfortunately, the height, species, number of trees felled, or duration of the task are not specified. However, the order given to De la Isla is dated August, and the work was completed two months later in November. In his research on Pacific shipyards, León Sáenz notes that wood was:

The single most critical element in ship construction, serving as the material for hulls, superstructures, and decks, as well as for masts and spars. Given wood's considerable weight, *shipyards were typically established near forested areas that provided suitable timber while minimizing transport costs.* All shipyards dedicated to vessel construction were strategically located for easy access to appropriate tropical hardwoods.

The most commonly used woods for hulls included cedar (*Cedrela*), oak (*Tabebuia rosea*), *guachipelí* (*Albizzia guachapele*), *maría* (*clophyllum* sp), canelo, mangrove, laurel, etc. For masts and spars, *maría* wood was identified as particularly suitable. (2009, 61, emphasis added)

The deforestation around shipyards is not hard to envision. These are stark scenes from the Anthropocene.

Another critical material for shipbuilding was rigging and heavy ropes. In the Americas, these were made from *henequén* fiber, derived from a type of maguey plant (*Agave sisalana*). While sails were typically cotton canvas, *henequén* was occasionally used. On the other hand, iron imported from Spain proved indispensable for fasten-

ing wood components (keels and hulls). Lastly, water pumps to combat leaks were manufactured in Pacific shipyards. According to León Sáenz, these employed local techniques proved to be highly effective (2009: 64).

The proliferation of shipyards along the Pacific coast invites hypotheses about their operations and underlying motivations. The first shipyard, Zacatula, was reportedly “deactivated” in 1531, according to Álvarez (1990: 7). Although the reasons remain unrecorded, one might reasonably assume local timber sources were exhausted. Similarly, the Navidad shipyard was largely abandoned after constructing vessels for the Legazpi-Urdaneta expedition (1565). While the Coatzacoalcos-Veracruz route became more practical for transporting European goods arriving in Veracruz – and Acapulco served as the terminal for the maritime route colloquially known as the *Nao de China* – the depletion of nearby forests likely necessitated relocating to areas with comparable resources. Likewise, the impact of sixteenth-century epidemics, which decimated Indigenous populations, may have prompted abandonment and resettlement. All this undeniably points to the Anthropocene.

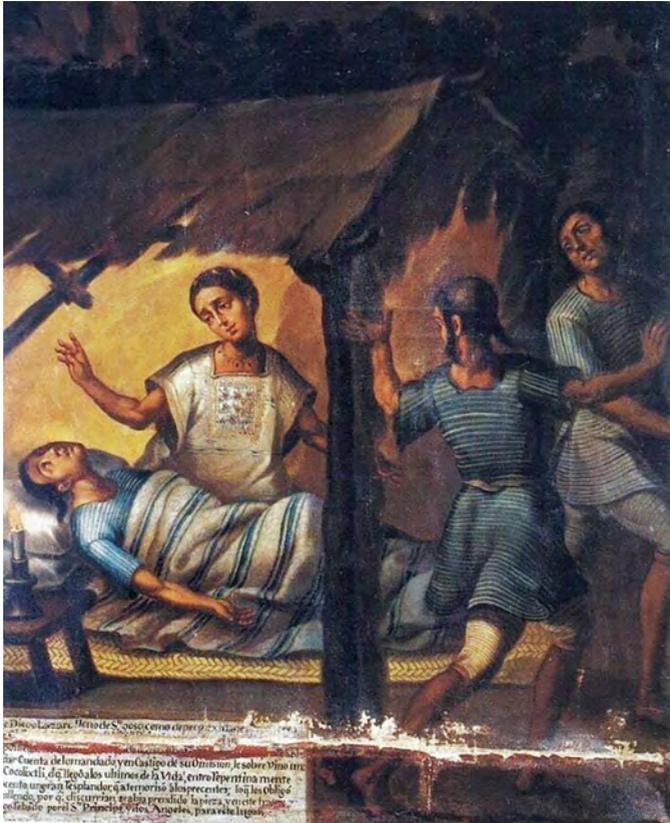
Translated by Omar Sierra Cháves and revised by Olaf Kaltmeier.

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Diego Lázaro Sick from *Cocolixtli*

Nelly Sigaut and Chantal Cramaussel



Diego Lázaro enfermo de cocolixtli, artist unknown (c. mid-eighteenth century).

Source: Sanctuary of San Miguel del Milagro, Tlaxcala, Mexico.

Epidemics brought from Europe by the Spanish conquistadors caused a catastrophic decline in the indigenous population. In the central highlands of New Spain, an estimated 90 percent of the population was reduced between 1521 and 1650. Dur-

ing the same period, many of the coastal areas were completely depopulated (Cook and Borah 1977; Livi Bacci 2005). The high density of the Indigenous population favored the rapid progression of epidemics, due to the lack of immunity. Those of the sixteenth century were particularly cruel, when the Indians first came into contact with diseases hitherto unknown in the New World. In the center of New Spain, the decline of the original population can be estimated thanks to tribute assessments: each town had to pay a tax in kind to the Spaniards, as they had done before under Mexica rule. However, when a new epidemic attacked their inhabitants, especially when it decimated the adult sector, the towns requested a reassessment, since the population decreased and could not remit the same amount of goods agreed upon before the catastrophe occurred.

Although the Indigenous population tended to rise again from the mid-seventeenth century onwards, epidemics continued to mark the demographic evolution of the entire American continent. Over time, the smallpox and measles that killed many adult Indians at the beginning of the sixteenth century became childhood diseases, as they already were in Europe. On the other hand, typhoid continued to deplete adults of all social strata (González Flores 2017). However, when comparing the number of deaths among the Indians and the other sectors of society, it is clear that the former were always more affected. Given that the native population was the majority, estimates must be made with the support of census data and baptism records, so as not to bias the analysis (Cramaussel 2021).

The painting analyzed below represents an Indigenous man suffering from *cocolixtli* (or *cocoliztli*). It is preserved in the church of San Miguel del Milagro in Tlaxcala, where the lordship that made an alliance with the Spaniards to free itself from the Mexica yoke was located, but it was certainly not spared from the violence of epidemic diseases of European origin.

Cocoliztli, a Nahuatl word-meaning “disease,” is often synonymous with “plague” or “pestilence,” a generic term also used by Europeans to describe epidemic diseases (Castillo Palma 2020). It was also used for typhus, which was also called *matlazáhuatl* (“net of spots” in Nahuatl, due to the red dots that covered the bodies of the sick). The same disease was called *tarbardillo* in Spain and South America, or “putrid fever” throughout the Hispanic world, due to the high temperatures that characterized it and the nauseating odor released by the infected. Nowadays it is called epidemic or human typhus to differentiate it from murine typhus (which is transmitted by rat fleas and has a low lethality) (Canales Guerrero 2017: 11–23). Typhus may have been the disease that affected Diego Lázaro de San Francisco, the Indigenous man who is the main character of the visual story that is discussed in this study.

Typhus was spread by the feces of body or head lice, when a person, by scratching the bite, introduced into their bloodstream the bacteria found in the excrement of an infected louse. The high fevers and muscular pains characteristic of this *cocoliztli* caused delirium and a prostration similar to that which Diego Lázaro seems to suf-

fer on the ex-voto. Typhus (which means fever, stupor or prostration in Greek) also causes muscular rigidity, indeed, the victim's right arm does not rest on the mat, it seems to remain stiff in the air. However, the small red spots typical of typhus are absent in the painting.

The Indigenous identity of the sick man is reflected in the copper tone of his dark skin, the short hair at the crown of his head and the locks that fall along his face, the striped cotton shirt, the *petate* (mat) on which he is lying and the simple hut. Beds, mattresses and sheets were introduced by the Spanish, whereas the Indians used blankets like the one covering the sick person in the painting. The predominant color is blue, a dye obtained from the indigo plant, which generated the wealth of southern New Spain and Central America but also, when exported to Europe, the misery of many European peasants who grew pastel, another plant that also dyed fabrics blue but was less profitable.

The identity of the characters as well as the narration of the event that takes place in this image were inspired by a well-known text entitled *Narration of the Miraculous Apparition Made by the Archangel St. Michael to Diego Lázaro of San Francisco*, written by the Jesuit Francisco de Florencia in 1690 (Báez 1979: 39). Diego Lázaro was a young parishioner from the mostly Indigenous town of San Bernabé, in the jurisdiction of Santa María Nativitas, now in the state of Tlaxcala. In 1631, when epidemics were still hitting the native Indian population with great intensity, Saint Michael appeared to Diego Lázaro – unnoticed by the others – while he was participating in a procession in honor of Saint Mark. The archangel ordered him to announce to the villagers that he would make a spring of miraculous water gush forth from a nearby ravine to cure illnesses. As Diego Lázaro did not comply with the order out of fear that he would not be believed – a frequent attitude in this type of story with humble characters, such as shepherds or peasant farmers in Europe, and natives in the New World, as in the case of the Virgin of Guadalupe and Juan Diego – the archangel punished him by making him sick with cocoliztli. Once again, in this pious legend, the divine origin attributed to diseases, especially epidemics, is evident.

As Diego Lázaro was in bed, in a very serious condition, Saint Michael appeared to him again with an intense light that illuminated the room. Those present thought the hut was on fire and ran out in great fear: this is the precise moment depicted in the painting. The intense brightness contrasts with the darkness in which the man lay sick, barely illuminated by a candle. This astonishing luminosity shows the fearsome power of God and the saints and symbolizes, according to Christian tradition, the divine order, in contrast to the darkness in which humanity finds itself because of its sins. The moment of flight from the scene was used by the painter to develop an intense gestural quality that contrasts with the prostrate body of Diego Lázaro: the arms open in an attitude of surprise and the bare feet move forward indicating movement. On one side of the mat, a beautiful woman, also surprised, looks at the sick man, whom she surely believes to be dead, as expressed by the sadness on her face. Her

braided hair adorned with colorful ribbons is wrapped around her head, supported by a long neck adorned with fine chains. She is dressed in a *huipil* (embroidered tunic of the native peoples of Mesoamerica) in which the borders on the sleeves and an embroidered square on the chest stand out, showing her indigenous identity.

According to the legend at the bottom of the painting, when those who had fled frightened by the light returned, they found Diego Lázaro healthy. He told them that the archangel had taken him to the place where he, with his golden staff topped by a cross, brought forth the water that had the miraculous virtue of restoring the sick to health (Báez 1979: 50).

The name of Saint Michael, *Quis ut Deus* (who like God), means that he is the one in charge of executing actions involving extraordinary power, for “no one can carry out what only God is capable of doing” (Voragine [Vol. 2] 1992: 620). Moreover, his duty in the angelic hierarchy is to watch over a community, and that is precisely what he did when he pointed out the place where the water that would heal the sick would flow. While performing this duty, he made many appearances that were recorded in the thirteenth century by Santiago de la Vorágine, in his well-known work *La leyenda dorada* (The Golden Legend). The author gives an account of the first apparition on Mount Gargano in the fourth century; of the second apparition to the bishop of Abranches in the year 710 and of the one in Rome, when Pope Gregory organized prayers for the health of the people attacked by an outbreak called inguinal plague. The intervention of St. Michael ended its punishment (Vorágine [Vol. 2] 1992: 622). These miraculous apparitions related to the bright, blinding light were recorded in 1684 by painter Cristóbal de Villalpando in the sacristy of Mexico’s cathedral (Sigaut 2004; 2014). The appearance of the archangel St. Michael in Mexico in 1631, a century after the miraculous appearance of the Virgin of Guadalupe in 1531, was celebrated as an exceptional event. Both cases pointed to Mexico as a “land of wonders”.

In 1645, the bishop of Puebla de los Ángeles, Juan de Palafox y Mendoza, recognized the site where the miracle illustrated in the painting analyzed here had occurred. The prelate ordered the construction of a temple with a chapel for the little well from which the holy water emanated, and promoted it as a place of pilgrimage, naming it San Miguel del Milagro. Even the most humble Indigenous people, such as Diego Lázaro de San Francisco, a poor *macehual* (manual laborer), could ask for this miracle. The name Diego with which he was baptized (Rodríguez-Miaja 2005: 361) recalls the apparition of Guadalupe; the name Lázaro, the miracle of the resurrection of Martha’s and Mary’s brother as narrated in the Gospel of John (11:1-43), although they were also the names of his father, Lázaro Diego. The name Francisco came from the founder of the religious order that evangelized a good part of the natives of New Spain, together with the Jesuits, the Augustinians and the Dominicans. It was possibly related to the sacristan duties that Lázaro Diego performed in the Franciscan convent near Nativitas, one of the first towns under the control of the

Franciscan missionaries in the sixteenth century, whose original name was Xochitécatl-Cacaxtla (Quintanal Salas 2012).

Water is a symbol of purification in the Christian tradition, it is used for baptism, to make the sign of the cross when entering the church and to ward off the devil. But sometimes, by divine intervention, as in this case, water is miraculous. Thus, many sanctuaries in Europe became pilgrimage sites, as happened in Tlaxcala where, every September 29, the church of San Miguel still attracts many devotees who hope to be relieved of all kinds of ailments.

In colonial times, sickness and death were part of everyday life. Many ailments accompanied by horrible pain were the bread and butter of the day. To alleviate the suffering, laudanum was used, which was a preparation based on opium, alcohol and peyote, to make those affected lose consciousness. On the other hand, life expectancy must have been around forty years, judging by the age at death sometimes specified in burial certificates from the end of the colonial era. Very few people reached half a century. Many children and adults died in their prime, so that diseases were the scourge that threatened the lives of all, even the apparently youngest and healthiest, as Diego Lázaro may have been before being chosen by San Miguel to indicate the place where the miraculous water would be found.

Typhus, which may have endangered Diego Lázaro's existence, was the most feared disease because it depleted the economically active population and left many children orphaned, as the latter were less susceptible to contracting it. Several typhus epidemics broke out in the eighteenth century; the one between 1736 and 1739 spread throughout New Spain, causing a significant demographic decline in the center of the viceroyalty. Between 1761 and 1764, another epidemic of the same nature spread to all directions, along with an epidemic of smallpox. Typhus spread slowly because it needs a vector (the louse), and it only spread rapidly among all villages in those regions where the population was denser, such as the central highlands, where San Miguel del Milagro is located. Like the other epidemics, typhus spread along the busy roads, but more slowly than the diseases that spread from man to man. For example, typhus took three years to reach the village of San Felipe El Real de Chihuahua, in the north of the viceroyalty, in 1761. Moreover, because of the dispersed pre-Hispanic settlement pattern and because colonial settlements were far apart, the incidence of typhus was generally lower in the northern part of New Spain, with the exception of mining centers, where workers were often crowded together. One of the characteristics of typhoid epidemics was also their duration: they could attack the same population for six months or more.

The Spanish and Portuguese, upon arriving in and settling the American continent that had been isolated from the rest of the world, unknowingly accelerated what has been called the "microbial unification" of the planet by spreading diseases that had been recurrently depleting the Asian and European populations for centuries.

Translated by Omar Sierra Cháves and revised by Luisa Raquel Ellermeier.

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Ex-voto of Lusiana Grande de Acxotlan

Nelly Sigaut and Chantal Cramaussel



Ex-voto of Lusiana Grande de Acxotlan to the Virgin of Sorrows and Saint Sebastian, artist unknown (c. 1761). Oil on canvas, 53.7 x 77 cm. Source: Franz Mayer Museum, Mexico City.

An *ex-voto* is a representation common in Mexican folk art, consisting of small drawings and paintings donated to churches as a thank you for a favor received or to commemorate a miracle perpetuated by a saint, a virgin or an angel. This *ex-voto* is preserved in the Franz Mayer Museum in Mexico City and is titled “Measles” in its catalog, although the inscription at the bottom of the image specifies that it was made to give thanks for the miraculous healing of a smallpox patient. In fact, there is no doubt that it was the latter disease, because the *ex-voto* is dated December 1761. The bishopric of Puebla, where San Pedro Cholula is located and where the person who was relieved resided, had been suffering the ravages of smallpox since August. This same epidemic spread throughout the viceroyalty of New Spain in the following

two years, and another was added, this time of *matlazáhuatl*, an illness that contemporary research determines as typhus or plague (Castillo Palma 2001: 463).

The smallpox outbreak of 1762–1763 devastated a large part of the population of New Spain, because the last epidemic of this nature dated back to 1748, though it is not known if it had also spread in the jurisdiction of Cholula. Smallpox produces life-long immunity, so that by 1762 at least everyone under the age of 23 was susceptible to it. It is likely that the two women caring for the patient in the *ex-voto* were older and could have cared for the sick woman because they had suffered from this disease in their childhood. It was unknown what caused smallpox, so this disease was attributed – as in the case of all other epidemics – to divine punishment. However, it was known that those who had survived this disease could no longer contract it again. This is the reason why men with scars in their faces left by smallpox were preferred for conscription in the army, because they could no longer get sick or spread a new epidemic, which could be fatal if it suddenly attacked many soldiers involved in a war.

Until its eradication in 1977, smallpox was the disease that killed the most people in the world. In Europe, in the eighteenth century, it was already endemic and infantile, but in the Americas, where the population had not been in contact with the virus before the arrival of the Spaniards, it still hit many adults, without discriminating the rich from the poor (Cramaussel, Carbajal and Magaña 2010). The adult Indigenous woman affected by smallpox in the *ex-voto* was part of the local nobility of San Pedro de Cholula: she belonged to the family called Grande de Acxotlan, which was linked to Spaniards and boasted purity of blood, as its members had always been linked to *caciques*. (Castillo Palma 2001: 416)

In New Spain, the appearance of smallpox epidemics was recurrent: from the moment there were enough people without immunity, it re-emerged, although the variants of the virus before the Porfiriato period are not known. Even more lethal than smallpox in 1761 was the next epidemic in 1780. Finally, a few years later, the practice of variolation, which consisted of inoculating infected ground scabs or inhaling them through the nose, began to spread, in order to create immunity. Due to this preventive measure, smallpox caused fewer victims in the dioceses of Michoacán and Durango, where governors and enlightened bishops spread it and prevented the next epidemic (between 1796–1798) from wreaking havoc, as it did at the center of New Spain (Camacho Alberto 2010: 93–103; Cramaussel 2010: 130–150).

In 1804 the vaccine was introduced in the Spanish empire, but its administration was deficient throughout the nineteenth century. Many people, including doctors, considered this measure ungodly, because it counteracted the divine punishment that epidemics signified, in addition to the fact that the risks of infection were also great. Most of the population did not want to be vaccinated nor did they allow their children to be vaccinated. There was a new smallpox epidemic in 1814–15, then in 1830–31 and 1840–41. Even in independent Mexico, the vaccine was frequently ad-

ministered when a new epidemic began, but many times it was too late. On the other hand, vaccination was more frequent in the cities and larger settlements, so that the rural areas with a mostly indigenous population were the most affected and represented a breeding ground for a new epidemic to appear.

Smallpox is very contagious because it is spread by droplets when talking, coughing or sneezing or by contact with the scabs left by the pustules of the sick when they dry. These can fly through the air and remain on clothing. Scabs preserved in the latter way were one of the frequent means of smallpox propagation, because fabrics in colonial times were very expensive and therefore they were washed infrequently so that they did not lose their luster. Often, even the clothing of the deceased, which contained the lethal virus, was not burned, but was sold or donated to those most in need. Until the mid-nineteenth century, the existence of viruses and bacteria was unknown and no one could imagine that smallpox could be spread even years after the death of the clothing's owner.

The ex-voto was commissioned by Mrs. Luisiana Santa María Grande de Acxotlan, in gratitude for having recovered her health. A declaration from 1768, very close to the elaboration of the ex-voto, informs us that the Grande de Acxotlan family descended from Don Manuel Félix Grande Baptista de Santa María y Acxotlan and Doña Michaela Aparicio, "pure Indians of notorious nobility" (Castillo Palma 2011: 242). Among the various indications that the patient belonged to the indigenous nobility is an elaborate screen at the foot of the bed, which is covered by a precious coverlet of rich fabric, with skirting boards, sheets and pillows of fine cotton. The very nightgown that lady Luisiana wears is represented in fine fabric with lace cuffs.

Lady Luisiana María managed to survive, appealing to the intermediation of Our Lady of Sorrows and Saint Sebastian, who are the central figures of the ex-voto here analyzed. The prominent place occupied by both images, in addition to their larger size, highlights their sacred character and their significance in the scene. The Virgin and the saint visually subordinate the afflicted ones – due to illness or grief – to the sides of the painting.

The image of the sorrowful mother, separated from the key moment of Christ's passion – the crucifixion – had been depicted since the end of the Middle Ages. But it was in the sixteenth century when the Virgin's emotions provoked by the death of her son were represented with incredibly dramatic nuances (Schenone 2008). The Virgin alone, with her eyes filled with tears and her hands clasped in front of her chest, achieved what had been forged for centuries: a "suggestive, persuasive and dissuasive image". It was in the post-Tridentine period – that is, after 1563 at the end of the Council of Trent – that these visual strategies reached their apogee: "apotheosis of images arising from emotion to provoke emotion, which need to be looked at, contemplated, venerated, [...] which exude and inspire pity, thrill in sublime ecstasies and yearnings for martyrdom" (Ledda 2015: 59).

The reaction against Lutheranism produced a boom in miraculous images and the exaltation of their function (Scavizzi 1992: 2). In relation to images, the declarations of the Second Council of Nicaea (787) were affirmed at Trent, hence between the years 1560–1570 a hyperactive iconophilia developed that would characterize Catholic theological production. One of the arguments in writings of this nature is that a humanity that perceives through the senses and not only through the mind needs religious symbols in its ascent to God (Nichols 2007: 53–54). It is worth mentioning that the famous XXV session of the Council of Trent, held between December 2 and 4, 1563, “built a true wall against the theses of the Protestant reformers, strongly reaffirming the validity of the recourse to devotional images and the intercession of the saints.” After Trent, the decrees of Urbano VIII published in 1642, despite giving rise to modern sanctity with a new institutional juridical order, reaffirmed the importance of miracles as well as the heroic virtues of those who followed the process of sanctity (Sodano, 2000: 56). This reaffirmation of the supernatural fact, of the miracle as an intervention to save lives and souls, is clearly shown in this ex-voto, in which the recovery of health after a highly lethal disease is expressed in gratitude.

The two miraculous images in this story, the Virgin of Sorrows and San Sebastián, are still worshiped by followers in the temple of San Pedro, in Cholula, Puebla. A glittering dagger is stuck in the Virgin’s chest piercing the elegant red suit with lace cuffs and collar covered by a blue mantle. Only her face, flooded with tears, reflects her suffering. For his part, Saint Sebastian reminds us of the martyrdom caused by smallpox to the indigenous noblewoman who was on the verge of losing her life. The pious fable, written at the end of the fifth century, tells the story of this Roman soldier who refused to die (Schenone 1992). Saint Sebastian was venerated in Europe because he was invoked as a protector against plagues, a protectorate that spread in the New World. It is precisely the wounds of the arrows that refer to his martyrdom and his condition as an anti-pestilence, derived from the ancient representation of the plague as darts thrown by an angry god, a symbol that was incorporated into Christian iconography (Schenone 1992 [Vol. 2]: 716).

In addition to the pious images that surround the sick woman, on the wall above her bed and hanging from a humble nail, Doña Luisiana had placed a Holy Face. The image of the living Christ, crowned with thorns and with blood running down his forehead, nevertheless maintains an enigmatic smile. For centuries, popular tradition has considered that the portrait of Christ is the one that was stamped on a veil when Veronica helped him on the way to the cross. This legendary version is due to Veronica’s personification of *vera icona*, that is, a true portrait of Christ, very popular since the end of the Middle Ages (Réau 1988 [Vol. 2]: 19). Another legend tells that King Abgar invited Jesus to visit his kingdom, but he did not accept the invitation and instead sent the king a cloth that he placed on his face, which was imprinted on the cloth (Réau 1988 [Vol. 2]: 17–18; Schenone 1998: 27).

The condition of the patient is marked by the woman on the left of the painting, fair-skinned, covered with a shawl from Hueyapan, Puebla, and a fine cotton shirt. She offers the sick woman a tea, a common remedy at the time, as a cure for all diseases. Although they did not relieve the sick, teas helped to rehydrate those suffering from high fevers, as in the case of smallpox. In any case, before variolation and the vaccine, there was nothing doctors could do about this disease (Cramaussel et al. 2010, Vol. 1). It is possible that the woman who tends to the patient and appears at her right is trying to relieve the burning of the skin with some liquid that she pours with a small swab. Dark-skinned, she is dressed in a fine shirt, chinesque-style skirt typical of eighteenth-century fashions that had adopted textile designs from the East, with a striped shawl crossed on her chest and a *chiqueador* (slices of herbs or paper used as a home remedy for headaches) placed on her temple.

The woman sitting on the floor is probably the daughter of the patient, because she is crying with sadness. On the right are the only three men in the group. One of them, possibly the husband of Doña Luisiana, is represented as a white man, elegantly dressed, powerless in the face of the evil that overwhelmed his spouse. The white complexion of the lord of the house reflects his Spanish identity. At her side, we see a young mestizo man who is no doubt her afflicted son, which can be inferred from the darker color of his skin and the abundant shedding tears. Behind them a third man sitting with a feather in his hand. This man is possibly a notary summoned to receive the testamentary dispositions of the sick woman, to arrange for the rest of her soul and the distribution of her earthly goods. His gaze fixed on the paper resting on the small board indicates his affective distance from the event. Neither the husband nor the children are next to their mother; it is likely that they keep their distance to avoid getting infected.

Lady Luisiana's prayers saved her life; however, on her face and arms we see the pustules of smallpox that will leave permanent scars all over her body, although she was able to escape blindness, pneumonia or some other serious consequences of the terrible disease. The fact that the only victim of smallpox is Indigenous, and that her mestizo children and her Spanish husband were saved, reminds us of the relative immunity to smallpox enjoyed by the descendants of Europeans. In the eighteenth-century smallpox was still more lethal to Indigenous Americans than to Europeans.

Even though the smallpox virus was introduced by the Spanish before they could measure the consequences of this scourge in the New World, it was also from the peninsula that the vaccine against this disease spread to the Spanish colonies, starting in 1804, saving millions of lives on the planet.

Translated by Omar Sierra Cháves and revised by Luisa Raquel Ellermeier.

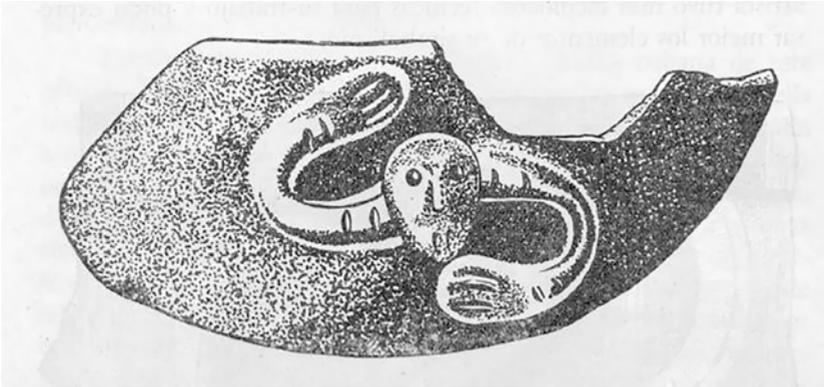
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Visual Representations in the Caribbean in the Colonial Period

Taino Deity Hurakán

Eleonora Rohland



Taino deity Hurakán, on a ceramic fragment from Cuba. Source: Fernando Ortiz, *El huracán: Su mitología y sus símbolos* (1947).

At first sight of the above image, the reader may wonder what on earth the author was thinking, including such a strange picture in a volume of images supposed to visually represent the Anthropocene. True, its “anthropocene-ness” is not immediately obvious, so let me explain. And bear with me, the Anthropocene will enter the picture, figuratively speaking, in good time. The image in question is an engraving on a ceramic shard of Cuban origin. The face and the two S-shaped arms pointing in front of and behind the head of the figure are a depiction of the Taíno deity Hurakán. The Taíno were one of the nations (another major group were the Caribs) who originally inhabited the Caribbean archipelago before European contact in 1492, after which they succumbed in large parts to European diseases and violence (Anderson-Córdova 2017). According to Taíno mythology, Hurakán was a malevolent demon who was responsible for the creation of the Caribbean archipelago. By breaking off parts of the mainland coastline of the Gulf of Mexico and scattering this “rubble” into the sea, Hurakán had created the Antillean islands (Pérez 2001: 17). We know that the figure on the ceramic shard in fact is Hurakán due to Cuban ethnologist Fernando Ortiz’s 1947 study *El huracán: Su mitología y sus símbolos*. In it, the researcher

compared the image on the shard with other Taíno symbols connected with meteorological occurrences, such as tornadoes and waterspouts, and concluded that this was Hurakán, “dancing the dance of the hurricane” (1947: 28–31).

Despite its apparent simplicity, this image is remarkable. The rotation imitated by the figure’s arms indicates that the Taíno had knowledge of the fact that in the northern hemisphere, or at least in the Atlantic basin, hurricanes rotate counterclockwise. This is due to the so-called Coriolis effect which was only discovered and mathematically described by European scientists (namely Gaspard-Gustave de Coriolis) at the beginning of the nineteenth century. Through a careful natural observation the Taíno apparently had knowledge of at least the direction of the circulation of a hurricane vortex. The image also eerily resembles the universal symbol for hurricanes that is in use today in order to warn people of these kinds of storms on traffic signs of evacuation routes. “Eerily,” because the circle and the two s-shaped bows emanating from it are the simplified depictions of the hurricane vortex as viewed from space. As hurricane vortexes can measure several hundred kilometers in diameter, there is no way to discern their shape by naked-eye observation from the ground. It therefore remains a mystery how the Taínos intuited the shape of tropical storms without the bird’s-eye perspective of satellites. Likely, by comparison with smaller-scale whirlwind and waterspout phenomena as mentioned in the research of Fernando Ortiz. I have not been able to find out whether there is a direct connection between the Taíno depiction of Hurakán and the modern hurricane symbol. What becomes evident, however, from this similarity is that the Taíno found a kind of archetypal sign language that conveys its message to the present. I will get back to this point a little further below.

Focusing on the historical period of initial European contact and examining how Europeans first encountered and documented these severe storms, one may turn to early reports and chronicles from the so-called Indies. For instance, Dominican friar Bartolomé de las Casas’s *Historia de las Indias* (1575) recounts the second hurricane experienced by the Spaniards on the island of Hispaniola in October 1495 at La Isabela. According to his account, four ships had been lost in the port of La Isabela by “a great tempest which the Indians in their language call huracán, and which we now all call huracanes, which we have, at sea or on the ground, almost all of us experienced” (De las Casas [1575] 1875, vol. 2: 114–115). In other words, while the Spanish knew violent storms from their Mediterranean and Atlantic coasts, nothing had quite prepared them for hurricanes in the Caribbean. Although Aristotelian meteorology, the background of Spanish knowledge for weather phenomena of the early sixteenth century, had a variety of terms for small-scale, whirlwind-like occurrences, it lacked terminology for large-scale events such as hurricanes. It is this void of terminology which introduced the Taíno term *huracán* not only to the Spanish but also to the Portuguese (*furacão*), English (hurricane), French (*ouragan*), and even German (*Orkan*) languages (Rohland 2019: 20–24).

Gonzalo Fernández de Oviedo y Valdés, appointed royal “chronicler of the Indies” in 1532 and a contemporary of De las Casas, provided another early account of hurricanes affecting Hispaniola in 1508 and 1509. He noted that “in the language of this island [hurricane] in fact means very excessive storm or tempest; for it is nothing else but a great wind and great and excessive rain, all together, or each of these things by itself” (Fernández de Oviedo y Valdés [1535] 1851, vol. 1, book 6, chap. 3: 167). A little further below, Oviedo described the characteristic, changing wind pattern that observers on the ground may experience when hurricanes pass: “after some time the wind changed to the opposite, suddenly, and with no less impetus and fury. And the south [wind] was as strong as the north [wind] had been, and it returned in spite of itself, running ashore some boats in port” (167). These few early Spanish accounts make clear how strongly Europeans relied on Indigenous knowledge to orient themselves in the new and unfamiliar climate and environment of the Caribbean islands. An account by the French Dominican friar Jean-Baptiste du Tertre (1667) corroborates this dependence, stating that some of the settlers

believe that the savages notice it [the coming of a hurricane] a long time in advance & that they are warned by their Rioches or Maboyas; so much so that since these Islands were settled, there has hardly been a hurricane which the savages did not predict. For me, I believe these are pure fables; [...] salty rainwater is an infallible prognostic for [hurricanes]. (vol. 2: 71)

This paragraph shows how much colonists in the Caribbean relied on Indigenous knowledge about hurricanes even well into the seventeenth century. It also shows, however, that religious and cultural difference (and the feeling of superiority, expressed by the condescending term “savages” [*sauvages*]) prevented the transfer of knowledge at least in Du Tertre’s case. It seems obvious that having such sophisticated knowledge about the characteristics and approach of these storms would give people on the ground the advantage of being able to prepare and protect themselves and their belongings from such a disruptive extreme event.

If we follow the development of European “hurricane knowledge” (Rohland 2019: 19–27) throughout the colonial period, we become aware of the amount of time it took colonials on the ground and the *république des lettres*, the scientists in the respective European metropolises, to learn about topics we take for granted at present, such as the seasonality of hurricanes (June to November), the fact that there are years or seasons with few or many hurricanes (strongly dependent on ENSO cycles), and the fact that hurricanes move forward on a “path” and thus are to be counted as one storm and not several that occur in different places (Rohland 2019; Schwartz 2015; Mulcahy 2006; Udías 1996). The first viable hurricane forecasts – after those we just mentioned, made by the Taíno for the French settlers – issued several hours or days in advance only came about in 1870. They were produced by the Cuban Jesuit Benito

Viñes, based on meticulous observation of cloud formation and of the environment, as well as on mathematical calculations (Udías 1996; Viñes 1878; 1895). In other words, throughout the colonial period (and in fact to the present), the only option inhabitants of the Caribbean had with regard to the hazard of hurricanes was to adapt to them as best they could, since mitigation of these storms has never been an option, as opposed to for example, floods or fire. And while on the North American mainland mass evacuation has become an option with the advent of hurricane forecasts and cars, this is no viable means of protection for the inhabitants of islands. Hurricane experience has thus been constant throughout the three hundred years of this epoch, for Indigenous and colonial subjects alike.

There is, however, one glaring historical strand that needs to be taken up and interwoven in this story before I make the connection to the Anthropocene. The history of enslaved Africans within the colonial Caribbean plantation economy demonstrates that severe climatic events, such as hurricanes, had the potential to disrupt not only the environment but also the highly unequal social structures that characterized the colonial “sugar islands.” Granted, none of this is directly visible in the Taíno engraving. However, through the Indigenous environmental knowledge that is encapsulated in the image we not only get to the point of contact between Taíno hurricane knowledge and its transfer to Europeans, but also to the moment where this knowledge was communicated to enslaved Africans, who, from the late-seventeenth century onwards, usually constituted the majority populations on the Caribbean sugar-producing islands (Klein and Vinson 2007).

From protestant minister Charles de Rochefort, who was stationed on the island of Tobago in the 1640s, we learn that while some inhabitants of the island would leave their houses in order not to be crushed by falling debris and that they would hide in “caves and crevices,” others “retired to little huts which the slaves had built after the model of the Caribs since experience had shown that these small and roundly shaped cottages with no other opening than a door and rafters that touch the ground were usually spared.” Conversely, “more elevated houses,” presumably built by the colonists, were mostly destroyed or badly damaged (De Rochefort 1658: 246). De Rochefort thus provides us with another, hurricane-relevant facet of Indigenous and African collaboration known from the history of marronage and building quilombos (Helg 2019; Bledsoe 2017). Moreover, it shows that enslaved Africans apparently had less cultural inhibitions against adopting Indigenous knowledge in order to protect themselves from these violent storms than Europeans. This is corroborated by reports which describe similar hurricane-safe features of Indigenous and slave dwellings for St. Kitts and Jamaica (Nelson 2016).

Even without hurricanes as a threat to colonial social order, on Caribbean islands whose numerically small, white colonial elites violently coerced a majority enslaved African population into excruciating labor on sugar plantations, were characterized

by the constant white fear of slave uprisings (Mulcahy 2006). The fact that hurricanes were capable of destroying large-scale infrastructure such as military defense structures and armaments increased this white fear of losing control over the enslaved population and thus of undermining colonial security. However, apparently this specter of the – from the white planter’s perspective – combined disaster of a hurricane and slave uprising was never realized (Mulcahy 2006). Nevertheless, the mere existence of this fear is testimony of the extreme social and political vulnerability of slave societies towards extreme climatic events such as hurricanes.

Going back to the Taíno deity Hurakán and the previously noted resemblance between historical, Indigenous representations and the modern hurricane symbol, it is noteworthy that today’s satellite imagery of the hurricane cloud-vortex has become widely recognized as a visual metaphor for the complex phenomenon of climate change or the climate crisis in the Anthropocene era. That is, anthropogenic climate change may increase the frequency, and, most importantly, the strength of hurricanes, thus making them one of the most destructive extreme events of the poly-crisis era of the Anthropocene (Mann and Emanuel 2006; Mann 2024). What comes into view, then, by laying these three images – the Hurakán engraving, the modern hurricane symbol, and the hurricane-vortex-from-space – before our mental eye (even if only the first of these is actually in the chapter), is a sort of hurricane experience timeseries, or, even more science fictionesque, hurricanes as a time-travelling device that may allow us to connect hurricanes of the colonial Caribbean more clearly with the Anthropocene of the present.

To include not only the temporal but also the spatial aspect of human realities, Gabrielle Hecht, historian of Africa, has suggested the term “interscalar vehicle” to capture the ability of empirical objects to bridge the temporal and spatial scales of Anthropocene histories (2018: 115; Sheller and Rhiney 2026). Hecht, in her example of uranium-mining in Gabon, uses uranium as an interscalar vehicle, to connect the French pre- and post-colonial history of the mining context in Gabon with the Anthropocene “as an apotheosis of waste” (111). Hecht’s aim with this focal device is to hold “the planet and a place on the planet on the same analytic plane” in order to understand and uncover part of the “African Anthropocene” (112). I will hence borrow Hecht’s concept and see whether it helps us visualize the connection between hurricanes of the colonial Caribbean with hurricanes of the Caribbean Anthropocene.

Hurricanes as an interscalar vehicle allow us to connect the comparatively deep-time hurricane knowledge of the Taíno, captured in the image discussed in this chapter, with the relatively recent genealogy of European or western knowledge and science of tropical meteorology (in which hurricanes are included) and climate change research. Significantly, and in a somewhat circular movement, climate scientists have recently become interested in Indigenous environmental knowledge not least to extend the time series of climatic extreme events of the past. Hurricanes as interscalar vehicles also spatially connect the colonial and post-colonial

Caribbean with Europe in the context of the exchange of hurricane knowledge and science and the evolving question of how to protect lives and property against these violent storms.

However, the anthropocenic aspect of the colonial period that comes into view most starkly when focusing our interscalar vehicle not so much on the colonial period itself, but rather on the hurricane seasons of the twenty-first century, is the ability of hurricanes to pry open layers of time (or *Zeitschichten*) (Koselleck 2000). By so doing, they not only point back to previous hurricane events and their direct societal experience but also to historical processes wholly unrelated to hurricanes which nevertheless increased the social, political and/or geographical vulnerability of Caribbean societies towards hurricanes, such as the enslavement of African and Indigenous people. The histories of the slow societal and environmental violence of racial slavery and the colonial Caribbean plantation economy resurface in what Mimi Sheller has called the “coloniality of climate change,” i.e. a climate that has been changed by the industrialized parts of “humanity.” An industrialization that was only possible due to the profits reaped from exploiting colonies such as the Caribbean islands and their forcefully displaced and enslaved populations (2020: 8). And ironically, this anthropogenically-changed climate now produces hurricanes strengthened by the warming temperatures of the planet that affect these geographically and societally vulnerable islands adversely (Sheller 2020; Sheller and Rhiney 2026; Rhiney 2015; 2020; Bonilla 2015; Bonilla and LeBrón 2021).

In summary, by examining the Taíno deity Hurakán as an archetypal representation of tropical storms persisting into modern times, I have outlined the symbolic, linguistic, and scientific continuities of Indigenous hurricane knowledge from the colonial era through to the Anthropocene. The engraving of Hurakán has also brought into focus the invisible but underlying history of Indigenous-African relations with regard to adaptation to hurricanes during the colonial period. And lastly, using hurricanes as an interscalar vehicle has allowed us to pull the strands of colonial Caribbean hurricane history to the present-day hurricane events of the Anthropocene. Which, as we may learn from the space-and-time travel on our interscalar vehicle, cannot be understood properly without the historical depth of that colonial history.

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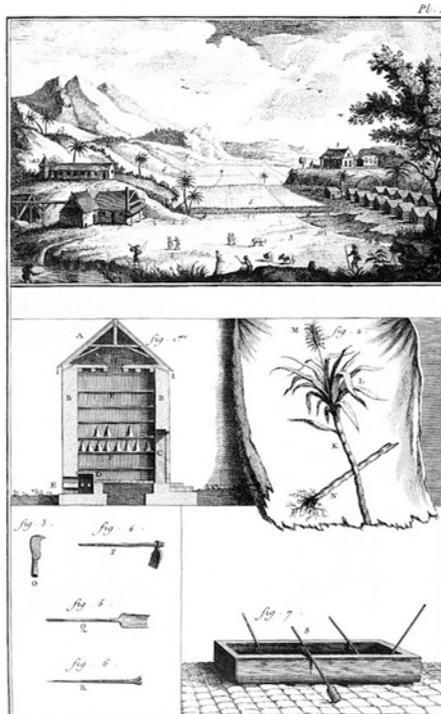
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Sugar

Oliver Gleich



Jacques Renaud Benard (“Benard fecit”), “Sucrerie,” en *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, edited by Denis Diderot and Jean Le Rond d’Alembert (1751–1772). Vol 23: Agriculture. Source: Bibliothèque national de France.

During the eighteenth century, the French colony of Saint-Domingue, which gained its independence in 1804 under the name Haiti, became the most important plantation economy and the most important producer of sugar and coffee in

the Western world. This economic success was due to the exploitation of the labor of approximately half a million enslaved Africans, massive interventions in the existing tropical ecosystems, and a systematic, sometimes excessive use of the available soils.

The arrival of the Europeans in the Caribbean was associated with a transformation of the landscapes and biotopes, the most visible features of which were the progressive retreat of the tropical forests and the introduction of numerous new plant and animal species. Colonial land-use transformation meant deforestation, but this occurred over the course of several centuries. Although it reached a peak in coastal regions of Saint-Domingue as early as the eighteenth century, it was only in the nineteenth and twentieth centuries that deforestation could be observed on a nationwide scale, when, after Haiti's independence, dyewood and other precious wood became a major export commodity and firewood became the most important source of energy for a growing population.

The topoi of "untouched nature", "primeval forests", and their Indigenous inhabitants who lived in harmony with nature were often invoked in contemporary sources and idealized by modern authors. However, environmental historians have made it clear that interventions in the landscape usually begin with the emergence of interaction between humans and nature. (Radkau 1994: 12) Indigenous peoples have transformed flora according to their own ideas, contributed to the spread of individual species during their migrations, utilized natural resources for technical purposes (Keoke and Porterfield 2002), and used the soils according to their needs, although the logic of soil exploitation of non-European ethnic groups was certainly different from that of European colonizers and settlers.

The economic development and environmental transformation of Saint-Domingue depended not only on available capital and consumer demand, but also on demographic factors, insofar as the colonies had to be settled and the plantation fields cultivated. During the sixteenth century, the Indigenous population of had largely been exterminated, although studies of genetic factors indicate a surviving Afro-Indigenous cluster of resistance in the island's southeastern mountains.

Between 1681 and 1789, the white population rose from around 4,000 to 40,000, while the number of enslaved Africans increased from around 2,000 to 500,000 during the same period. In addition, a class of free people of color emerged, whose numerical strength corresponded to that of the whites (Glied 2011: 62; Humboldt 1826/II: 384–85; Lindskog 1998). Spatial development and use depended largely on the peculiarities of the plantation economy, migration patterns, and colonial forms of sociability. The plantations of Saint-Domingue were export-oriented and consisted of numerous, barely interconnected production enclaves, each of which was oriented towards the nearest port. Neither the sugar nor the coffee plantations needed their neighbors to exist, and the often-unclear boundaries of the land concessions that served as their basis led to increased competition for land and conflicts over land

and water. After the loss of Quebec and Louisiana following the Seven Years' War, most of the available capital of French colonial investors was concentrated in Saint-Domingue, which led to a significant increase in land concessions in the west and south of the colony and, in particular, to an accelerated advance of the coffee frontier into the mountainous interior. Since the periods of peace in the hegemonic struggle between England and France were short, with armed conflict between these powers regularly spilling over into the Caribbean, French plantation owners came under massive pressure to make high profits as quickly as possible, and in doing so, they tacitly accepted the physical degradation of their slaves as well as the overuse of the soil. Nevertheless, some long-established landowners followed a strategy of careful management of their plantations and their soils. However, these faced increasing competition from speculators who sought to take advantage of interwar booms in the colonial goods market, only to then leave the colony, indifferent to the preservation of its ecological substance (Gleich 2011: 143–208).

But it was not only the Europeans who reshaped the Caribbean landscape. Enslaved Africans often received gardens for self-sufficiency, in which they applied cultivation practices from their territories of origin. Since free Blacks often converted the plantations completely into gardens after their successful revolution of 1791–1803, some historians have seen in them a *brecha campesina* [peasants' breach] into the white world of the plantations (Łepkowski 1969). In fact, black counter-worlds with their own ideas about the use of nature emerged before 1791. Enslaved Africans brought with them to the Caribbean knowledge of medicinal plants (Weaver 2002); and nature, understood to be endowed with a soul, played a role of its own in African and Afro-Caribbean religions such as Vaudou. At the center of Vaudou cult sites (*houmfo*) was a magical tree, which was interpreted as a place of retreat for deities between Vaudou rituals; in particular, the vegetation god Loco, patron of healers (*docteurs-feuilles*, "leaf doctors"), was said to have a special affinity for trees. Before cutting down a tree, a woodcutter would warn the spirit living there and give it a chance to escape (Métraux 1968: 70, 80, 94, 137). According to this logic, use of the land had to incorporate the inherent magic of the forces of nature; certain parts of the vegetation were inviolable.

The Maroon communities in the mountainous southeastern part of the colony (Maniel, Bahoruco) tried to survive with a precarious subsistence economy that defined itself early on as "anti-plantation." As the colonial army was unable to defeat these communities, the colonial government was forced to grant them autonomy by treaty shortly before the revolution (Debbasch 1973). Thus, an alternative African-Creole counter-model of land use was already present in embryonic form during the colonial period, and would be used by the rural population as the basis for its own agriculture after Haiti's independence in 1804. Like that of the Maroons, this counter-model was in constant conflict with the European-influenced land use model perpetuated by the Haitian elites; it may thus be seen as an expression of

the struggle between an elitist-Creole and a popular, African *bossal* culture, which continues to this day (Barthélémy 1989).

Land: Appropriation and Use

Since Saint-Domingue had few natural resources, its soil was the real source of its wealth. The colony's productivity depended on the fertility and extent of the cultivable land. In order to use the land over a longer period, water rights in addition to land rights had to be regulated, and measures had to be taken against erosion and to maintain the fertility of the soil. A remodeling of the space presupposed a "reclamation" through deforestation and infrastructural development (Gliech 2011: 59–65).

The appropriation of the Saint-Domingue's soil followed a different logic at each stage of the colonial history. The first French settlers were corsairs, adventurers, and religious refugees who took possession of the land they had opened by the "law of the axe" "or squatter's rights" (Vignols 1929: 101), a principle of land acquisition that was accepted by the first governors of the colony. Since the first generations of settlers often had no legitimate descendants due to the shortage of women among them, their goods reverted to the crown after their death. Ship's doctor André Minguet, who had earned special merit in the corsair attack on Cartagena de Indias (1697), received the municipalities of Dondon and Marmelade in northern Saint-Domingue from Governor Ducasse as a reward, without defining the boundaries of this concession in the then undeveloped terrain (Hilliard d'Auberteuil 1776: 92). After the dissolution of the West Indian companies, whose colonization efforts had failed, the governors and intendants of Saint-Domingue gained the privilege of granting land concessions. However, what a concession actually meant was not clearly defined (Baguet 1905: 26–27; Richard 1951). In the early days of the colony, this was not of much concern, since the few settlers were widely scattered and land conflicts rarely occurred. The early concessions could cover relatively large areas without their borders being precisely drawn, especially given that they had not yet been accurately surveyed. This circumstance made it easier to correct or withdraw land rights (Moreau de Saint-Méry 1797, vol. 1: 251; Vignols 1929: 107–109).

Gradually, the granting of land rights was subjected to increasingly clear legal procedures, whereby the concessions de jure transferred usage rights but not property rights, even though the colonists understood themselves as owners and repeatedly and loudly demanded this status until the era of the revolution, without success. (Baguet 1905: 28–31, 34) Once a colonist had acquired a concession, he was required to have the land surveyed and to establish a plantation; in many cases, the crop to be cultivated was even prescribed for him. One third of the existing forest had to be cleared in the first three years and the second third in the following three years. Varieties of wood suitable for shipbuilding were not to be touched, since the navy

claimed them for itself. After the first three years, the colonist was required to have a working agricultural enterprise (Vignols 1929: 117–118). Concessions were not valid until confirmed by the king, and land sales had to be registered with the colonial government (Arrêt du Conseil d'État, June 11, 1680 cited in Moreau de Saint-Méry 1784–90, vol. 1: 335–336). Due to the high costs involved, most colonists avoided these procedures, which meant that many plantations were basically operating on a legally questionable basis. This gave the colonial authorities a means of pressuring recalcitrant colonists to comply, as a close look at the notaries' files could reveal the legal dubiousness of a property transfer and ruin the livelihood of a plantation owner. If a colonist did not cultivate the land awarded to him as agreed, his land reverted to the crown domain (Moreau de Saint-Méry 1784–90, vol. 2: 226). Valuable land along the coast was abandoned due to the war and was then confiscated by the colonial government (Moreau de Saint-Méry 1784–90, vol. 4: 64).

The fact that the plantation economy of Saint-Domingue was basically based on land that did not belong to the investors refutes the later, widespread idea that private ownership of land is the basis for a successful capitalist enterprise. The restriction on property rights existed until the time of the revolution and was heavily criticized by the colonists. In fact, it contributed significantly to the economic success of the plantations, as it obliged colonists to actually use their land (Vignols 1929: 117). From an ecological point of view, however, this led to heavy soil depletion, which could only be balanced by fertilization, hedgerows to prevent soil erosion by wind, and a carefully balanced water management system. On the Galbaud sugar plantation alone, five of the 149 slaves were permanently employed maintaining the hedges (Frémond de la Merveillère 1934: 155), while the manure from imported plantation animals contributed to soil improvement. During the revolutionary wars of 1791–1803, hedgerows and water channels were often destroyed to deprive the Black guerrillas of cover, and numerous animals were slaughtered. This undoubtedly had an impact on land use after Haiti gained independence.

Real estate speculators repeatedly found loopholes to circumvent the obligations of the concession law. For example, rich investors acquired more concessions than they could manage. They then set up pig enclosures on the unused land, had them guarded by an invalid slave, and declared the whole thing to be an animal farm, enabling them to sell the concession at a profit. The colonial government tried to prevent such practices by having militia commanders visit the areas, but land speculators were often able nonetheless to avoid the cultivation requirement (Moreau de Saint-Méry 1784–90, vol. 2: 369–371; Archives Nationales 1989: 32).

With the expansion of plantation agriculture, conflicts in Saint-Domingue over the cancellation of concessions, land boundaries, and water rights increased to such an extent that in 1766 a special court (*tribunal terrier*) had to be created, incorporating both the governor and the intendant of the colony. Both rich and poor colonists could be affected by the revocation of a concession, but the former were usually only

affected if they had hoarded land without cultivating it. Rebellious colonists who fled arrest could be dispossessed by reference to the concession law.

In the rich plains, ruled by the sugar barons, calm was quickly restored once precise documentation of the boundaries between plantations was established. The large-scale, detailed maps by cartographers such as René Phelipeau, some of which can be viewed on the internet, also bear witness to this fact and are a key source for understanding colonial land use (Saint-Domingue maps on <https://www.gallica.bn.fr> and <https://www.loc.gov>, for example <https://www.loc.gov/resource/g4944c.ar> 188100; Phelipeau 1786). In contrast, the extent of many concessions in the coffee-growing areas of the mountains and highlands remained uncertain until the revolution. The coffee frontier advanced into undeveloped areas at a breathtaking pace, and the effort required to have this terrain mapped by surveyors was simply too great. The coffee revolution forced the colonial government to expand the cultivated areas as quickly as possible. Many concessions were granted as in the early days of the colony, “up to the mountain slopes” or “up to the hills”; later, these were more precisely defined. Often, parts of the same terrain were granted to several colonists at the same time. This was one of the causes of the civil unrest between white colonists in 1789–91, which destabilized Saint-Domingue and paved the way for the revolution of independence.

Although surveyors, who also controlled water rights, and militia commanders only occupied a middle position in the social hierarchy, their role as mediators in the allocation of land gave them a hidden power, which was especially important in regions with an advancing plantation frontier. Land surveyors used their position to arbitrarily determine the extent of a piece of land or to correct it retrospectively, with the victims of these measures often accusing them of corruption (Vignols 1929: 114). By manipulating measured water levels, they were able to favor some colonists and harm others. They even went so far as to target rich and powerful plantation owners, as evidenced by the lawsuit filed by Vicomte de Fontanges, a war hero who was a member of the military government of Saint-Domingue and owned a sugar plantation in Gonaïves. This prominent position did not prevent the bourgeois Jorge family from improving its own cotton plantation by diverting substantial amounts of water with the help of a surveyor. While in France this conflict would have led the viscount's bourgeois challengers straight to the Bastille, nothing of the sort happened in Saint-Domingue. Fontanges, like any other colonist, had to take the matter to court, where lawsuits often dragged on or fizzled out without result (Mirbeck 1791).

A series of contemporary works, including the famous *Encyclopédie*, contain exemplary visual depictions of a typical sugar plantation that can also be considered as idealized versions of the domesticated Caribbean landscape (Avalle 1799; Diderot and d'Alembert 1751–72; Stein 1988: 43–44). According to these accounts, an agricultural enterprise of this kind required an area of one hundred to 300 hectares, which was initially cleared over a wide area. The felled trees were usually burned, and only

the timber stocks claimed by the state were spared. In the domesticated sugar cane plain of the *Encyclopédie* (the example chosen for discussion in this article), trees play only a minor role. Appropriately, the 10 percent of the total area set aside for the representative driveway and living quarters of masters and slaves were called “savannah.” Enslaved workers were given about 4 percent of the plantation for their own subsistence cultivation, 14 percent was reserved for the white people’s food crops, 3 percent was grazing land for cattle, while more than two-thirds belonged to the sugarcane fields (Avalle 1799, Annex 1: 4). The actual sugar factory, with its mill and boiling plant, the latter mostly fired with dried sugar cane, can be observed on the left side of the picture.

Land development in Saint-Domingue proceeded from north to south, a process that took more than one hundred years but accelerated markedly in the years before 1789. The fertile plains were settled first, followed by the less accessible river valleys, and finally the land in the mountains, which was especially suitable for coffee cultivation. For a long time, there were only a few settlers on the southern peninsula. The free Black population was able to obtain concessions more easily in the region’s pioneer landscapes and was consequently overrepresented there at the beginning of the revolution.

Individual forms of cultivation – sugar, coffee, cotton, and indigo – concentrated in certain types of soil and landscapes, represented different social profiles among the colonists. The sugar plantations mainly located near the coast, required a high capital investment and therefore remained the domain of the elites. In contrast, coffee plantations could be established with less capital. The coffee industry, established on hillsides and in the mountains, was dominated by bourgeois investors. When social contradictions erupted, the economic geography outlined here also re-emerged, with the mountainous landscapes shaped by coffee providing first white bourgeois colonists and then Black guerrillas with places of retreat and thus a strategic advantage over the elite sugar cane regions of the plains.

At the beginning of the Revolution of Saint-Domingue (1789), which led to the only successful slave revolution in history in 1791, there could be no question of a unified spatial development of the colony and its landscapes. The plains were dominated by a rich class of sugar planters who formed the colony’s social elite. The mountainous areas, isolated river valleys, and the remote southern province, on the other hand, often still resembled a pioneer society. The boom in colonial goods during the period before 1789 gave this society a particular dynamism that loosened social ties and largely removed the settlers from the control of the colonial state. With the age of revolutions – first white-led revolt, then the decisive Black uprising – Saint-Domingue, then Haiti, entered a new phase in the struggle for ownership and use of land and natural landscapes, one which continues to this day.

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Pineapple

Katharina Schmidt-Loske



Maria Sibylla Merian, "Ananas," in *Metamorphosis Insectorum Surinamensium*, plate 2 (1705). Source: Dutch Edition, Landesbibliothek Oldenburg.

Maria Sibylla Merian's drawing "Ananas" (Pineapple) is often seen as an icon of early globalization, colonial exploitation and trade. As such, it raises questions about the connections between globalization and the Anthropocene, the central concept of this handbook. My starting point is the assumption that industrialization since the mid-eighteenth century has been closely linked to colonialism and economic globalization, by making renewable and non-renewable resources of the global South available to European and international markets.

Merian's life and work, moreover, merits special attention. The namesake of the Maria Sibylla Merian Center for Advanced Latin American Studies (CALAS), Merian was an extraordinary person, a German artist, naturalist and entomologist who traveled to Latin America long before Alexander von Humboldt and Charles Darwin.

Maria Sibylla Merian's Life before Visiting Suriname

Maria Sibylla Merian (1647–1717) grew up among artists. Still-life painter Jacob Marrel (1614–1681), her stepfather, taught her painting and engraving. Her first scientific work, published in German in 1679 under her married name Gräffin, was *Der Raupen wunderbare Verwandlung und sonderbare Blummennahrung* (The Wondrous Transformation of Caterpillars and Their Remarkable Diet of Flowers), containing 50 plates and an accompanying text.

In 1691, Merian moved to the Netherlands with her two daughters. In the seventeenth century, the Northern Netherlands were one of the wealthiest regions of the world, including colonies. Inspired by preserved specimens of butterflies in cabinets of curiosity in Amsterdam brought from the territories of the Dutch West and East India Companies, these insects stimulated her desire to travel to Suriname. Her findings were published as a folio book of 60 plates, titled *Metamorphosis Insectorum Surinamensium* (1705). Here the pineapple is represented prominently in the first two plates and described as a delicious fruit that is permanently available throughout the year.

Natural and Social Conditions in Suriname

When Merian and her daughter Dorothea travelled to Suriname, it had been in Dutch hands for 32 years. In 1654, the Portuguese had driven the Dutch out of Dutch Brazil. The Dutch wanted to found another colony in South America, now in order to oppose England's expansion. In the Treaty of Breda in 1667, the English ceded an area in exchange for Nieuw Amsterdam, later New York.

Besides the Native Americans who traditionally inhabited the Guiana region, various groups of Europeans had settled in Suriname. From the moment Suriname came under Dutch control, its involvement in slavery grew with the growing number of plantations. When Merian lived there between 1699 and 1701, planters relied heavily on the use of enslaved people, including Native Americans (“red slaves”) and growing numbers of Africans from Guinea and Angola (“black slaves”). The number of inhabitants depended on the size of the plantations. Plantation numbers expanded from around 50 in 1680 to 200 in 1702 (Tang 2013: 170).

The colony’s government fluctuated widely. Between 1667 and 1682, the colony was governed by the province of Zeeland, then by the Dutch West India Company (WIC), and from 1683 by the Society of Suriname (*Geoctrooieerde Sociëteit van Suriname*). Merian’s interest in studying insects and plants was not understood by government officials and planters, who were absolutely focused on generating wealth through sugar production and had little interest in scientific inquiry (Merian 1705: 36).

Ananas: the Most Important of All Edible Fruits

In *Metamorphosis Insectorum Surinamensium*, Merian explains her decision to place the pineapple at the beginning of the work: “Since the *ananas* is the most important of all edible fruits, it is only correct that it is also the first of this work and of my findings. It is shown flowering on plate 1, just as a ripe one will be visible on the next plate” (Merian 1705: 1).

Regarding the use of the word *ananas*, Merian explains that she used plant names that she was given by Indigenous people and other inhabitants (Merian 1705, foreword). The name *ananas* comes from the Indigenous Tupí-Guarani languages, and was incorporated into French, continental Portuguese as well as the *Lingua Geral*, a simplified form of Tupi used as a *lingua franca* during the colonial period. (Frederici 2018: 51) Merian describes a ripe *ananas*:

The fruit tastes as if grapes, apples, currants, and pears had been mixed together. One can taste them equally in it. Its scent is lovely and strong. When they are cut open, the whole room smells of it. The crown and shoots, which sprout from the sides, are planted into the earth. They become new plants again. They grow as easily as weeds. For the young shoots it takes six months to reach maturity. They are eaten both raw and cooked. One can also press and distill them to make wine and brandy, which both have a delicious taste that surpass all others. (Merian 1705: 2, translated by the author)

Philippe Fermin (1720–1790) writes sixty-five years later about the situation in Suriname:

This pineapple is grown on almost all plantations because it is very refreshing; the most important thing is that, although it does not cost much money or effort to grow, it is sold in the market for five to eight *stuiver* by the slaves, who conduct trade with it. (Fermin 1770: 152)

Although cultivation of pineapples can hardly be quantified for Suriname at that time, it was clearly an import food source as well as object of local trade.

Merian ends her text of regarding the “flowering pineapple” with the comment that various scholars had given details concerning the fragility and beauty of this fruit, “such as *Piso* and *Markgrave* in their *Brazilian History*, *Rheede* in his eleventh part of *Hortus Malebaricus* [*sic!*] and *Commelin* in the first part of *Amsterdamsche Hof*” (Merian 1705: 1).

Ananas in Europe: from Status Symbol to Consumer Good

The botanical garden *Hortus Medicus* in Amsterdam where the botanists *Commelin* grew their plants was founded in 1682, and a first volume on the exotic plants of the East and West Indies was published in 1697. The front page of this book shows *Flora*, a Roman goddess of flowers, with the coat of arms of Amsterdam, surrounded by persons with botanical gifts, representing Europe, America, Asia and Africa. As a status symbol, a terracotta pot with a fruiting pineapple plant decorates the lower left corner (*Commelin* 1697).

Agnes Block (1629–1704), private owner of a garden with exotic plants and an acquaintance of *Maria Sibylla Merian*, was one of the first in Holland to cultivate the pineapple. The attempt to raise the delicate plant in Europe’s cold climate required the design of heated glasshouses (*Johnson* 2019; *Volkamer* 1714; *Tatter* 1708). During and beyond *Merian*’s lifetime, the introduction of the pineapple as a curiosity played a major role in Europe. This is also reflected in an abundance of illustrations of the pineapple in books. *Merian*’s illustration, which she made after her own observations on site in South America, was copied several times. It formed a supplement in certain books that depicted valuable and exotic lime and bitter oranges with their cultivars, the so-called *Hesperiden Gardens* of *Nuremberg* (see *Volkamer* 1714).

Due to the historic ties between Suriname and the Netherlands, the former stands as an example of pineapple-exporting countries. The acreage of pineapple in Suriname is not extensive, but the genetic variability is extraordinary high. According to a recent FAO report, the total area planted with pineapple is about

200 ha with a yearly production of 2000 tonnes (Ministry of Agriculture Animal Husbandry and Fisheries 1995: 11).

The Netherlands is the largest importer of fresh and dried pineapple in the EU, with 16 per cent of the total EU import volume in 2017, or more than 200,000 tonnes (Neven et al. 2019: 20). “Fresh pineapples in Europe come mainly from Latin America (80 per cent) and Africa (15 per cent)” (Neven, Nguyen and Lienert 2019: 18). Summarizing the historical results and taking the important role of the pineapple in today’s global fruit markets into consideration, we may say that the pineapple is an icon of early globalization.

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toond en beschreeven, alles in America na het leven en levensgrootte geschildert en beschreeven. Amsterdam.

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Mexico encompasses a wide variety of ecosystems – deserts, forests, jungles, among others – and one of the most historically overexploited, though perhaps the least well known, are the mangrove ecosystems made up of lagoons and rivers. Such is the case of the region situated between the present-day states of Campeche and Tabasco, where the tree called *palo de tinte* (logwood, *Haematoxylum campechianum*) grew in abundance. Also referred to as *palo de Campeche* or *palo Ek* – the latter meaning “black” in the Mayan language – this tree thrived in the extensive lagoon and estuarine system that, from the earliest years of the Spanish conquest (sixteenth century), became the object of large-scale extraction. At various points in history, this exploitation had profound social, political, and economic consequences, reaching the level of industrial economy in the nineteenth century.

The Laguna de Términos, in what is now the state of Campeche, was, and continues to be, the historical center of this vast lacustrine region, into which a large number of navigable rivers and smaller lakes flow. For this reason, it came to be known as the “Lagoon of dye woods,” owing precisely to the natural abundance of logwood trees. It served as the central hub of a vast trading zone through which a wide variety of products and commodities circulated, primarily via its principal port, Villa del Carmen (Presidio del Carmen). This network of navigable rivers and lagoons linked numerous towns, giving rise to dynamic commercial activity that converged at the Island of Términos (Isla de Tris, today Isla del Carmen), which opened northward to the Gulf of Mexico.

This area experienced one of the most alarming anthropocenic devastations in the modern history of the Mesoamerican region. For centuries, logwood was a highly valuable commodity for the dye industry, used above all in textiles and in the production of ink for writing and drawing, whether printed or manuscript (Cervera 1854; Yenes 1839: 14–15; *Melantolonotecnica ó arte* 1852; Prieto and Payno 1844, vol. 3). A leguminous tree that can grow up to fifteen meters tall, logwood has a fluted trunk, yellow ornamental flowers, and membranous pods measuring three to six centimeters (Cervantes, 2022). Although the trunk was primarily valued for dye production, during the viceregal period its leaves were also considered to possess medicinal properties, owing to their “tonic and astringent properties against dysentery” (Villegas 2020: 321). Even today, it is recognized for its “anti-inflammatory, antioxidant, and antiseptic” qualities (322). It has also been used as forage, firewood, and building material for posts.

Before the Spanish conquest, the Maya had already used logwood to paint their bodies and faces in ritual contexts, as well as in the production of codices (319–322). During the colonial period, its high hematoxylin content made it indispensable for the textile industry, as the Spanish Crown sought to establish itself as the main supplier of dyes for European markets. The tree’s trunk yielded a wide spectrum of colors: “red, reddish yellow, bright yellow, violet, dark red, and black for dyeing wool, silk, and cotton” (Peniche Moreno 2018: 185).

Global Trade: Two Crowns in Dispute

From the early large-scale exploitation carried out by the Spanish authorities in the sixteenth and seventeenth centuries, records indicate that this activity began endangering Indigenous lives, as they were turned into the primary labor force for its extraction, which was considered “work harmful to the health of the Indians,” prompting intervention by the Crown to regulate the activity (López de Cogolludo 1867, vol. 1: 279). The main task assigned to the Indigenous population was to cut and transport the timber “from the forests to the shore.” Between 1575 and 1581, the king issued several decrees ordering that this work be carried out without exploiting the natives, who were to participate voluntarily, mainly due to the scarce presence of Black enslaved laborers. However, rather than protecting the Indigenous population to preserve cheap labor, the primary motivation was clearly “the Spaniards’ overwhelming greed” (López de Cogolludo 1868, vol. 2: 18–19).

Indeed, the profitability of the logwood trade had already been recognized, attracting the interest of other nations, such as Britain and France. English pirates and corsairs began raiding from Cape Catoche, Yucatán, to the Laguna de Términos, mainly along the coast and nearby areas. Thus, during the seventeenth century, a complicated relationship emerged between the Spanish and English crowns over the exploitation and trade of dyewood. The greed of entrepreneurs and merchants disregarded the fact that they were slowly destroying an ecosystem, directly harming the daily lives of its inhabitants, both Indigenous and foreign. The English monarch, for his part, authorized in 1673 the governor of Jamaica, Thomas Lynch, to trade the wood freely, despite the Spanish Crown’s orders to seize all vessels transporting the product without official licenses, after having declared the trade “illicit” (Contreras Sánchez 1987: 51–53). Although various commercial treaties were signed between the two nations, the English never respected the terms and agreements regarding jurisdiction, permitted quantities, or the payment of taxes for exploitation and trade, resulting in frequent confrontations between the two armies. The English were expelled, but they soon returned for the coveted “black gold,” consistently aiming to occupy and establish themselves indefinitely in the *tintales* lagoons area.

The conflict persisted and grew increasingly intense, so that until 1716 the Spanish government sent its most significant expedition to the Laguna de Términos, successfully expelling the English for good. Shortly thereafter, to ensure that they would not return, a *presidio* (jail) was constructed and a town founded at the western end of Isla del Carmen, known as the Presidio del Carmen (today Ciudad del Carmen). Expelled from the logwood forests, the English settled in what is now Belize, where they continued raiding for the precious wood (Peniche Moreno 2018: 179). Additionally, in Campeche, they continued occasional incursions, often resulting in the seizure of their ships (AGN 1737; 1738). The viceroy himself had issued orders to attack any English vessel caught engaging in illegal timber cutting (AGN 1736).

It should be emphasized that these conflicts extended beyond the sphere of the involved crowns. During the seventeenth century, another devastating consequence of these pirate sieges was the abandonment of several Yucatec Maya towns near the coast. Moreover, it became necessary to fortify cities such as Ciudad del Carmen in Campeche and San Francisco in Yucatán (Contreras Sánchez 1987: 50–51).

Hispanic Triumph and (Mis-)Control

This victory over the English forces did not signify the end of logwood exploitation. On the contrary, Spanish entrepreneurs saw an even greater opportunity to expand their commercial horizons, leading to continued – and largely unchecked – logging and extraction. The Spanish government continued to face the same problems it had with the English, this time with its own subjects. There was little to no oversight in the region, and the “depopulation” of areas further inland along the rivers allowed Spanish entrepreneurs to exercise near-total control over Indigenous labor and the logwood forests.

Once the coastal and the Términos Lagoon groves were partially depleted, Spanish loggers went into the smaller lagoons inland, connected by navigable rivers, hiring Indigenous workers for meager wages to fell the trees and transport them “from the forests to the shore” (López de Cogolludo 1868, vol. 2: 18). These logs were stacked into “artificial mountains of this valuable timber,” from which they were then carried in *bonfos* (canoes) and other vessels to Isla del Carmen to be shipped to European markets (Prieto and Payno 1843, vol. 2: 522). The new strategy of Viceroy Revilagigedo (1751) was to authorize formal trade solely with Spain and the Canary Islands, through special concessions. Trading with any other nation would be deemed illegal (Contreras Sánchez 1987: 57). In this way, Captain Juan Manuel Márquez (AGN 1751) and other merchants obtained permission to cut and trade logwood, which in turn generated multiple conflicts between local residents and the viceregal authorities, whether over territorial limits for logging, fees for transport, issuance or cancellation of licenses, or other timber-related disputes (AGN 1777; 1787a).

This apparent regulation was far from resolving the ecological devastation. To make matters worse, both entrepreneurs and viceregal authorities were aware that their ambitions to monopolize and position themselves as suppliers of this timber for the global dyewood industry were proving far more complicated than they had anticipated. The available transportation infrastructure was wholly insufficient to supply a market of constantly growing demand – an aspect the English were handling more efficiently from the Belize and Honduras region. Competing with them proved even more challenging, particularly since they had secured some agreements with the Spanish Crown for logwood extraction (Treaty of Paris, 1762; Treaty of Versailles, 1783). Nevertheless, the English continued to disregard entirely the desig-

nated territories for logging, thereby accelerating depletion through “immoderate deforestation” (Contreras Sánchez 1987: 69–72). By cutting trees that were still very young, their “natural reproduction” was disrupted, making the eventual extinction of the *tintales* increasingly probable (Contreras Sánchez 2010: 371).

Abundance

Amid the booming trade of the valuable timber in the Laguna de Términos region, in 1786 a detailed architectural project was presented, including plans and sketches, for the construction and expansion of the *Casa de Aduana* (Customs House) in the city of Campeche, 200 kilometers north of Isla del Carmen. The aim was to contribute improve trade regulation (AGN 1786). Shortly thereafter, in 1795, Viceroy Branciforte issued the *Instrucción sobre montes de la Isla del Carmen*, with the objective of regulating logging, which by then was considered out of control and excessive (Contreras Sánchez 2010: 372).

Families such as Pozo, De la Rosa, Zavalza, García Villalobos, De la Peña, Aldea, Solana, Prieto, and Abreu, among others, obtained licenses to enter the trade, dedicating themselves for several years to the cutting and sale of logwood logs (AGN 1785; 1787b; 1787c; 1793a). Eugenio Abreu, a resident of Isla del Carmen, was granted a license in 1789 from the *Real Hacienda* (Royal Treasury), which informed him precisely that he had to follow the “rules and methods in which cutting was to be conducted” (AGN 1788–1789). The prosperity generated by the business for a few entrepreneurs encouraged many others to shift their focus to this industry, creating a form of mono-activity that narrowed the diversity of economic and labor opportunities for local day laborers. This growing profit was leveraged by the Crown through the imposition of a “new tax on logwood,” applied specifically to the “carriers and extractors” based on the number of *quintales* transported, affecting primarily the laborers. In response to petitions from several affected parties, the governor of the Province of Tabasco, Francisco Amuzquibar, agreed in 1789 to postpone the tax “for the relief of commerce, navigation, and the labor of poor workers of this jurisdiction” (AGN 1789). Amuzquibar recognized that the measure, besides being unpopular, was counterproductive. Ultimately, in 1799, the exploitation of logwood and other timbers was declared “exempt from sales tax (*alcabalas*),” while maintaining the prohibition on trade with foreign nations (AGN 1799).

By the late eighteenth and early nineteenth centuries, after overexploiting the northern Yucatán Peninsula and the Belize and Honduras regions, the logwood forests around the Laguna de Términos region became the primary suppliers of dyewood for the global market, clearly foreshadowing the collapse of these forests in the following decades. In the case of Villa del Carmen, after merchants depleted the island’s *tintales*, the main local economic activity became “the transport of logwood

to European ports” (Alcalá Ferrández 2013: 133); that is, production and cutting were no longer the primary activities, only trade. By the beginning of the nineteenth century, this was the prevailing situation.

The General Archive of the Nation (AGN) holds a significant and valuable collection of maps of the lacustrine region between the provinces of Tabasco and Campeche (AGN 1762; 1792; 1810a), dating from the late eighteenth and early nineteenth centuries, created in connection with conflicts over logging and trade boundaries for dyewood. The 1810 map is a clear example of jurisdictional disputes between the two provinces (AGN 1810b), as the inhabitants of Isla del Carmen claimed exclusive rights to the logging and trade of the trees, contesting the claims of the city of Campeche and the jurisdiction of Tabasco, whom they considered “foreign owners” (Torrás Conangla 2019: 239). The map shows some mature large trees in the center, while other areas appear deforested. It depicts *El Mar* (Gulf of Mexico) and the San Pedro y San Pablo River [8], which marks the boundary between Tabasco [11] and Campeche. One of its most notable features is its recording of multiple *rancherías* (small rural settlements) and villages [1, 2, 3, 4, 5], while illustrating with striking clarity the wooded ecosystem, referencing the region’s primary commercial activity. Some felled trees and others with sprouts can be observed in detail along the northern edge of the *popal* (herbaceous wetland typical of Mesoamerican lacustrine areas) of Balchacah [7], visually evoking the forested reality of the early nineteenth century, when the last vestiges of an abundant past could still be found among the mangroves (AGN 1762).

The forest wealth still produced in this region, along with other land resources such as pastures, led landowner Manuel Francisco to claim a stretch of *tierras realengas* (royal lands) [4] to continue exploiting these resources. Several haciendas and settlements entered into dispute in this region, including Rancho de La Trinidad, owned by Juan Antonio Monte [1]; Rancho “*de arriba*,” owned by Estéfano de la Peña [2]; and Rancho de Los Reyes [5]. In all these locations, the properties and advantages of owning and exploiting logwood were well known and passed down through generations. Since the late eighteenth century, these disputes over land and forest resources had begun. Another conflict involved confrontation with landowners in the Tabasco jurisdiction [11], as the Isla del Carmen claimants contested sovereignty over the land [A, B, C, D], asserting rights dating back to the time of the conquistadors (AGN 1810b). Additionally, as previously noted, many of the former Indigenous communities in these regions had been displaced inland, losing not only their ancestral lands but also much of their remaining legitimacy, as the “new territorial structure based on property” established new forms of organization and exploitation (Barrera-Bassols and Barrera de la Torre 2024: 129).

These local conflicts did not halt the development and exploitation of resources. In the first decade of the nineteenth century, an enormous number of “records of departure” document goods shipped from Isla del Carmen to Veracruz and Havana

en route to Cádiz. These goods included meat, pottery, cacao, cordovan leather, cochineal, and, of course, logwood (AGN 1793b; 1793a; 1799; 1803; n.d.a).

Toward the End of the Nightmare

Contreras Sánchez emphasizes that this “invasion and destruction of the *tintales*” reached such a degree that “in 1807 the governor [of Yucatán], Benito Pérez de Valdelomar, was compelled to issue strict measures to regulate this activity” (2010: 372). As early as 1802, he had denied a request from Richard Bafset, superintendent and commander-in-chief of the English establishments in the Wallis region, to harvest logwood in Bacalar and along the Hondo and Nuevo rivers. The refusal was based on the argument that the request violated the treaties, and that, due to the declaration of war, all previous peace treaties from 1786 onward had been abolished, “and only sovereigns may revalidate them” (Archivo General de Indias AGI 1802). Similarly, the U.S. American frigate *Franklin*, under Captain Andrés Ehmestron, was detained, and governor Pérez de Valdelomar prohibited it from reaching Isla del Carmen, where it intended to “load logwood” (AGN n.d.b; n.d.c).

To the devastation of the forests caused by logwood extraction must be added the damage brought by hurricanes, which posed serious challenges for local inhabitants and were exploited by the English to cut beyond treaty limits, thereby doubling the ecological impact (Peniche Moreno 2018: 184). Further compounding the situation were the severe consequences of diseases such as cholera, which in the short term caused deaths, increased production costs, and a drastic reduction in the labor force (Alcalá Ferráez 2013: 132–133). Thus, anthropogenic devastation in this case was twofold: affecting both the natural environment and the communities, primarily the region’s Indigenous peoples.

By the mid-nineteenth century, some testimonies were recorded regarding the condition of the Laguna de Términos’s once-vast logwood forests. An author signing as “M. Z. y Z” in the newspaper *El Museo Mexicano* (November 1843) described the Usumacinta River – key to logwood exploitation – as follows:

[The *tintales*] reproduce spontaneously and without any human effort: they occupy hundreds of square leagues, no longer found on the banks because they are continuously being cut; yet, through channels that are easily opened, or by streams leading to the river’s edges, they are transformed into gold, for there is always great interest in having shipments of dyewood ready for foreign ships, all of which depart heavily loaded with this precious product: almost all the logwood flows down the Palizada arm via Isla del Carmen, where demand is always high. (Prieto and Payno 1843, vol. 2: 410–411)

A year later, Manuel Payno, referring to the Río Frío region in Veracruz, wrote with evident sorrow and regret:

This entire forest [...] has been destroyed by charcoal burners and woodcutters, who never plant at least three trees for every one they fell, as prescribed in the forestry regulations and enforced later by Viceroy Conde de Revillagigedo [...] there are no venerable, age-gray trees left [...] the lumberman's axe has felled these majestic trunks and spares not even the tender shoots that sprout thanks to the fertility of the soil. (1844, vol. 3: 73)

Both accounts are eloquent testimony to the anthropocenic tragedy inherited by the nineteenth century, which, in addition, faced the ongoing task of building a modern nation.

Finally, there is the despairing testimony of Marciano Barrera, a traveler who in 1858 navigated the Usumacinta and other rivers, and almost in tears expressed that the cutting of mahogany wood was destined to end “like the cutting of logwood, leaving nothing but memories and ruins” (Contreras Sánchez 2010: 372). Between greed and excessive logging, which imposed itself upon the most basic rhythms of life for the region's inhabitants, another fundamental and decisive element throughout the nineteenth century was the marked industrialization that accelerated timber processing, consuming the last breath of these contested forests. When industrial technologies began replacing natural dyes with anilines and synthetic tannins by mid-century, as a hope to finally halt extinction, it was already too late. The logwood forests no longer flourished as before, and the tree's natural growth remained disrupted (372).

The insistence of both local and foreign entrepreneurs on continuing exploitation was notable. The French Anizan family, with the complicity and encouragement of the governor of the Partido del Carmen, Perfecto Vadillo, claimed and acquired large tracts of land for logwood trade, contravening legislation that limited “to 2,500 hectares the extent a single individual could claim” for exploitation (one of many cases). Vadillo also offered virgin lands to promote diverse crops, with the dual objective of activating “fallow lands” and preventing monopolization by a few hands, while also aiming to incorporate the country into the modern and expanding “global capitalist system” (Villegas and Torras Conangla 2014: 80–92).

Final Words

The account of events affecting the forests of the *lagunas de tintales* and their inhabitants reveals a clear colonization of nature, which on one hand confronts the preservation of the ecosystem as a mechanism of local identity resistance, and on

the other, enacts control, subjugation, and domination over both nature itself and the native populations. This control and domination of some over others results from the imposition of a systematic series of actions and “territorial logics” that geographically defined extensive areas of the lacustrine region (Torras Conangla 2019: 233). These “society-nature relations” were understood as a hallmark of modernity, within the context of nations that promoted and sustained a thriving, highly industrialized global capitalism, to the detriment of historically constructed practices that had served as units of identity and culture for local communities.

A key mechanism for consolidating this colonization of nature (a “biocoloniality of power,” in the terms of Cajigas-Rotundo, 2007: 169) was the creation of pragmatic cartography, which visualized acts of both economic and territorial domination. Images – in this case, maps – materialize domination visually and, in doing so, also articulate knowledge (Cajigas-Rotundo, 2007: 170).

Regarding the extraction of logwood in numerical terms, it should be noted that from the last quarter of the sixteenth century, more than 20,000 quintales (one quintal is approximately 46 kilograms) of timber were sent to Seville, Spain – a figure that increased markedly in the following decades. From the seventeenth century until the late nineteenth century, “logwood became [...] the most exported raw material from the Yucatán Peninsula” (Plasencia Vázquez and Villegas 2024: 15). Exploitation in the eighteenth century was irregular, though by the end of the century it reportedly ranged between 11,410 and 13,680 quintales per year (Campos García and Leyva Morales 2023: 61). It is worth noting that nineteenth-century industrialization processes had significant impacts on this sector. Between 1845 and 1858 alone, average annual extraction reached up to 500,000 quintales (Villegas and Torras Conangla 2014: 81). By the last third of the century, this equated to the removal of approximately 40,000 to 90,000 trees per year, resulting in brutal deforestation halted only by the introduction of artificial dyes and the advent of steam-powered ships toward the end of the century (Plasencia Vázquez and Villegas 2024: 18).

The Laguna de Términos in Campeche thus became a site not merely of passive observation but of productive, dynamic activity, articulating trade networks for the reproduction of capital and inaugurating a rich “circuit of production and consumption” (Cajigas-Rotundo 2007: 171) with the historical consequences we know today. The irrational and excessive exploitation, characteristic of a capitalism that was not only savage but suicidal, presaged in its ink a tragic anthropocenic devastation.

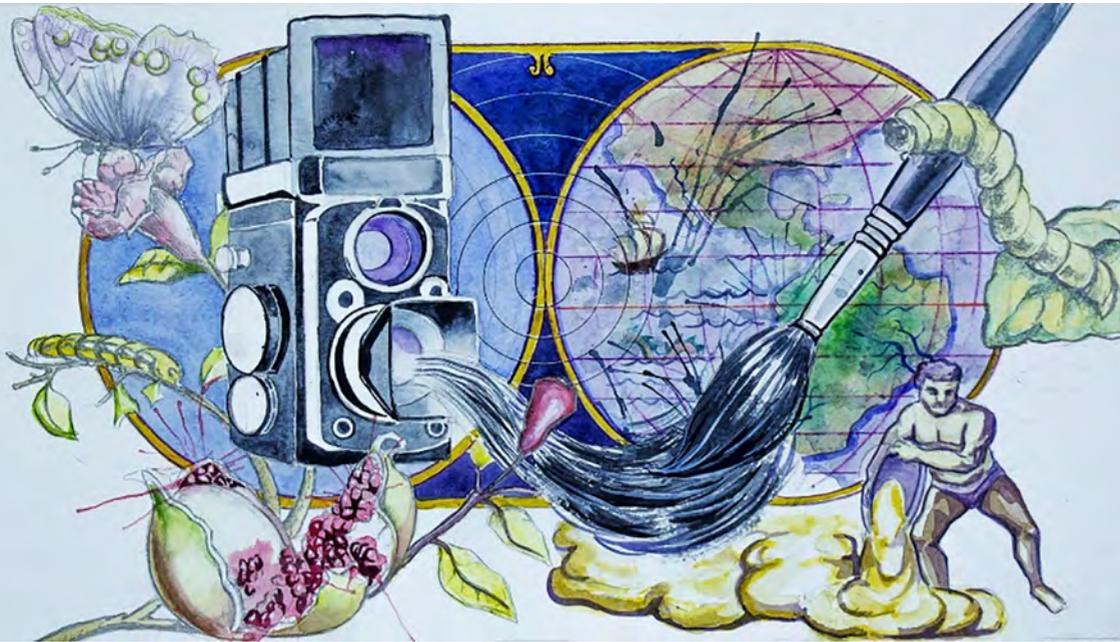
Translated by Omar Sierra Cháves and revised by Luisa Raquel Ellermeier.

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II. FROM THE MID-NINETEENTH CENTURY TO 1950



Source: Fernando Efrén Sandoval Herrera (2021)

Introduction: Visual Representations of the Anthropocene from the Mid-Nineteenth Century to 1950

Olaf Kaltmeier, Juan Arturo Camacho Becerra, Gerardo Cham and Elissa Rashkin

After the success of the independence struggles, Latin America underwent an accelerated dynamic of penetration and conquest into territories that had hitherto remained unexplored. This second conquest of natural areas and Indigenous lands was historically and philosophically sublimated by notions of civilization and progress, understood as universal values. That new wave of conquest and rapid appropriation of natural resources produced new metabolic rifts and was enabled by newly emergent industrial technologies as well as by novel systems of transport and communication – railroads, the telegraph, the machine gun, among many others.

Following ideas of technical control as the bastion of modern order, Indigenous landscapes, both natural and cultural, were completely reimaged and domesticated under new orderly regimes with a geometric vision (Scott 1998). These transformations manifested themselves in the industrialization of the territorial structure of plantations, the expansion of livestock farming areas, and violent extractivism, as well as in urbanization dynamics (Kaltmeier et al. 2024).

Plantations had colonial origins and were essentially based on the monoculture of export products, for which both cultivated products – such as sugar cane – and labor – enslaved Africans – were imported, marking a fundamental milestone in the Anthropocene metabolic rupture after the conquest of the Americas (Machado Araóz 2022, see Camacho, “*Interior of a Boiling-House*”). In the nineteenth century, the plantation economy became increasingly (semi-)industrialized, with Cuban sugar production taking prominence (see Kemner, “*Sugar Plantation Flor de Cuba*”). The first half of the twentieth century saw a renewed boom in the plantation economy, as in the case of banana monocultures in Central America, now under the hegemony of US corporations such as the United Fruit Company, which established them on a large scale. The visual testimonies of the United Fruit Company highlighted the technical mastery of the landscape by white engineers. Workers of color – local peasants and migrants, some displaced by other Anthropocene processes – were reduced to unskilled labor (see Coleman, “*United Fruit Company: Drainage Work*”). This two-sided motif of technical superiority and white domination can also be found in visual rep-

representations of the rubber boom in the Amazon region (see Cham, “*Loading Rubber*” and Córrea, “*Rubber-Gatherers in the Amazon Country*”) or in other extractive forms of the exploitation of natural artefacts, such as sponge harvesting in the Caribbean (see Rodríguez, “*Homes of the Sponge Fishermen at Nuevitas Bay*”).

Parallel to these processes, a genuine Europeanization of the landscape also occurred in many regions of Latin America, particularly in the Southern Cone and the Andean highlands. This Europeanization of the landscape can be traced in different interrelated dimensions. On the one hand, with the introduction of animals (e.g., cows, horses) and plants (e.g., grass, wheat, apple trees), a material biological Europeanization can be observed, also manifested in the phytogeography of certain regions – for example, in the establishment of pastures (Ausdal and Wilcox: 2018). On the other hand, representational devices also contribute to the imaginary Europeanization of the landscape (see Kaltmeier, “*Landscape of Valdivia*” and Volmer, “*The Afternoon*”). Landscape painting, which Denis Cosgrove (1998; 2002) considers a specifically European expression of aesthetic control of the landscape, was a remarkably popular genre throughout the nineteenth century. At the beginning of that century, it was mainly European and North American painters and travelers who spread this genre in Latin America. Alexander von Humboldt’s expedition was particularly influential for its drawings and paintings, which Humboldt considered an independent tool for the production of scientific knowledge. In this way, Humboldt promoted a new iconography of Latin America at the beginning of the nineteenth century (Rebok 2018). Throughout that century, painters from the *criollo* oligarchies perfected their pictorial style by visiting Europe and thus continuing the Western aesthetic appropriation of the landscape.

Through references, citations, and repetitions, iconographic motifs emerged in the field of Latin American landscape painting that became central references in the political and cultural processes of nation building. Geomorphological features and natural characteristics, such as volcanoes in particular, became central icons of the national imagination in countries such as Mexico and Ecuador. Likewise, nineteenth-century landscape painting required special knowledge of composition and drawing, such as central perspective and the ability to represent three-dimensional space on a two-dimensional surface. In this sense, this type of landscape painting was functional and complementary to the Western project of colonization and territorial control. Cosgrove points out: “In landscape, the skills and techniques of the surveyor, cartographer, planner, and artist overlap, and often it was the same individual who put them into practice, something especially true in the case of military art and cartography” (2002: 75). This combination of technical mastery of the landscape and aesthetic vision is exemplified in an Ecuadorian painting about the construction of the railway line (see Kaltmeier, “*Railroad Construction in Chiguacán*”).

The aesthetic Europeanization of the landscape through visual representation is not limited to painting, but can also be found in photographic visual representa-

tions. Although photography is usually seen as a direct record of reality, the camera is just as subjective as a paintbrush: it highlights what it wants to show and hides what it doesn't, creating messages with a strong ideological slant, although sometimes they also capture ambiguities and contradictions. In the entry on the introduction of the automobile in the Mesoamerican region, for example, the pictorial arrangements make the center of Mexico City, the capital of an overwhelmingly rural country, appear as a metropolis identical to European cities at the beginning of the twentieth century (see Wood, "*Automobiles in Mexico City*").

It should be noted that, throughout the century, some pictorial works also showed signs of resistance to the material and imaginary Europeanization of the landscape. Art often explicitly faced the challenge of integrating indigenous elements that resisted Europeanization, such as an araucaria tree (see Kaltmeier, "*Landscape of Valdivia*") or the aforementioned volcanoes. In addition, the genre relied on a romantic approach to landscape, which could undoubtedly express feelings of nostalgia and skepticism towards the disturbing processes of urbanization and modernization underway.

Along with the landscape genre were the descriptions of nature made by expeditionary travelers, especially in the Amazon region, where numerous colonization and exploitation projects took place during this period. These representations played a decisive role in shaping the imaginary of a virgin, almost uninhabited jungle landscape with exuberant biodiversity, which still prevails today (Denevan 1992; Acker et al. 2020; Stepan 2001).

While the formation of national identities based on the European model remained on the political agenda in the nineteenth century, matters of *mestizaje* became increasingly debated during the twentieth century. This debate is also reflected in visual representation. The mere Europeanization of the landscape, including through the introduction of European biota, was increasingly questioned. Noteworthy here is the discourse on anthropophagy from the Brazilian modernist avant-garde, according to which foreign cultural elements are incorporated into one's own, even digested to a certain extent. This also applies to introduced plant species such as the banana, which became part of Brazilian tropicality (see Rashkin, "*Anthropophagy*").

In reflecting on these modes of representation during the Anthropocene, it is useful to emphasize the position of humanity with respect to nature. Although today the Anthropocene is often represented – paradoxically – as non-material or posthuman, particularly in aerial views of the technosphere (Demos 2017: 13–20) from the mid-nineteenth century until 1950 the dominant image was that of man, bringing nature under his control both materially and in the construction of imaginaries. From today's more environmentally sensitive perspective, numerous elements of the imaginary Europeanization and modernization of the landscape constitute central vectors of the Anthropocene, such as fossil fuel-based energy and transporta-

tion artifacts, electrical cables, animal and plant species introduced for livestock and agribusiness, large-scale deforestation, and, in general, the expansion of the technosphere.

The second half of the nineteenth century witnessed the Great Acceleration, which manifested itself in growing demographic and geographic urbanization, with the penetration of national interior regions through modernized transportation infrastructure and a general expansion of the aforementioned technosphere. The energy vector of this change, which goes hand in hand with various industrialization dynamics, was the use of fossil fuels such as wood and coal and, increasingly since the twentieth century, oil. Large-scale transportation infrastructure and other new technologies – from railways to automobiles – were represented in their diversity in the contemporary visual representations of the period and, in some cases, attained an iconographic status. The railway, in particular, became a symbol of shared progress throughout the world in the mid-nineteenth century (see Kaltmeier, “*Railroad Construction in Chiguacan*” and Onken, “*Typical Andean Railroad*”). However, the steamboat for example in the exploitation of rubber in the Amazon, also gained a similar iconic character (see Cham, “*Loading Rubber*”). With the construction of the Panama Canal in 1914, the dream of dominating nature to speed up the transportation of goods, which had been dreamed of since colonial times, finally became a reality. The artificial connection between the maritime ecosystems of the Atlantic and the Pacific constitutes a central milestone in the Anthropocene’s genealogy (see García and González, “*The Panama Canal*”).

In the twentieth century, the railroad was symbolically and structurally replaced by the automobile, partly due to pressure from oil magnates (see Wood, “*Automobiles in Mexico City*”). Just as the billowing factory chimneys had become a symbol of progress in the early industrialization of Manchester, in the Caribbean, this same iconography can be seen in the industrialized sugar mills and plantations of Cuba (see Kemner, “*Sugar Plantation Flor de Cuba*”). From today’s perspective, such remnants only point toward those originally intended ideals of progress in a fragmented way, as they can now be read as visual evidence of increasing air pollution, climate change, and the overexploitation of resources. In this sense, the debate on the Anthropocene has also led to a completely new semiotics of concepts and images.

The artists of the time, however, did not limit themselves to paying homage to triumphalist modernism. Early twentieth-century social realist art, in particular, addressed the impoverishment, alienation, and exploitation of large sections of the population. With industrialization, new fields of proletarian labor emerged, such as the coal miner’s trade, which was incorporated into the burgeoning genre of social realism (see Pérez, “*The Coalman*”). However, extractive economic activities, based in part on racialized forced labor, were also taken up in painting (see Rodríguez, “*Homes of the Sponge Fishermen in Nuevitas Bay*”) and photography (see Cham, “*Loading Rubber*”). Issues of migration caused by environmental destruction and/or violence

are also addressed (see C rrea, “*Rubber-Gatherers in the Amazon Country*” and Garc a, “*Fruit Seller*”). This new genre of social realism was imbued with environmental issues. At the same time, images of the pre-industrial rural world (see Ranero Castro, “*Indian Extracting Pulque*”), which stemmed from a popular tradition going back to the artistic representations of the seventeenth century that sought to represent the folkloric picturesque, were also used in tourist brochures and have a nostalgic air.

Seismic artistic sensitivity was not limited to the social world of humans. On the contrary, animals and the emerging notion of their rights also came to the fore in the nineteenth century. In general, the first environmental movements emerged in various parts of Latin America at the end of the nineteenth century, in response to the rapid destruction of the environment. In some cases, the criticism of animal abuse was given attention in the print media, as shown by a critical report on the caging of a polar bear in S o Paulo (see Horta Duarte, “*Acclimatization Garden*”). However, this critical attitude towards zoos was by no means the mainstream zeitgeist. The exhibition of rare and curious animal species, driven by the accelerated extinction of species due to capitalist penetration, was also very popular in the nineteenth and twentieth centuries, to the point that even human beings – for example, from Tierra del Fuego – were exhibited as witnesses to their own violent extermination for voyeuristic consumption (Blanchard et al. 2012).

The visual representation of animals and plants has also been very important in the natural sciences for documentation, identification, classification, and knowledge acquisition. On the one hand, the genre of scientific painting and drawing focuses on representations that seek to be faithful to reality. However, visual representations, inseparable from their intellectual and individual contexts of production, often go much further and express other dimensions, such as nostalgia or the vitality of flora and fauna (see Kramer, “*Birds of La Plata: Spur-Winged Lapwing*”). From today’s perspective, the artistic representation of individual animals or plants, often understood at the beginning of the century as natural monuments, even have a testimonial effect. Trees, in particular, are characteristic of certain places as they create the space and give it meaning (see Paravisini, “*The Ceiba of Ponce*”).

Between the mid-nineteenth century and 1950, numerous artistic genres emerged that we can only summarize here. However, the field of visual representation was revolutionized by the introduction and spread of a new medium: photography. This emerged in the nineteenth century in the context of the industrial and scientific revolution in Western Europe. In 1839, the same year that Daguerre presented his invention to the French government, the first daguerreotypist, Abb  Louis A. Compte, arrived in Latin America. The following year, the first public demonstrations of the daguerreotype took place in different countries across the continent (Suesc n Monroy, 2022; Navarrete, 2017). With the subsequent evolution of its mechanical devices and chemical processes, the camera ceased to be a device only for specialists and came into wide use.

Photography's proliferation revolutionized the field of visual representation as it multiplied the possibilities of autoethnographic visual testimonies. At the same time, these representations also express aspects that are undesirable or concealed by the images' creators. In particularly drastic conflict zones, this applies to representations of violence, such as the genocide of the Selk'nam (see Bottinelli, "*Tarpaulin, Tierra del Fuego*"). The camera becomes a weapon, like a rifle pointing at its prey. The gaze of the photographic hunter penetrates and can cause damage. But the photographed victim is not defenseless: they can return the gaze and – like the polar bear of São Paulo (see Horta Duarte, "*Acclimatization Garden*") – stare insistently at the viewer, thus acquiring symbolic agency.

With the spread of the printing press and the professionalization of journalism, photographs became an essential means of documenting abuses and bearing witness through their supposed authenticity. This certainly applies to Walter E. Hardenburg and Roger Casement's reporting on the atrocities of Casa Arana in Putumayo, but it also applies to the accusations of animal abuse in the zoological establishments just mentioned. (see Cham, "*Loading Rubber*") At the same time, photographs, like other visual representations, are subject to a "visual economy" (Poole 2000: 7–8) that brings to the fore the political uses of images and their relationship to power. In this way, companies such as Casa Arana produced visual counter-images to literally create a positive image of the company, hiding the traces of human and environmental exploitation. In general, companies increasingly used photographic images for advertising purposes (Coleman, "*United Fruit Company: Drainage Work*"), in conjunction with the nascent tourism industry that linked the consumption of exotic products – pineapple and bananas – with tropical paradises, without showing the harmful effects of this form of transnational production and trade.

With new visual technologies such as photography, new forms of media dissemination such as mass media and advertising, as well as visual platforms such as ethnographic exhibitions and world fairs, visual representation spread on a large scale between the mid-nineteenth and the mid-twentieth centuries. Today, a single image can be technically reproduced on a massive scale, which has also encouraged the production of new iconographies and new symbolisms in constant interaction with their economic, political, and cultural environments. Most of the images compiled here for the iconography of the Anthropocene from a Latin American perspective express the idea of technocratic domination of nature, sometimes in a triumphalist manner. At the same time, the images constitute contemporary snapshots. For this reason, they are essential evidence for tracing the temporalities of the Anthropocene. Environmental humanities specialist Rob Nixon has posed this challenge for the visual representation of the Anthropocene:

A central question is strategic and representational: how can we convert into image and narrative the disasters that are slow moving and long in the making, disas-

ters that are anonymous and that star nobody, disasters that are attritional and of indifferent interest to the sensation-driven technologies of our image-world? How can we turn the long emergencies of slow violence into stories dramatic enough to rouse public sentiment and warrant political intervention, these emergencies whose repercussions have given rise to some of the most critical challenges of our time? (2011: 3)

A promising approach would be to study these visual remnants as archaeological artifacts of the Anthropocene during this period from the mid-nineteenth century to 1950. To that end, this volume applies a methodology of “seeing with two eyes” – one of art history and the other of environmental history – to detect traces through which the genealogy of the Anthropocene can be reconstructed (Buderath and Makowski 1986: 7–9). Obviously, such reconstruction does not necessarily coincide with the intentions of the image’s creator. Nonetheless, viewed through the lens of present-day ecological knowledge and criticism, these images constitute important sources that open new avenues for understanding Latin America’s multiple socio-environmental crises.

Translated by Luisa Ellermeier and revised by Elissa Rashkin.

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**Visual Representations in the Southern Cone
from the Mid-Nineteenth Century to 1950**

Landscape of Valdivia

Olaf Kaltmeier



Carl Alexander Simon, *Paisaje de Valdivia* (1851). Oil Painting. Source: Museo Nacional de Bellas Artes, Santiago de Chile. <https://www.surdoc.cl/registro/2-436>.

The oil painting *Paisaje de Valdivia* (Landscape of Valdivia) by German artist and agrarian colonist Carl Alexander Simon from 1851 depicts the landscape surrounding the southern Chilean port city of Valdivia, which was one of the central starting points for German agrarian colonization in the mid-nineteenth century. Valdivia, which Simon described in a letter dated June 5, 1850, as “a small town that hardly deserved more than the name of a village” (Simon in Schmalz n.d.: 77), is depicted on the horizon line in the right half of the image as seen from the southeast. The town is represented in little detail, except for the church La Matriz with its double towers, which stands out against the dark foreground because of its bright, luminous depiction. La Matriz replaced the previous church destroyed by the earthquake of 1838 at

the end of the 1840, but it did not have a long life either. The church survived a fire but was then badly damaged by a storm and destroyed later by another fire in 1864 (Avendaño 2011).

From the lower left to the center right, a path runs almost straight toward the church. This vector is reinforced by the mountain range on the horizon and a flock of migratory birds arranged in a straight line from top left to bottom right. Thus, the central lines of the picture composition run towards the church, the traditional city center, whereby the line of sight running from left to right, together with the chiaroscuro composition, expresses an idea of progress and civilization that was characteristic of the democratic-liberal and early socialist forces in the nineteenth century.

Around Valdivia, lush bright green pastures can be seen, indicating the anthropogenic transformation of the landscape due to agricultural colonization. Simon himself was reminded of the “Black Forest and beautiful Swabia” (Simon in Schmalz n.d.: 76) when he first saw the landscape around Valdivia. At the same time, it surprised him upon his arrival in Chile how much the land was already characterized by Western European flora: “Roses, pansies, violets bloomed in winter on all the fences and houses, and in the gardens of the small wooden huts [...] were German vegetables and flowers” (ibid.). Simon records in an 1850 letter to his wife a veritable process of the Valdivian rainforest biome’s destruction and its replacement with a Western European – primarily German – cultural landscape dominated by agriculture and livestock. This process is intrinsically related to the colonization of the Mapuche and Huilliche in the region, which found its highest expression in the “Pacification of the Araucanía,” a military-genocidal campaign that began in 1881 (Kaltmeier 2022: 87–118). As early as 1916, the Belgian botanist Lucién Hauman summed up the large-scale landscape transformation in Chile as follows: “agricultural colonization has remarkably ‘Europeanized’ certain regions of this beautiful geobotanical area” (Hauman 1916: 20; Kaltmeier 2021: 140–147). Just as Simon has observed, Hauman argued fifty years later that “the distracted traveler could easily imagine himself driving on these roads in a Central European country” (274). This anthropogenic landscape transformation was accompanied by biodiversity loss of endemic species, local climate change, soil erosion, and the alteration of the hydrographic system (Otero 2006: 125–128). In the 1860s, criticism of large-scale slash-and-burn agriculture, which torched Chilean forest to make farmland, increased until the first forest protection laws were passed – despite hardly being enforced – in 1871 (Camus Gayán 2006: 115–122).

Beyond this material transformation of landscape, however, Simon, who has also been described as a “fiery spirit of high romantic impetus” (Muspér 1938: 7), expressed a romantic-political sublimation of landscape. He compared the Valdivian landscape with that of Italy, which was a utopian place of longing for the German culture-loving elite, and not only because of Johann Wolfgang von Goethe’s trip there in

the 1780s. Simon also knew Italy from a trip in 1828 where he met the German natural scientist Rudolfo Armando Philippi (1808–1904), who would later become one of the leading figures in the establishment of the natural sciences in Chile.

However, Simon was not only a contemporary witness of agrarian colonization; he had contributed significantly to the propagation of German emigration to Chile (Kradolfer 2013: 4–6). Under the motto, “if you cannot take the tyrants from the peoples, then take the peoples from the tyrants” (Simon 1850: 1), he saw emigration as a political moral duty of German democrats after the failed revolution of 1848–49. He founded the Society for National Emigration and Colonization in Stuttgart and, in 1848, published the well-researched pamphlet “The Emigration of Democrats and Proletarians and German-National Colonization of the South American Free State of Chile,” keeping correspondence with German emigrants in Chile such as Eduard Friedrich Poepping. The Chilean government also actively promoted agrarian colonization of Western European settler families based on the Agrarian Colonization Law of 1845. In 1859, the Chilean government’s colonization commissioner, Vicente Pérez Rosales, who also served as consul in Hamburg, published his *Ensayo sobre Chile* (2010), in which he touted Chile as a country for European immigrants. In 1850 – the same year as Simon – Pérez Rosales arrived in Valdivia, where the two propagandists of agrarian colonization met (Rodríguez Villegas 1977; van Meurs 2016: 53).

For Simon, it was precisely the purported similarity of the landscape in southern Chile to the German lands in climatic but also in aesthetic and nostalgic-affective terms that was central to an argument for agricultural colonization, implying the further Europeanization of the landscape.

[The] arable Teuton [...] must begin where he breathes an air similar to that of the fatherland, where he cultivates the food of the homeland, where related food and analogous meteorological conditions do not morbidly afflict and forcibly reshape his physical and, through this, his mental organism, where a similar landscape sends him the memory of the abandoned homeland as a comforter. (Simon 1850: 11)

In 1850, this process of Europeanizing landscapes and their transformation into an anthropogenic technosphere was still in its infancy. Accordingly, Simon – similar to his contemporaries – also referred to large parts of southern Chile as “primeval forest” or “wilderness.” Today we know that when European colonists arrived most forest was not virgin but rather at different stages of development, ranging from primeval to a majority of secondary forests less than 100 years old. Until the beginning of the seventeenth century, the region was densely populated by Mapuche-Huilliche, who had different uses for the forest and were later displaced by Spanish colonization (Otero 2006: 30–34). Nevertheless, in the manner of the Romantics, Simon saw the original Valdivian rainforest not only as a future agricultural land-

scape but also as the sublime: “nothing compares to the splendor of the forests full of high silence, lush darkness, and abundance of blossoms” (87). Simon also expresses this “lush darkness” in his painting. The left side of the picture depicts the entire height of an impressive araucaria. The araucaria (*Araucaria araucana*) is certainly the most emblematic tree of southern Chile. With a height of up to fifty meters, a maximum diameter of up to two meters, and an age of up to 2,000 years, the araucarias – now classified as critically endangered – are stately trees. They are usually found in groups, the individual trees connected by a root network through which nutrients are exchanged. The representation of a solitary tree chosen here indicates the processes of deforestation that were carried out at the time, primarily by means of large-scale slash-and-burn clearing (Otero 2006: 79–88). Araucarias occur almost exclusively in mixed forests; here, only on the lower right section of the image is another tree depicted, a *Nothofagus* species (presumably *Nothofagus dombeyi*), which – as it is still a young solitaire – also indicates deforestation.

At the lower left, on the trunk of the araucaria, is a light green *nalca* plant (*Gunnera tinctoria*) in full red bloom. Simon made a pencil drawing with a detailed study of this plant in 1851, which was included in the album *Vicente Pérez Rosales* with the title “Llanquihue, Nalca.” On the right side of the trunk, the endemic brilliant dark green *chupón* (*Greigera sphacelata*) is reproduced. The lateral vegetation as well as the forest patch on the left edge of the image are not differentiated enough to determine single plant species.

In the upper right segment of the image, the silhouette of a flock of migratory birds in flight formation can be seen against a light bluish-gray sky. It is possible that this is the Magellan Goose, which visits the area around Valdivia from late August to late April to nest (Cossa et al. 2022). In Argentina, the Magellan Goose was persecuted because it competed for food with the introduced sheep. On the Malvinas, the species, now considered endangered in Argentina, was eradicated in the nineteenth century.

In the selection of flora and fauna represented, it is striking that Simon does not depict species that are widespread and highly problematic for agricultural colonization such as the bamboo-like quila. Even more remarkable, however, is that Simon depicts identifiable species, mostly endemic to Chile, that are useful to humans. The goose can be hunted. The araucaria produces edible pine cones called *pehuenes*. In addition, its wood is of high value and can be used especially for the construction of houses. The *chupón*, which is not currently considered endangered (Zizka et al. 2009), produces edible fruits that botanist Karl Reiche described as “pineapple-like tasting, unfortunately not very fleshy berries” (1907: 330). And the *nalca* is known as the Chilean giant rhubarb, which can be used to prepare a salad that Reiche described as “very popular” (1907: 331). Today, it may be argued that this presence of useful plants can be attributed to agro-silvicultural practices from the dense population of Indigenous people in the sixteenth century. But from Simon’s perspective

it seems more convincing that this representation of flora and fauna was part of his colonizing mission. Contrary to the eighteenth-century Comte de Buffon's thesis of the smallness and possible degeneration of species in the Americas, Simon paints a picture of a useful and lush nature. He writes: "I have noticed how by transplanting from Europe and Chile the animals and plants have gained in fertility and beauty, should not nature act equally upon man?" (Simon 1850: 43–44).

Simon was a propagandist for the first wave of German colonization in Chile. He got to know Chile through his brother-in-law Franz Kindermann, who had acquired a large area in southern Chile (van Meurs 2016: 21). Simon's colonization dreams were quickly dashed, and he broke with Kindermann, who had lost all of his property in the end because the Chilean state did not recognize the fraudulent contracts made with Mapuche-Huilliche communities (López Hualamán 2017: 120–14). This decision was probably also intended to counteract German efforts towards ethnic autonomy in southern Chile, a utopian national-democratic vision that was also shared by Simon.

Instead of embarking on a new colonization project, Simon turned back to art. He reflected on his changed role as follows: "the idea of a sad colonist's life I have perhaps thereby overcome more quickly and am trying to reach my artistic and literary endowments more practically than with the axe by studying a nature still quite unknown" (Simon in Schmalz n.d.: 91). He thus operates in the mode of an external landscape observer and a nineteenth-century naturalist. His political conviction, however, also made him seek contact with the local and Indigenous population. By the time of his arrival in Chile in June 1850, Simon wrote in bitter confrontation with state-authoritarian despotism in Europe: "in the deep jungle, under the roof of the Indians, you sleep safer than in Europe under the protection of the laws" (78–79). In addition to the defining political experience of the failed revolution of 1848 and subsequent restoration, this impetus, critical of civilization, most likely stemmed primarily from his intense engagement with Friedrich Wilhelm Schelling's philosophy of nature. (Gaete 2019: 2–5)

While Simon had already urged his fellow painters in Germany in the 1840s to go into the simple huts and taverns to paint the proletarianized and pauperized population there, he did not implement this plan himself until he arrived in Chile. After the failure of the colonization experience, he led an artistic, nature-loving hermit's life. His oeuvre includes various sketches of everyday scenes of the peasant-mestizo Indigenous population of southern Chile, especially on the island of Chiloé (van Meurs 2016: 57–85). In *Paisaje de Valdivia* the image of a *ruca*, a Mapuche-Huilliche house, stands out, in front of which two Indigenous people are depicted. The *ruca* is half-completed, allowing the observer to understand the method of construction. Inside sits a woman with a small child and in front of the house stands an adult Mapuche in a red poncho. In the background, two more *ruca* can be seen on the outskirts of Valdivia, while Indigenous-mestizo locals in poncho are depicted along the way.

This demonstrates that the Indigenous population, although far less dense than in the sixteenth century, was still present in the region around Valdivia.

In terms of the picture's composition, these everyday scenes of Mapuche-Huilliche life are assigned to the darker half of the picture in the foreground. The imaginary extension lines of the roof ridge, as well as the *Nothofagus* tree leaning to the left, run towards the *araucaria* occupying the left section of the picture. In this sense, two conflicting vectors can be found in *Paisaje de Valdivia*. The vector running from the lower left to the upper right over the dominant path towards the town, which corresponds with brighter colors, is contrasted by the dynamic vector running from the Mapuche-Huilliche family and its *ruca* over the *Nothofagus* tree towards the *araucaria*. Abstractly, there is an unresolved tension in the picture between civilization, expressed by the church and road, and the wilderness or pristine nature, symbolized by Indigenous people and autochthonous, endemic flora. Simon was still trapped in this stereotypical dualism that characterizes nineteenth-century intellectual culture and artistic expression, although he may well have been torn between these two poles. As a German revolutionary, he promoted agrarian colonization; on the other hand, he felt romantically drawn to nature and the Indigenous population.

Through his painting, Simon sought to contribute to the exploration of Chilean nature, which was still largely unknown to Western science. To this end, he was in contact with naturalists of German origin. A large part of his paintings became part of the collection *Album Vicente Pérez Rosales*, leading to the authorship of the work temporarily being wrongly attributed to Vicente Pérez Rosales. Since 1939, the painting has been in the possession of the Museo Nacional de Bellas Artes (Rodríguez Villegas 1977; van Meurs 2016: 51–56). Ironically, Simon's passion for the Indigenous was to be his tragic end. In 1852, the governor of Magallanes, Bernardo Philippi, Rudolfo Armando's brother, contracted Simon as a draftsman for an expedition to the extreme south of Chile. Shortly before, Europeans had killed representatives of the Indigenous peoples there. In apparent retaliation for the slaughter, the Indigenous people killed seven Europeans, among them Bernardo Philippi and Carl Alexander Simon.

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Birds of La Plata: Spur-Winged Lapwing

Kirsten Kramer



Henrik Grønvold, *Spur-Winged Lapwing*. Frontispiece Illustration, in William Henry Hudson, *Birds of La Plata* (1920).

The nineteenth century marks the era when, in Latin America, the study of nature, the Earth's ecosystem, and its limits was carried out primarily within the

field of natural history and in the writings of scientific travelers (Livon-Grosman 2003). The production of these writings is closely related to the development and professionalization of modern natural sciences with their focus on progress, as well as to the growing appropriation and technical-economic exploitation of nature in the context of emerging capitalism and industrialization. At the same time, the accounts of numerous naturalists such as Alexander von Humboldt and Charles Darwin are travel narratives that are literary in character and which, moreover, had a major influence on the fictional literature of the time (Rodríguez 2010: 31–94).

The connection between the scientific and the literary approaches to nature is most evident in the works of the Argentine-British naturalist and novelist William Henry Hudson (1841–1922). Born to parents of Irish and English descent, Hudson spent his childhood in Argentina and developed a passion for researching and observing nature from an early age. In 1874, he emigrated to England, where, after becoming a founding member of the (Royal) Society for the Protection of Birds, he devoted many years of his life to the protection of nature and birds (Klengel 2020; Tomalin 1982: 141–152). It was there that Hudson produced his extensive body of work, which includes, in addition to autobiographical texts (such as *Idle Days in Patagonia* [1893] and *Far Away and Long Ago* [1918]) and fictional narratives (such as *Green Mansions* [1904]), numerous writings on natural history (such as *The Naturalist in La Plata* [1892]). The present image shows the frontispiece illustration, created by the Danish naturalist and lithographer Henrik Grønvold (1858–1940), for the ornithological treatise *Birds of La Plata* (Hudson 1920: 10). Grønvold devoted himself to natural history studies from a young age. In 1892, he emigrated to England, where he first worked at the Natural History Museum in London as a taxidermist and illustrator. He later specialized in bird illustrations, which were published in renowned scientific journals (such as *Proceedings and Transactions of the Zoological Society* and *Ibis*) and in books on birds from different regions of the world (England, Africa, Argentina, among others) (Ashworth 2024). The treatise *Birds of La Plata* was published by Hudson in 1920, but it presents descriptions of bird species based on earlier empirical research carried out by the author and taken from the book *Argentine Ornithology*, published in 1888 in collaboration with the British zoologist Philip Lutley Sclater. As indicated by the subtitle, the illustration shows a specimen of the species of spur-winged lapwing, already described by Carl Linnaeus in the edition of *Systema Naturae* published in 1758 (151).

Both Hudson's naturalist writings as well as his novels and short stories document an awareness of a general crisis in nature caused by the consolidation of Argentina as an agro-export state, its global opening to European markets, the transition from a pastoral society to industrial modernity, and the accelerated denaturalization of the natural environment associated with industrial capitalism, all of which resulted in the growing endangerment and destruction of its fauna and flora (Andermann 2012; Rodríguez 2010: 95–100). Hudson's writings refer to these

key historical developments, which have also shaped current debates about the emergence of the Anthropocene. Within these debates, the Anthropocene denotes an era characterized by the pernicious impact of humans on the planet and by related global environmental phenomena, such as climate change, the increasing exploitation of the Earth's non-renewable resources, and the decline in biodiversity, which threaten the balance of Earth's ecosystems. According to current periodizations, these developments were already visible well before the twentieth century (Chakrabarty 2018: 5–9; Bonneuil and Fressoz 2016: 49–53). In recent years, the term Anthropocene has also evolved into an anthropological-cultural concept that refers to significant transformations in the experience and cultural construction of nature as landscape (Andermann 2018; Horn and Bergthaller 2020: 96–111), which, given the models of ordering and knowledge implemented in it, are clearly opposed to the traditional idea of a homogeneous space of perception presented to the distanced contemplation of an external observer. The concept rather implies a perception of the natural environment as an integral geophysical biosphere, marked by close interconnections between aesthetic practices of territorial exploration and geopolitical strategies of land appropriation, as well as by new interactions, alliances, and coexistences that are established between different human and non-human actors (Latour 2014).

This complex connection with the Anthropocene is also reflected in the illustration of the spur-winged lapwing that appears in the treatise *Birds of La Plata*. In its combination of image and caption, the drawing follows the tradition of naturalistic classifications of the animal world. At the same time, the image is characterized by its use of a specific form of landscape perception, which is particularly evident in the compositional ordering of the foreground and background of the image, which places the bird in its natural environment. Both foreground and background of the illustration show the sandy soil and various grasses belonging to the semi-arid and steppe vegetation of the Pampas plains along the Río de la Plata. The specific character of this type of landscape is manifested above all in the coloring of the scene depicted and in the corresponding organization of pictorial space. Of particular significance is the smooth and barely discernible transition from the green color of the grasses to the blue zone of the sky, which, by erasing the horizon line, indicates a perceptual blurring of the dividing line between earth and sky. Within the tradition of landscape painting, the horizon line marks a perceptual space that opens up beyond this line; it illustrates the characteristic openness of pictorial space, inviting the viewer to venture beyond its confines, thus conferring a political dimension to the landscape, inasmuch as the perception of pictorial space refers to the dynamics of the physical appropriation of geographical space as it occurred in the course of colonization (Cosgrove 1998; Andermann 2018: 11–12).

In Grønvold's image, however, other connotations stand out to the viewer. The seamless transition from the ground to the sky creates the impression of an un-

limited immensity and the infinite extension of the perceived landscape. This effect is highlighted in the background of the image through the chromatic gradation between the green and blue tones, which surreptitiously recalls the comparisons that numerous nineteenth-century authors – such as Domingo Faustino Sarmiento, Alexander von Humboldt, and Charles Darwin – drew between the Pampas or Patagonian plains, on the one hand, and the ocean or sea, on the other. These comparisons also serve to display the immeasurable extension of a landscape unaltered by human intervention. In the writings of several authors, such comparisons form the core of an aesthetic of the sublime that is often linked to scientific zoological and cartographic views of the landscape (Rodríguez 2010: 47–49, 67–81; Silvestri 2011: 74–98). In Humboldt, in particular, these modes of scientific perception are combined with a “sense of infinity,” thereby having spiritual connotations. These connotations include the experience of living nature as a totality, thus implying the existence of an underlying cosmological order (Rodríguez 2010: 44–46). The pictorial representation of the bird thus echoes the scientific-romantic landscape aesthetic that evokes a pre-industrial and pre-Anthropocene space of nature, which appears to conceal the pernicious influence that humans exert on the Earth’s ecosystem and its natural balance.

An observation formulated in *Far Away and Long Ago* about the destruction of wild bird life caused by new agricultural practices (Andermann 2012: 112), paradigmatically shows that in Hudson, by contrast, the confrontation with the scientific exploration of nature and the perception of landscape is marked by the growing awareness of the threatened natural order. This awareness is mainly manifested in reconsiderations of the relationships and interactions between linking humans, animals, and the natural environment as postulated in the naturalist system of knowledge. In the drawing by Grønvold, himself a renowned naturalist, the close link between the image and the scientific knowledge system with its classification schemes is particularly apparent. This is exemplified in the interplay between the illustration, the caption, and the accompanying text in the chapter on the spur-winged lapwing. The caption of the image presents, in addition to the English name, the Latin name of the bird species, which assigns the specimen to a specific genus (*Vanellus*) and species (*V. cayennensis*). In his use of the binomial nomenclature, Hudson applies the same formal act of naming on which Linnaeus’s taxonomic classification system in *Systema Naturae* is based. This scientific approach is also reflected in the chapter dealing with the spur-winged lapwing in *Birds of La Plata*. The chapter begins with a list of the most important physical characteristics of the species, followed by a reference to its vernacular names and a detailed description of the birds’ specific ways of life and habits in their natural *oikos* (Hudson 1920: 178–184). In its formal structure, the chapter thus follows the conventions of naturalist research – including classification schemes – that have been developed since the eighteenth century. A similar procedure also marks the autobiographical account *Idle Days in Patagonia*. The account of the arrival

in Patagonia, inspired by the narratives of traveling naturalists, is followed by a precise ornithological description of the local fauna, motivated by the traveler's intent to undertake a research expedition in the tradition of Humboldt or Darwin, aiming to discover new biological species (Livon-Grosman 2003: 170–171). Thus, his autobiographical narrative description also applies the categories of knowledge and order schemes and categories characteristic of nineteenth-century naturalistic research.

In nineteenth-century natural history, through the acts of naming, measuring, and mapping empirical phenomena in the field, the scientific description of nature aims to explore and make legible an unaltered nature. This discourse fostered the emergence of a new type of “planetary thinking” (Chakrabarty 2018: 22–29), which, by studying geological formations, contrasts the deep temporality of the Earth's biosphere with the global history of humanity. Yet at the same time, this discourse developed in parallel with the political-military appropriation of the indigenous population's habitat, as well as the technical-industrial exploitation of natural resources, thus becoming integrated into the process of progressive appropriation of nature characteristic of modernity. In Hudson, however, the use of descriptive models of natural and scientific history reflects an awareness of a profound disturbance of the natural balance in biodiversity; this results in new forms of nature writing that not only oppose the romantic landscape aesthetics of the sublime, but also revise the taxonomic classification schemes of scientific natural history, thus contributing to the exploration of new alliances and cohabitations between humans and animals.

The premises and specific implications underlying this new approach to landscape and nature are impressively manifested in Grønvold's pictorial representation of the spur-winged lapwing in *Birds of La Plata*. Unlike other illustrations in the treatise, the bird depicted is not characterized solely by its physical features, such as the peculiar coloring of the plumage on its wings and breast or the small spine on both wings, the biological functions of which, referring to the species' way of life or fighting behavior, are explained in the accompanying scientific description (Hudson 1920: 80, 178). Rather, it is the peculiar posture of the body and the wide-open beak that draw the viewer's attention to the sounds or cries emitted by the bird. According to Hudson, the sounds of birds significantly enhance the experience of the landscape, the musical quality of which has not been sufficiently appreciated by scientific natural history (Hudson 1968: 134). In the image, however, the sounds of the bird acquire their particular meaning in relation to the animal's posture: the crying bird is not facing the viewer head-on, but seems to direct the sound to instances outside the image, at the same height or just above its position. Therefore, the sounds establish a communicative bond between the bird positioned inside the space of the image and the members of its species visible in the background within their natural habitat, on the one hand, and the viewer located in front of the image and their sphere of existence, on the other. The pictorial representation thus suggests a direct interaction between the bird and the human being, proposing a latent anthropomorphizing

of the animal. A similar rapprochement between the animal and the human is also documented in Hudson's ornithological reflections in *Idle Days in Patagonia*. There, similarities between the sounds of birds and the sounds of different mammals are highlighted (Hudson 1968: 139), with the song of the red-breasted plant-cutter being defined with explicit reference to "notes that resemble the faint bleatings of a kid" (8). Comparable observations are also found in *Birds of La Plata*, where bird sounds are endowed with specific functions. These include warning or threatening in fights with other birds or animals; the "cries" are also interpreted as an expression of "fear or grief" or a "disturbance" of the "minds" in reaction to the loss of a member of the same species. In this way, emotions are explicitly compared to the emotional reactions of humans in similar situations of danger or loss (Hudson 1920: 81).

Consequently, the pictorial representation of birds, accompanied by the author's naturalistic comments, document a rapprochement between birds and humans. This rapprochement also appears in repeated architectural comparisons between nest building and the construction of complex man-made structures, found both in *Idle Days in Patagonia* (Hudson 1968: 10) and in a pictorial illustration by Grønvold, in the first volume of *Birds of la Plata*, showing a red oven bird's dwelling. However, the autobiographical narrative also offers a significant complementary description of the relationship between animals and humans. Not only is a new way of addressing or "interpellating" (Andermann 2012: 119) the human observer hinted at in the fleeting exchange of glances between the narrator and a wandering deer on the Patagonian plain (Hudson 1968: 195). The fundamental reciprocity between man and animal is also manifested in the narrator's experience of a sudden "novel state of mind," which, due to a temporary loss of consciousness, amounts to an "instantaneous reversion to the primitive and wholly savage mental conditions" in which the human is likened to the state of an animal (Hudson 1968: 200). Hudson's writings thus produce a double suspension of the separation between humans and the natural environment, insofar as the anthropomorphization of the chirping bird, hinted at in Grønvold's illustration, finds its complement in the zoomorphization of the narrator, his transformation into an animal. Hudson thus practices a new form of nature writing that opposes the classificatory synthesis of natural history and the strict systematics of identities and differences that it entails by clearly rejecting the taxonomies and normative hierarchies at work in traditional descriptions that contrast animal and human life forms (Andermann 2012; Rodríguez 2010: 98–110, 117–121).

It should be noted that this type of nature writing, which evokes a primitive nature and defends an ecosystem that is intact and untouched by human intervention, shows affinities with the concept of nature in American transcendentalism (Livon-Grosman 2003: 167–168). However, this mode of narrating by no means implies that the scientific exploration of nature has been abandoned by its author. Rather, the narrator's autobiographical description of self-perception and observation of na-

ture is characterized by numerous anthropological, zoological, and ethnographic reflections which come to view humans as a biological species that must relate to other species. In *Idle Days in Patagonia*, these reflections are developed in direct reference to Darwin's model of evolutionary theory and in explicit confrontation with recognized scientific authorities such as William K. Parker, author of the lecture series *On Mammalian Descent*, published in 1885. Ultimately, Hudson's study of nature and of the Earth's biosphere becomes the outlines of an "environmental ethnography" of the self. This ethnography maintains the gesture of scientific observation while at the same time abandoning the epistemological separation or distance between the subject and the object of observation that constitutes the naturalistic system of knowledge and its legitimation. In this way, the human observer is himself viewed as a zoological specimen and as an integral part of the nature being observed.

The frontispiece illustration by Henrik Grønvold in *Birds of La Plata* impressively documents a conception and description of nature that does not constitute a model opposed to nineteenth-century natural history, but rather represents its continuation in conditions of crisis for nature. In the era of the Anthropocene this crisis is driven by progressive transformations of the Earth's biosphere and the reduction of biodiversity. In Hudson's writings, this crisis is neither glossed over nor overcome, but rather reflected upon in terms of its consequences and related to the need to develop alternative epistemic models. These models express the possibility of new alliances between human and non-human actors, thus contributing to a heuristic rethinking of what it means to be a human being in a natural environment.

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The Melancholy of the Polar Bear

In its May 1930 edition, the magazine *Zoophilo Paulista* featured three photos of a polar bear in the Jardim da Acclimação zoo in São Paulo, Brazil. The photo sequence is clearly intended to move and outrage readers with a spectacle already familiar to the city's inhabitants. The first photo shows the isolated bear next to the bars of the cell. Through the bars, the bear can readily see the surrounding lush vegetation, the gray concrete of the cage contrasting with the tall trees glowing green beyond its confines. The bear turns slightly toward the photographer, perhaps attracted by his movement, but also seeming to plead for help from the human behind the lens. The second photo offers another angle that now includes two grizzly bears, cellmates: the polar bear leans upright against the bars as if yearning for the joys of the outside world. The third shot underscores the photographer's location outside the cage, highlighting the privilege of freedom. Through the bars, the bear sits and looks back at its observer. The photo sequence constitutes an eloquent narrative, created by the observer's movement around the perimeter of the cage: the miserable interior, then the polar bear's attempt to raise its body in the hope of escaping, and finally, resignation and loneliness.

According to the text and captions accompanying the photos, the polar bear, "stripped of the freedom of its original habitat," suffers the rigors of the Brazilian climate, with nothing to alleviate its "nostalgia for polar ice." Such a spectacle is unworthy of a "civilized" city. A victim of human cruelty, the bear languishes in melancholy "for the viewer's enjoyment," with no authorities available to prevent these abuses or to demand that the facilities provide "more space, more light, more air, more water" (União Internacional Protetora dos Animais [UIPA] 1930: 19).

Zoophilo Paulista was first published in 1919 by the União Internacional Protetora dos Animais (UIPA, International Animal Protection Union), which began operations in São Paulo in 1895. Its richly illustrated issues proposed measures such as actions in favor of domestic dogs and cats; defense of horses, mules, and oxen used in transport; efforts to improve conditions in slaughterhouses; condemnation of vivisection, bullrings and the use of animals in fights or circuses; struggles for legal protection of animals; and, as seen here, criticism of zoos. To obtain this data, we consulted the monthly issues between May 1919 (year I, no. 1) and June 1931 (year XIII, no. 131).

The polar bear article featured here can be seen as part of a broader phenomenon: the emergence of sensitivities towards animals, which materialized in the creation of animal defense institutions in Southern Cone cities and elsewhere at the dawn of the twentieth century. In these new practices, women and men broke with markedly anthropocentric Iberian Catholic cultural traditions. Similar societies were formed at this time in Uruguay and Argentina. All three countries had experienced significant economic growth from agricultural exports, capturing a large share of the world

commodities market and fostering the international mobility of workers. Newly urbanized landscapes embodied the zenith of this economic power, driven by the export of primary products. Such transformations, in turn, went hand in hand with a profound modification of the continent's interior, in which the native flora receded before the monotony of monocultures, and the region's fauna saw its habitat invaded by commercial animal breeding.

On a planetary scale, Brazil, Argentina, and Uruguay undoubtedly caused less environmental impact than the industrialized nations of Europe; moreover, levels of consumption by national elites differed markedly from the living standards and worldviews of Indigenous, mestizo, Afro-descendant and working-class immigrant populations. The argument that not everyone experiences the Anthropocene in the same way (Nixon 2018: 8; Pádua and Saramago 2023: 663) is clearly valid for the Southern Cone between the end of the nineteenth and the first decades of the twentieth centuries.

Zoophilia and Civilization in Emerging Cities

Processes of urbanization in cities such as São Paulo, Montevideo, and Buenos Aires brought about great changes in the relationship between human residents and animals, characterized by a peculiar coexistence among domestic and stray animals, birds sold live for slaughter, pack and transport animals, and even those destined for entertainment. Human relationships with these animals in this new urban landscape of consumption, services, and commerce became intertwined with new sensibilities. The emergence of animal protection societies in the context of the Anthropocene offers a privileged window onto the complexity of worldviews in the expanding cities of the Southern Cone. In particular, these organizations showcase the emergence of arguments against the use of animals for the comfort and/or leisure of human beings.

In Argentina, the first protective society emerged in Rosario in 1871. However, the first formally constituted institution was the Sociedad Argentina Protectora de los Animales (SAPA) in 1882. One of its fifty-nine founding members was the writer and former Argentine president Domingo Faustino Sarmiento, who served as president of the SAPA between 1882 and 1885. Uruguay saw the creation of the Sociedad Uruguaya Protectora de los Animales (SUPA) in 1888 and the Sociedad Uruguaya Protectora de Animales General Artigas in 1897. Half a century later, in 1951, the Sociedad Protectora de Animales y Plantas del Paraguay was founded in Asunción. These societies communicated and consulted with one another to determine common actions and strategies. The title of the UIPA journal, *Zoophilo Paulista*, was clearly an allusion to *El Zoófilo Argentino*, published by the SAPA since 1904 (SAPA 1904–1938). In its 1891 proposal for a law prohibiting animal abuse, the SUPA mentioned as a model an ear-

lier proposal by its Argentine counterpart (Simari 2019; Ostos 2017; Piazzzi and Corti 2021; SAPA 1881; SUPA 1888; SUPA 1891).

The growth of São Paulo, Montevideo, and Buenos Aires between the end of the nineteenth and the first decades of the twentieth centuries combined demographic, economic, urban, social, and environmental aspects. These cities were at the epicenter of a broad movement to conquer the jungles, forests, pampas, and savannahs to produce wheat, coffee, meat, leather, and wool. Plantations and pastures expanded across the territory, resulting in loss of wildlife as well as violence against Indigenous communities. These cities were part of a network of railway connections and ports, interconnecting regional and transoceanic centers of production, distribution, and consumption. Successive waves of immigration spurred new cultural and artistic dynamics, as well as social conflicts stemming from the emergence of the working classes and the social exclusion of Afrodescendants. Both the various strata of urban middle classes who benefited from the secondary sector's growth and the elites who profited from agricultural exports were eager to consume European products such as hats, hunting rifles, crystal chandeliers, and automobiles (Scobie 2015; Cortés Conde 2013; Oddone 2013; Gomes 2002; Ángel Rama 1969; Germán Rama 1969; Caetano 2016).

The elites, obsessed with ideals of "civilization," invested in projects of sanitation that reorganized urban spaces. "Elegant" leisure activities were carried out in squares, parks, and zoos, emblems of modernity in cities that aspired to follow European standards. In Buenos Aires, Sarmiento created the Parque Zoológico in 1875. In Montevideo, the millionaires Alejo Rossell y Rius and Dolores Pereira built the Villa Dolores Zoo, which was finished in 1894 and later donated to the city in 1912. In São Paulo, Carlos Botelho – member of a wealthy family of coffee growers – founded the Jardim da Acclimação in 1883, whose name was inspired by a famous zoo in Paris. The three zoos' collections began with native fauna and, over time, diversified, either through exchanges with other zoos (as in the case of Buenos Aires and Washington), or through the purchase of animals, especially those supplied by the Hagenbeck House in Hamburg (Duarte 2021; Aranha 2015; Hochadel 2022).

Zoos were a place between worlds that blurred the boundaries between the wild and the domesticated, the urban and the wild, the exotic and the native. The "specimens" connected their observers to distant places in Africa, Asia, America, or even the Arctic, where explorers imprisoned animals to sell them on the international market. Protective societies often criticized zoos, as in the report featuring photos of the polar bear. Yet the values that inspired them were much like those of their critics. Both groups were committed to "civilizing" and *humanizing* the citizenry via contact with animals. This explains why Sarmiento, driven by the civilizing project that characterizes his writings such as *Facundo* (1845), served as creator of both the Buenos Aires Zoo and the Sociedad Protectora.

As an expression of the new bourgeois sensibilities, the protective societies brought together members of the elite, whose emerging vision of civilization implied ideas that contrasted with images of barbarism linked to Iberian traditions, and which modern nations would have to overcome. For Sarmiento, opposing acts that “bestialized” human beings meant burying the barbaric Spanish past. The new secular spirit expressed itself in the articulation of sanitation, public hygiene, and animal protection, since urban animals also required adequate living conditions. Slaughterhouses designed to avoid animal suffering would also prevent pestilence caused by their unsanitary corpses. Encounters with dying horses or poisoned dog carcasses in the streets would be unacceptable as a feature of the ideal city (Simari 2019; Piazzini and Corti 2021).

In this period, Brazil’s experience of the Iberian presence was recent, since the country’s independence in 1822 culminated in a monarchy led by the same colonial dynasty. Expressing the search for national identity, Euclides da Cunha wrote in *Os Sertões* – perhaps the most influential work from the early years of the Republic – that Brazilians were condemned to civilization: they could either progress or disappear (Cunha 1902). In such an intellectual environment, it is perhaps no coincidence that the UIPA’s founder was Ignacio Cochrane, an engineer, like Cunha, with military and positivist training. Cochrane headed the Reform and Sanitation Commission of São Paulo in 1894. He also helped found the Instituto Pasteur of São Paulo in 1903, a landmark institution in the fight against hydrophobia, vaccine research and the development of veterinary products (Ostos 2015).

Zoophilo Paulista claimed that “no advanced civilization” could avoid the subject of animals. It quoted Sarmiento in his demand for justice “for animals as well,” and argued that to fight against the executioners of these living beings was also to fight against “the executioner father, the executioner master, the executioner owner, the executioner boss, the executioner man” (UIPA 1919: 3).

Conclusion: Reciprocities, Agencies, and Alliances

It is important to note that protective societies emerged as an elitist practice, in harmony with nationalist projects and bourgeois sensibilities, and above all, concerned primarily with animals that were considered useful to human beings. However, we must also consider the role that the animals themselves played in this phenomenon; for these were far from being mere passive recipients of human initiatives.

Many human and non-human animals cohabited in urban spaces. In spite of their clearly unequal position with regard to human domination, dogs, cats, oxen, roosters, and horses filled the streets with their sounds, their smells, their feces, their calls, their attitudes, their corporeality, their suffering, their affection, and their individuality. Their gazes, focused on humans, often unsettled them to the

point of inspiring the fight for change. The historical agency of animals in the mobilization of activists cannot be disregarded. At the same time, it would also be a mistake to ignore the importance of protective societies' actions in the lives of animals. In short, many women and men challenged cruelty with a new ethic of coexistence between species. Going beyond simple human domination over non-human animals, in the streets of Montevideo, Buenos Aires, Rosario, São Paulo, and many others, relationships of reciprocity and alliance were forged, woven through confrontations and social conflicts (Maia 2015; Duarte et al. 2022).

Returning to the article from *Zoophilo Paulista*, it is clear that the gravity of the polar bear's gaze and attitudes in the Jardim da Acclimação drew the photographer into its sphere, like a satellite orbiting a large star. As the accompanying caption explains, the final photo captures the loneliness the bear was condemned to suffer in its forced exile. Yet the same image also communicates the confession of the activist photographer himself, who can document but not transcend his impotence to return the animal to its frozen world, with its aurora borealis and midnight suns.

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Tarpaulin, Tierra del Fuego

Alejandra Bottinelli Wolleter



Julius Popper, "Toldo fueguino," in photograph album of Julius Popper (1886–1887). Source: Photographic Archive, Museo Regional de Magallanes.

The photograph known as "Toldo fueguino" is part of the album composed of more than one hundred images that the Romanian-born colonizer and entrepreneur Julius Popper (1857–1893) recorded in the course of his trip to the Isla Grande de Tierra del Fuego ("Big Island of Tierra del Fuego," *Karukinká* in Selk'nam), at the southern tip of the planet, in 1886. These photographs depict different moments during Popper's expedition, which was officially supported by the Argentine government with the objective of finding gold. This expedition, and others that followed, contributed to the genocide perpetrated against the Selk'nam people. The period of extreme violence began in 1880 with the "cleansing" of this and other southern peoples from their own territory, in which they had lived for thousands of years.

Humans have inhabited what we know as Tierra del Fuego since approximately 10,000 years ago, at the end of the Pleistocene, when it had not yet separated from the continent. The continuity of these human groups with the cultures that inhabited the island when Europeans arrived is under study, but both were hunter-gatherers who moved freely throughout the territory. Borrero states: “From 1880 on, the reduction of the space available to the Indians became more marked with each passing year [...] the displacement of most of the groups towards the southern forests began to concentrate too many individuals in too small a space” (2001: 99). Thus began the economic colonization of the southern lands, as the Chilean and Argentine governments transferred hundreds of thousands of hectares to private groups (many funded by European capital), for the establishment of a sheep industry integrated into North Atlantic commercial circuits and consolidated in 1893 with the the Sociedad Explotadora de Tierra del Fuego (Society for the Exploitation of Tierra del Fuego). for a second objective involved mining exploitation, during what was called the “gold rush,” one of whose main referents was Popper himself.

In this context, part of the native fauna of the area, including guanacos, *cururos* and foxes as well as wild dogs, was persecuted by the ranchers to guarantee the superproduction of sheep. All of this radically changed the Selk’nam way of life. As José Luis Alonso Marchante has written, the Selk’nam can be considered a “civilization of the guanaco” due to the relevance that this animal had to their existence, to the point that they gave it different names depending on “the size, age, and even one’s distance from the animal” (2019: 40–41). With the unprecedented acceleration of colonization, Tierra del Fuego became a space increasingly divided by wire fences and invaded by thousands of sheep. As Casali and Harambour explain: “it was the livestock ranches, made possible by British capital in the form of sheep, that unleashed the conquest of the southern tip of America (Malvinas, north of the Strait of Magellan, Tierra del Fuego, successively)” (2021: 205).

We know that there was a genocide. Thousands of people belonging to the communities of *Karukinka* and its surroundings, inhabitants of the southernmost lands and seas of the planet, were hunted down, murdered, mutilated, humiliated. They suffered the intervention and reduction of their territories and *maritorios* (a term to designate the geographical maritime area over which a country has sovereignty, whose most recent definition appears in Ch. 3, Art. 139 of the 2022 Chilean Constitutional Proposal), saw the fauna they lived with exterminated and persecuted, their food sources reduced, and were forced to seclude themselves in missionary reductions (mainly in the missions of San Rafael on Dawson Island in Chile, and Nuestra Señora de La Candelaria in Rio Grande, Argentina). Their culture was censored, and the women and girls among them suffered various forms of sexual violence by miners and ranchers. Thousands of people, indeed, entire peoples: Selk’nam, Aush, Yaghan, Kawésqar, inhabitants of the southern region for millennia, were decimated in a period of no more than forty years.

There is a photograph. One that belongs to the collection of one of the most prominent representatives of the “capitalist avant-garde” (Pratt 2010), made during his “exploration” of those *confines*. A journey and an image that, we know, correspond to the prelude and beginning of the genocide, which makes us *see* it. But “What does it mean to see and to make one see in an image?” (Schnaith 2011: 13); and, above all, what does it mean when our relationship to it is so asymmetrical? As viewers, we are owners of an excessive knowledge, of a *vision* from the other side of the disaster, in which that world has been razed to the ground. How can we see that life apart from its aestheticization, which predisposes it to become the ruined landscape of a world *destined* to fall? How can the viewer escape the cage of colonial vision and recover in and from these images their vital power, the power of these peoples in their heteroclitic and multiform life, in the face of a reductive avant-garde?

If, before the image, we are always faced with a dislocated, complex time (Didi-Huberman 2009: 35), in the case of the photographs taken by Popper, which inaugurate in the Western imaginary the extermination of the southern peoples and the colonization of their entire living environment, viewers find ourselves doubly misaligned. Because that environment has indeed been destroyed or radically transformed, the images overwhelm us, call to us as if in a vacuum, for it is these images filled with violence that constitute syntagms to articulate a narration of what happened. It is in these images contaminated by the desire for total power that we must try to read the hidden traces of the diverse experience of peoples subjected to this damage, which is also total. Thus, we can only read “the inside from the perspective of the outside” (Fisher 2018: 13) in images replete with the shock of a *vision* that must interrogate the destiny of those forms that have been lost, of those bodies abandoned and semantized as “remains,” as remnants of a *pre-historic* time, without having more to go on than fragments produced by the aggressors.

Popper’s Photo Album

In September 1886, Julius Popper led an expedition to the south that was authorized by the Argentine Ministry of the Interior and War and financed by private businessmen, for whom the expectation of the so-called “Patagonian Dorado” was growing. In the context of the expedition, Popper took more than a hundred photographs on glass plates, recording small “feats” in the march on Fuegian nature – among them, the killing of people. Each of the images in the album has a caption that frames our reading of the visual material; some are descriptive, others are sarcastic, and many are self-celebratory, penned in a cynical tone that exposes the author in all his indolence before the destruction of the other. After the photographs of the first milestones of the journey, the album shows a sequence of different dead animals, each framed by a biting caption: “Un guanaco curioso” (A curious guanaco); “Cabeza

de león marino” (Sea lion head); “Lèse majesté”; “¿Con apio o solo?” (With celery or alone?); and “Tres esfinges” (Three sphinxes), which shows three birds whose once-vivid white necks hang inanimate from a large rock. Photographs of an alleged confrontation with dozens of Selk’nam (as recounted by Popper in 1887) follow. These images, titled “Alerta” (Alert), “Ojo a los arbustos” (Look at the bushes), and “Brotaban indios de todos lados” (Indians sprouting up everywhere), show subjects holding their rifles in front of an enemy that can only be imagined, since only the shooters are depicted. There is no certainty, therefore, of the confrontation.

We then come to the most infamous photographs in the album: four images depicting murdered Selk’nam men whose unarmed, naked bodies stand out in the foreground of the image; next to them are Popper himself and some of his collaborators carrying Winchester rifles. The connection between these images of Selk’nam and the previous set showing dead animals is notorious: both “are perceived from a hunter’s perspective” (Bajas 2005: 5). Moreover, in each of the photographs of murdered people, as Odone and Palma state: “The desolation of the landscape, the scarce presence of blood on the body, and the (apparent) absence of impacts or projectile exit marks on the corpse, attenuate the violence of the images, imprinting the exhibition of death with a cold, clean character” (2004: 426). An excess that is reinforced by the sharpness of the captions inscribed on each one: “Atleta fueguino” (Fuegian Athlete), “Muerto en terreno de honor” (Killed on the ground of honor). These are ruthless photographs, showing Popper in an unvarnished display of his imperial barbaric desire (Deleuze and Guattari 1985: 160).

The image selected here, although framed by the previous ones, is nevertheless more elusive. With the caption “Toldo fueguino,” it focuses on the remains of a Selk’nam windbreaker in the foreground. Semicircular in shape, the tarpaulin, an ephemeral dwelling structure, served to shelter the family group while in transit in the lands (*haruwen*). The Selk’nam, a nomadic people, were constantly on the move (Manzi and Spikins 2008: 85), to such an extent that the huts (*kawi*) themselves were commonly transported (by women) from one place to another, in a way of inhabiting that, as Catalina Melo Gaymer has suggested, can be imagined as a *kawi-haruwen-Karukinka* biocultural relationship, “where the hut transcends the limits towards the territory, becoming its true home in movement” (2020: 20).

In the image, the focus on the conical and semicircular shape that offers us the interior of the windbreak that was once a home amplifies the sensation of intrusion, led by the photographic eye, into the details of its modest composition of branches, vegetation cover, and hides, now shown as destroyed. Because “Toldo fueguino” inscribes from the beginning its paradox, by naming this deactivated space which is the *remains* of the Selk’nam habitation: thus, we see, disheveled and chaotic, its props and hides, its materials, as lost forms, confused with the also tangled floor of *coirón fueguino* grass (*Festuca gracillima*) in what, destroyed, is no more than the *memory* of a form – the tarpaulin –, and of a use – the shelter. And then we realize: in the center

of the photo, barely visible, the image of a woman *appears*, a Selk'nam woman, we imagine; "a ghostly figure, blurred, porous, unclassifiable [...], in the semi-solitude of the pampa" (Palma 2022: 30), before the operator's eye and ours. Wrapped in her guanaco-skin clothing, the viewer imagines her huddled over her lap, perhaps even sheltering a small child. In any case, one must imagine, since the effigy is so blurred that we cannot say anything decisive about it. Moreover, we see the woman folded in such a way that she seems immobile, petrified. Yet we know that, for her image to have reached us in this uncertain fashion, the woman must have moved, shifted in such an indomitable way before the camera that she escapes its gaze, even as the machine manages to focus on the other forms with relative precision. And in a strange effect, she seems to merge with the environment in front of our eyes, as if, before the threat of the predatory lens, the woman had induced a phenomenon of mimicry inscribing the space on her body itself.

If mimicry is an operation "by which the seeing subject is defined as a projection, as a being-seen" (Krauss 2002: 185), here it happens as if the woman, in view of the threat, exercising her "potentiality-not-to" in a kind of "turning of potentiality back on itself" (Agamben 2016: 44), had transfigured herself, and thus, in some way that we do not understand, but that moves us, we ourselves are seen by her, she who has camouflaged herself and *appears to us escaping* in metamorphosis with her imago: merging with the space, with the hut, with her home in movement.

What is it, then, that we see? The image shows a spectral body amid the destruction of its world. A body that makes us uncomfortable and disturbs us, that generates something like the "shudder provoked by what is fateful" (Krauss 2002: 197). The (dis)appearance is frightening because it happens in a human landscape from which the human has been subtracted. We are drawn in to the inscrutability of the experience of the image, yet we understand that the image summons us to follow, to linger and to speak its disappeared language, for we recognize in that uncertain figure, the trace of another word that whispers, while we imagine that the woman, having thwarted her *capture* by the predatory photographic eye, has picked up her canopy and continued on her way, not as a ruin, but metamorphosized, as memory, and as promise.

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**Visual Representations in the Andes
from the Mid-Nineteenth Century to 1950**

Typical Andean Railway

Hinnerk Onken



7. — Typische Andenbahn, Challapabrücke 4000 m über dem Meeresspiegel, Centralbahn, Peru.

“Typische Andenbahn, Challapabrücke 4,000 m über dem Meeresspiegel, Centralbahn, Peru”, in Otto Preusse-Sperber, *Süd- und Mittelamerika: Seine Bedeutung für Wirtschaft und Handel* (1913: 32).

European knowledge of Latin America has been conveyed through images since the early modern period when the continent became a destination for European expansion. This pictorial tradition received new impetus in the nineteenth and early twentieth centuries. At this time, photographic images showed an ambivalent image of this region of the world. They interacted with existing ideas and projections but also competed with them. The ambivalence becomes clear in motifs because, on the one hand, visual media showed views of Indigenous people and Inca, Aztec, or Mayan ruins. They testified to cultures that had perished or were perishing and, like

the numerous images of undeveloped and inaccessible primeval forests or rugged mountains of the Andes, stood for backwardness and the Latin American past. Railways and train stations, cityscapes, representative buildings, ports, zoos, and factories, on the other hand, painted a completely different picture. They refer to the present and future of the subcontinent. The future is also emphasized in the titles of the popular depictions like *Brazil: A Land of the Future* (Brasilien: Ein Land der Zukunft) by Austrian author Stefan Zweig (1941) and *South America: A Land of the Future for Mankind* (Südamerika: Ein Zukunftsland der Menschheit) by Swedish Geographer Otto Nordenskjöld (1927). These and many other publications portrayed the opportunities that were offered to European emigrants in the countries of Latin America in words and pictures.

Progress in the Wilderness: Conquering the Andes

The visual and textual (re)presentation of modernity and modernization clearly refers to the Anthropocene, the age in which man has become one of the most important factors influencing Earth's biological, geological, and atmospheric processes. However, like many other photographs and visual media of the nineteenth and early twentieth centuries, the image shown here points only indirectly to the multiple crises of the Anthropocene. In the anthropocenic image and the textual environment studied here, the railroad primarily represents the cultural and civilizational progress of South American nations. The photograph of the *Llegada del tren a Cuzco* on the cover of Henrique Urbano's (1992) *Tradición y modernidad en los Andes* is just as telling. Moreover, from the perspective of technical and economic history, the railroad also represents a solution for infrastructural progress. It replaced the transportation of goods and commodities by llamas and mules and thus opened up previously unproductive or less profitable enterprises in previously inaccessible regions in or beyond the Andes.

Consequently, the photograph of the Challapa bridge in central Peru, located at 4,000 meters above sea level, and the "typical Andean railway", which – for some viewers, by itself, may represent any place in the world as there is nothing specifically "Andean" in the image – points to the human transformation of nature, precisely the bridging of the ravine of Challapa. The steel bridge, designed by Gustave Eiffel and about 110 meters long, was built in 1872 during the construction of the *Ferrocarril Central Andino* (Central Andean Railway of Peru). The railroad, which reached La Oroya in 1893, Cerro de Pasco in 1904, and Huancayo in 1908, accessed the mining areas of the Peruvian Central Andes (Vivero and Milla 1996; Stephenson 1995: 82–108; Miller 1976). The image of the *Ferrocarril Central Andino*, the world's second highest (standard gauge) railroad, is thus indirectly an impressive testimony to the linking of the Anthropocene with capitalism, (internal) colonialism, and imperialism. Significantly,

Otto Preusse-Sperber's publication (1913b: picture 24, following p. 136) also includes an illustration entitled "Casapalca Mining Center in Peru."

Extractivism in mining and the associated violent appropriation and plundering of the land is part of what Fernando Coronil (2000: 358) has called "the dark side of European capitalism", echoing Galeano's (1973) metaphor of the open veins. The consequences were not only destructive to the environment, but people also suffered inhumane working and living conditions in mines, on plantations and haciendas, forced labor, and, of course, the effects of environmental damage ranging from contaminated water and soil to air pollution. Aníbal Quijano (2000) points out that rooted within this form of colonial economy is a politics and culture based on the exclusion of the "other," the Indigenous population, which he calls "coloniality of power." Rosalva Aída Hernández Castillo and Elisa Cruz Rueda (2021), who have investigated the ongoing Tren Maya infrastructure project in Yucatán, call out the project as a violation of Indigenous territories as it is utterly unclear to what extent the Indigenous population of Yucatán and Quintana Roo can benefit from this project, going as far as to claim that there is a "continuum of colonial violences." In the case of the *Ferrocarril Central Andino*, there is another connection to extractivism: its purpose was not only to open up the mining areas of the Central Andes, but also the construction costs of the railroad were financed in the late 1860s and early 1870s by loans from the Peruvian government, for which revenues from the export of guano and saltpeter served as guarantees.

However, diverse perspectives come together in the picture analyzed here: the wild (South American) Andes and the modern (European) railway. The inaccessible South American nature is conquered by the bridge, representing European knowledge and superiority. Thus, there is also clearly an aspect of colonialism. Moreover, the publication the image is taken from refers to the migration of Europeans to South America in the nineteenth and twentieth centuries and its colonial context. Not only have the effects of European trade dominance been called "informal empire" by some historians (Brown 2008), but European immigration to Latin America has also been researched using the approaches of (post)colonial studies (for the German case see Schulze 2016; Onken 2019a; Onken 2019b).

The longing for a free, self-determined life, the dream of owning land, and the hope for economic and social advancement were – referring to a well-known migration model – the most important "pull factors" that lured European emigrants to Latin America. Many other photographs showed how rich and exuberant nature was, as well as how small an individual person was in comparison. Images of untouched nature, vastness, and primitiveness at first glance seem to contradict ideas of modern metropolises and infrastructure like that seen on the photograph above. But in fact, they only appear to be incompatible. These corresponding images rather illustrate the ambivalence of ideas about and expectations of Latin America. At the same time, the ambivalent images show different facets of the same world region.

Due to the objectivity, authenticity, and factuality ascribed to them, photos lend authority to different, almost paradoxical readings. In the late nineteenth and early twentieth centuries, a photograph was seen (and sometimes still is) as a “relentless judge of the correctness of artistic conception,” in the words of German natural scientist Gustav Fritsch (1881: 213). What was captured in the picture was considered “true”; the situation depicted in the photograph occurred within the same reality, so people assumed; time and space could be frozen in the photograph. However, there is always the possibility of manipulation (photos can be posed and edited, retouched, colored, or cut up in a variety of ways); moreover, the possibilities of interpreting a photo are as diverse as the number of viewers. Photographs are not transparent documents in a “universal language.” According to Roland Barthes (1990), they are semiotic signs whose “magic” results from the fact that their supposed transparency endows different interpretations with authority.

Like the one shown here, many pictures emphasized that the infrastructure and economy in the countries of South America were already well developed and making it possible for willing immigrants to exploit mineral resources or engage in agriculture and trade without great difficulty. This goes not only for “developed” countries of the Southern Cone but also for Andean countries like Peru. The photographs in the publications of Otto Preusse-Sperber (1913a; 1913b), a German geographer and an expert on German emigration, show, for example, that even the inaccessible Andes had a railroad infrastructure, that mining was carried out with modern technology and that in a metropolis like Lima, living was well and easy.

Preusse-Sperber first emigrated to Argentina and also knew Peru very well. He later lived in Brazil and then in New York, where he became editor of the *American Universal Correspondent* and a member of the National Geographical Society in Washington. In the 1920s, back in the German Reich, he headed the Reich Association of German Emigrants (Wagner 2006: 192). To make planning for emigration, trade, and investment more accessible, Preusse-Sperber’s and other handbooks and advisers provided not only general information on climate, economy, and population, but also specific information on converting weights and measures, addresses of consulates, and much more.

At the same time, in order not to give adventurous and civilization-weary Europeans the impression that South America was not at all, or at least not significantly, different from Europe, Preusse-Sperber’s publications (like many others) included pictures of untouched and rough landscapes that challenged the pioneering spirit. Popular motifs were the jungle, the wild and rugged Andes, deserts, and the vastness of the pampas. Photos from South America thus aroused the longing for freedom and adventure, for a simple and honest life in a harsh environment, which for *fin-de-siècle* Europeans, tired of civilization, represented a foil to the perceived decadence and excessive security of their own lives. This form of escapism drew on a tradition of colonial fantasies dating back to the first accounts of the New World in the six-

teenth century. As Susanne Zantop (1997) has shown, these colonial fantasies were very popular in the early nineteenth century in novels, plays, and songs about (fictitious) German conquistadors on a civilizing mission in South America.

Peruvian art historian Natalia Majluf (2013) confirms what the photo shows: namely that people are either not depicted at all in many landscape photographs or appear only very small. Thus, these images not only stimulated, as mentioned, the thirst for adventure and the pioneering spirit of Europeans who wanted to escape the confines of their homes. Another function of such images was to outline the legitimacy of land grabs by settlers or colonists, and even the legitimacy of military campaigns of conquest carried out in the nineteenth and twentieth centuries by the Argentinian and Chilean armies. According to the impression given by most of these images, the Indigenous population did not appear to be an obstacle to modernity and progress. *Indígenas* are not even visible in the photos discussed here. Rather, they provided the entrepreneurs with the necessary workforce – at least until they fell victim to the principle of the “survival of the fittest” and died out due to their assumed “racial” inferiority.

In the nineteenth and twentieth centuries, like the Argentine desert, the Chaco, or Chile’s Araucanía south of the Bío Bío, the rough Andes were also taken over, developed as an economic area, and embraced by progress. Only Europeans (or “white” people of European origin) and European knowledge put the land into use. The idea was that it had been desert previously and was not used or not correctly used by the Indigenous inhabitants. The image of the railway, which advances over the bridge into the Andes, is thus also the visualization of conquest – a European conquest of natural space.

Moreover, through pictorial recording, remote regions uninhabited or hardly inhabited by whites and mestizos were appropriated and also mentally incorporated into national territories. This is not unique to Peru or Latin America, but can be observed as well in North America and all over the world. For instance, Alison Rowley (2013) describes a similar process for Russia, where picture postcards in the late nineteenth and early twentieth centuries were used for (mental) integration into the imperial empire. Jens Jäger (2008) describes similar processes for the German colonies in Africa, and Pelle Snickars (2001: 95) states that people in Sweden by 1914 knew their country mostly through postcards.

Conclusion

At first glance, the photographs analyzed here appear to show a well-known dichotomy of tradition and modernity, of nature and civilization, of past and future. But as the studies in this volume and others show, the images were seen ambivalently (Onken 2019a). Their relationship with each other and other media and

discourses is characterized by reciprocity. The magnitude of the achievement of the bridge construction and the infrastructural development of the Andes by the railroad becomes even clearer when compared with the numerous images of the mighty mountains, the rugged world of the Andes, rough and hostile to human development but ultimately unable to resist the forces of progress. Thus, the European idea of “conquering” the Andes (be it with railways or in alpinism) differs fundamentally from the idea of togetherness of man and nature, which is expressed in the worship of the Pachamama or in *sumak kawsay* (*Buen Vivir* or Good Living) (Cortez 2021).

As in the case of the Argentinian “conquest of the desert” or the Chilean occupation of Araucania – contemporarily and apologetically called “pacification” (Kaltmeier 2026) – the development of the Andes also can be qualified as a process of inner or internal colonization. The American art historian William J. T. Mitchell aptly wrote about this supposed expansion of “culture” and “civilization” into the “natural” space which was imbedded in the imperialism discourse: “Empires move outward in space as a way of moving forward in time” (Mitchell 1994: 170).

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Railroad Construction in Chiguacán

Olaf Kaltmeier



José Grijalva, *Trabajos en el ferrocarril en Chiguacán* (1907). Oil on canvas, 72 x 94 cm. Source: Museo de la Casa de la Cultura, Quito.

The railroad was the emblem of the nineteenth century. For this reason, historian Jürgen Osterhammel chose the image of a steam locomotive for the cover of the German version of his masterpiece *The Transformation of the World: A Global History of the Nineteenth Century*. In the debate surrounding the Anthropocene, James Watt's invention of the steam engine in 1784, with the subsequent industrialization, acceleration, and the massive exploitation of natural resources involved in the new energy regime based on carbon, constitute fundamental aspects for understanding the beginnings of global climate change. For Paul Crutzen and Eugen Stoermer (2000), these aspects in fact mark the first phase of acceleration of the Anthropocene start-

ing in the second half of the eighteenth century (Bonneuil and Fressoz 2016: 50–51). As already foreshadowed in Osterhammel's subtitle, the use of steam engines was a global phenomenon, and in the second half of the century, the railroad in the Americas was one of the most important instruments of internal colonization and the transformation of landscapes.

In Ecuador, the story of the great trans-Andean railroad project was promoted by conservative president Gabriel García Moreno, as part of his plan for the Catholic modernization of the country in 1861. The railway megaproject progressed slowly, resuming after the Liberal Revolution and the inauguration of Eloy Alfaro, who reinitiated construction in 1899, once engineers had figured out how to overcome the obstacle of the emblematic geological formation Nariz del Diablo (Devil's Nose) in the province of Chimborazo. The Nariz del Diablo was painted in 1905 by Luis Graves in a work that included the future train and it was also depicted in Hans Meyer's photographs of 1907. On June 17, 1908, the monumental railway project was completed, connecting the two most important cities in Ecuador: Quito in the highlands and Guayaquil on the coast.

The construction of the railroad was an instrument for integrating the coast, a place of trade and agro-export plantations (especially cocoa), with the highlands, the financial and political capital and home of the traditional landed elite. This national integration through the acceleration of transport was also instrumental in terms of the expansion of capitalism (Clark 2004). The quest for progress and civilization was so pervasive that it transcended political divides between liberals and conservatives. For the elites, the control of and the fight against nature were the key to opening the door to universal progress. This attitude was shared by local artists, who also expressed fascination with the railway megaproject: "thus we find that artists such as José Grijalva, in medium-sized paintings, documented the felling of forests and the construction of large iron bridges through which the train would travel, one of the most difficult engineering works in the world" (Kennedy-Troya 2015: 174).

In the oil painting *Trabajos en el ferrocarril en Chiguacán* (Railroad Construction in Chiguacán) from 1907 – one year before construction was finished – Grijalva depicts the transformation of the relationship between society and nature, as well as the transformation of the real and imagined landscape brought about by the arrival of the railroad. The work is part of an artistic tradition of landscape painting in Ecuador that promoted a vision of modernization and progress. Especially after the Chicago World's Fair in 1893, Ecuadorian elites rejected earlier representations of the country linked to pre-colonial cultures and wild nature. Instead, utilizing the language of art, they endeavored to enshrine the country's history in the dynamics of civilizing progress, defined from a European perspective. *El Diario de Avisos de Guayaquil*, organ of the commercial-liberal coastal elite, published the book *El Ecuador en Chicago*, representing modern Ecuador for a global audience (Haro 2017: 3).

During the second half of the nineteenth century, Ecuadorian landscape painting was influenced by scientific research, especially in the earth sciences and botany (Kennedy-Troya 2015: 19). Alexander von Humboldt with his South American voyage (1799–1804) and, especially, his stay in Ecuador was undoubtedly the most influential figure in this respect, but other European naturalists followed in his footsteps. The Ecuadorian Andes are characterized by high volcanic activity, which is also reflected in everyday experiences; and in this period the volcano became the reigning iconic motif of the landscape. Relevant in this regard is Humboldt's drawing of the Chimborazo volcano in which he depicts the different ecological phytogeographic floors depending on the altitude, as well as his multiple geological studies. The artistic narrative of the landscape developed in harmony with the natural sciences and had a high impact among political elites. Conservative-Catholic president Gabriel García Moreno described his country as a "vulcanized homeland," contributing to this emergent imaginary. Landscape painting became a way of knowing and understanding the country's natural characteristics based on scientific criteria: "the new enlightened and romantic spirit forced artists to feel like *scientists*, who could and should *illustrate* in order to understand [...] Making a nation, describing the surrounding landscape and understanding our geophysical and human constitution – scientifically speaking – seemed to be part of the same mission" (Kennedy-Troya 2015: 32–33).

José Grijalva's *Trabajos en el ferrocarril en Chiguacán* echoes this mission, but also adds a new dimension: the painting addresses how man became a geomorphological-geological force in the transformation of the landscape. Art historian Trinidad Pérez sums up the scene represented by Grijalva as follows:

The experience of the human conquest of a nature that sometimes appeared impenetrable, sometimes violent, reached a peak with the construction of the railroad, one of whose main branches was completed in 1908. In a painting from 1907, José Grijalva documents this adventure in which that magnificent landscape at the jungle's edge is brought down to make way for progress and modernity. (Pérez 2007: 130)

Trabajos en el ferrocarril is structured using central perspective, the fundamental modern technique for fixing three-dimensional space in two-dimensional painting, in which the total space of the painting is organized around a vanishing point on the horizon. (Kaltmeier 2012) In this way, mountains, trees, fields, buildings and people are positioned relative to the vanishing point, simulating spatial distance by means of variation in sizes. During the modern era, this technique became the only representation of space that was considered authentic and true. However, this visual regime also creates an observer who appropriates and controls the landscape: "Landscape is thus a way of seeing, a composition and structuring of the world so that it

may be appropriated by a detached individual spectator to whom an illusion of order and control is offered through the composition of space according to the certainties of geometry” (Cosgrove 1984: 55). In this sense, geometric perspective is a key modern technique for organizing and structuring the space of the image. The central idea is that perspective depends on rays of vision that depart from the viewer’s eye to converge at a vanishing point on the horizon. Analyzing the painting’s space in relation to the position of the viewer, we can see that eye level is in the lower third of the frame, suggesting that the viewer is looking at the scene from a certain height, giving them even more power and control. In addition, the viewer’s gaze is drawn from left to right, which corresponds to the Western way of reading texts, and whose direction has a connotation of progress. Through these techniques, painting creates a subject-observer characterized by the desire for ownership and control of the natural landscape; in the Ecuadorian post-colonial context of the early twentieth century, this subject corresponds to a male, *mestizo*-white, educated, modern, and adult elite.

To continue exploring the organization of space within the painting, we can identify central lines, extend them and observe where they intersect (Taylor 1957; Kress and van Leeuwen 1996: 47). Abstracting from the forms that make up the image, we observe that the space is organized by triangles such as the volcano in the background, the forest on the left, the wooden construction for surveying, as well as the path of the lane marked by the riders and workers on the left side and the wooden logs on the right.

On the left side of the image, the edge of the Andean tropical forest is represented in the romantic-scientific style, with many details such as epiphytes, undergrowth, and unique trees. Although from a human-centered perspective the forest is considered to be hostile, an observer assuming a more than human perspective can observe “the hospitality of trees” that create symbiotic communities of great biodiversity (Casey and Marder 2024: 82–93). From left to right, the forest is reduced by the clearing carried out by railway workers. The forest is dark in color, which associates it with darkness and reinforces the impression that it is an element of the past, destined to disappear due to the construction of the railway. In the image’s composition, the jungle is the antagonistic element to progress, the epitome of wild nature destined to be destroyed by man.

A volcano – probably the Chimborazo – occupies the center of the image, but in the background. Because it is the background, it appears clearly, but without much detail. The sharpness of the volcano alludes to artistic traditions of a sublime landscape, in which mountains – and in the case of Ecuador, volcanoes – appear as sacred places. The U.S. American painter Frederic Edwin Church, of the Hudson River School, introduced this romantic-religious conceptualization of landscape in Ecuador in the mid-nineteenth century (Kennedy-Troya 2015: 31–33). At a connotative level, one can say that the volcano represented in the oil is a synecdoche, a *pars pro toto*, of the nation. Such use of the volcano as a symbol of the nation was indeed

common in Ecuador at the time, from García Moreno's expression of "a volcanic country" to the representation of a volcano on the national coat of arms since 1845.

Yet Grijalva does not limit himself to reproducing this symbolism: he plays with the triangular, iconic shape of the volcano, and complements it with other triangles that structure the image. The triangular shape is repeated in the wooden construction where three men work. In an allegorical representation of the unity of the nation whose construction is underway, an Indigenous, an African-American, and a mestizo-white man – the three most important ethnic groups – work together to build railroad tracks to advance the nation's progress. The African-American represented here may have been a contract worker, as thousands of Jamaican workers were brought to Ecuador for the construction of the railroad. In any case, they are not represented as equals. The mestizo-white man, wearing modern occidental clothing, is seated and obviously directs the work of the others. Not only are Indigenous and Afro-Ecuadorians subordinate, but also women who are absent from this image of the nation.

Within this triangle, the work of nation-building is carried out by means of mestizaje and the subjugation of nature. Other triangular shapes, also related to the anthropogenic alteration of the forest, emerge along the line of men and animals on the left down the center of the image, where it almost meets the line formed by the pile of stacked trunks. Compared to the living tree community, the dead trunks resemble the battlefield of an ecocide. The living tree is reduced to a dead resource, in this case wood, for human exploitation. (Scott 1998) Two long logs, parallel to those in the stack, create other triangular shapes in the space disassembled for the construction of the rails. Outside these triangles, we see – in dark colors – the persistence of the wild forest, destined for deforestation on the path of progress of the nation and civilization.

The painting is entitled *Trabajos en el ferrocarril en Chiguacán* (Railroad Construction in Chiguacán); however, the railroad itself is not represented in the canvas, but rather stands out precisely because of its absence. What is present is a void of felled forest. The painting thus refers to a metonymic sign in which one element, the railroad, is associated with another element: the idea of progress, so that the railroad comes to represent progress. This representation of progress is reinforced by the absence of the railroad, which introduces a notion of time into the scene, since it is under construction; it symbolizes the path to progress: the railroad is about to arrive. María Beatriz Haro refers to this type of representation as "landscapes-in-progress" (2017: 7), in that they show the geomorphological and geological transformation of the natural environment by the self-proclaimed civilized man whose goal is to be inscribed in the universal history of progress. In this sense, Grijalva's oil expresses an attitude similar to the paradigmatic image of the ideology of Manifest Destiny, John Gast's *American Progress* (1872), in which the railroad is also one of the vectors that

promote progress via the extinction of the buffalo and the genocide of Indigenous nations.

With this representation of the landscape of the Ecuadorian Andes, Grijalva goes beyond the existing trends of Ecuadorian landscape painting, which had focused primarily on the romantic-scientific representation and exploration of the national countryside. For Grijalva, nature is not a given; what is important is not simply its existence, but rather its quality of being subject to manmade transformations. Art historian Alexandra Kennedy-Troya even talks about the formation of a new “generation, still understudied, of artists” as a result of the construction of the railroad (Kennedy-Troya 2015: 42). At a symbolic-religious level, Grijalva replaces the romantic expression of the divine in Ecuadorian nature with a utilitarian-technocratic notion of nation-building and progress. In a country characterized by Catholicism, the national unity in difference of the three ethnic groups under the guidance of scientific technology also invokes the Trinity, which represents the one God.

While the volcano represents a naturalized image of the nation that is timeless and eternal, Grijalva shows the transformation of the landscape and the nation by man. Grijalva is thus probably the first Ecuadorian painter to depict how the human being becomes a geomorphological-geological force in the transformation of landscape. At the same time, his image shows an emerging technosphere, represented by the railroad track, as well as the clearing and control of the landscape by surveying instruments. However, the image does not show the costs, including human costs, of railway work. Thousands of workers died, especially from yellow fever, a disease that was introduced from Africa via the trade in enslaved people in the Americas in the sixteenth century, becoming one of the most dangerous diseases in the region in the nineteenth century (Oldstone 2000: 45). In relation to land use, Grijalva's oil also contains significant omissions. The painting, as we have seen, shows the antagonism between pure, wild nature and the struggle of Western man to civilize and transform the natural environment into a technosphere; however, the role of the Indigenous peoples of the region, who for centuries had created agricultural and livestock-based landscapes of subsistence in the Andean highlands, as depicted in Luis Martínez's 1905 oil painting *Paisaje (Con chozas, sembríos y montañas)* (Landscape [With Huts, Fields, and Mountains]) (Kennedy-Troya 2015: 67–68), remains invisible.

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The Coalman

Trinidad Pérez Arias



Eduardo Kingman , *El carbonero* (1934). Source: Private collection.

El carbonero (The Coalman), a 1934 painting by Eduardo Kingman (Ecuador 1913–1997), portrays the coal loader and deliverer, a day laborer who subsisted by serving the needs of a port and the city. At the time, it was one of the most precarious jobs in Guayaquil, the main Ecuadorian port city that was in the process of modernization and the one that concentrated the greatest wealth in the country, thanks to its participation in the production and export of cacao, as well as in the related capital market. Looking at the painting from the front, we see the image of a man sitting on a sack of coal. His back is hunched; his arms, with veins still swollen from recent effort, extend over his legs; his hands fall in front of his knees; his body, in short, appears tired after an exhausting day's work. This exhaustion is also expressed in his face – his frown, his gaze fixed on a distant point, his mouth and cheeks tense – in a mixture of weariness and resignation. He wears a torn, dirty shirt and pants, and his feet are bare. Next to him, some sacks piled up next to the outer wall of a building signal the arrival of the coal at its final local destination, the port.

The painting refers, in the first instance, to the drama of social injustice in the paradoxical scenarios of urban modernization. However, the work of the coalman also alludes to the broad context in which it took place, since the steamships that navigated the Guayas River basin and in the Pacific depended on his transfer of coal. These ships operated precisely by means of the combustion of firewood and charcoal extracted from the surrounding forests. The Guayas River basin – formed by the current provinces of Guayas, El Oro, and Los Ríos – is the most fertile in Ecuador, and perhaps of the entire South Pacific coast. At the time, this basin had many forests composed by a great diversity of trees, which produced good timber for both the construction of buildings and the manufacture of ships. It was also the hub of cacao cultivation, which became the country's main export product during two periods, from 1779 to 1842 and from 1885 to 1912 (Chiriboga 2013: 21, 28). The last cacao boom not only inserted the country into international capital trade but also into the modern world. In *El carbonero*, Kingman highlights the figure of one of many workers involved in the production and transportation of raw materials that would bring the city of Guayaquil and its area of influence to its peak. However, the coalman represents the dark side of this modernity, which has been possible thanks to the workers' labor and the exploitation of nature.

During the second cacao boom, which turned Ecuador into the largest cacao exporter in the world between 1870 and 1920, the fruit was produced on large estates located in the wide basin of the Guayas River. The cacao was taken to the port of Guayaquil through the river system and then shipped from there to foreign destinations by means of steamships propelled by the combustion of coal or firewood. Hence the need for coal in the port, which was stored in warehouses or transferred by coalmen directly to the ships. The work of the coalmen was poorly paid and con-

demned the day laborers to extreme poverty, probably at the bottom of the economic ladder. Their wages depended on the strength and endurance of their own bodies.

The painting *El carbonero* condenses a reality by highlighting the precariousness of the work of the coal loader, who, exhausted, has claimed a moment of rest. It also highlights the dignity of this work, since this strain is what sculpted the majestic body that we see portrayed in the painting. Thus, the painter highlights the centrality of humans in the extraction of energy; they are the protagonists of work and progress. And while the human body is the machine that makes this movement towards modernity possible, it is also he who suffers its consequences. This article explores the ways in which *El carbonero* entails a series of meanings related to the modernization processes in Guayaquil in the early twentieth century. It examines how Kingman's coalman points to the social and ecological tensions brought about by modernization; how the country's insertion into the international capital market through the export of raw materials – especially cacao at this time – implied a loss of the Guayas River basin's biodiversity; what consequences the expansion of such basin had on the workers; as well as what effects this expansion of the agricultural frontier and the intensification of river navigation in steamboats had not only on the workers' bodies, but also on the environment.

Kingman and Social Realism

In 1934, a very young Eduardo Kingman began his artistic career fully embracing social realism, a movement until then practiced mainly by writers in Ecuador. According to Andrea Moreno Aguilar, the painter lived in Guayaquil with his mother and siblings at that time and, despite his young age, had identified with the rebellious and critical climate that characterized the city's most radical intellectual and political sectors (2010: 34). Kingman aligned himself with the ideas of the writers of the Guayaquil Group, who revolutionized the literary field by making the popular sectors their subjects, focusing on their daily lives and appropriating and revalorizing their speech (Moreno 2010: 34). Kingman was in tune with this Social Realism in the five works he painted in 1934: *El carbonero*, *Los trabajadores de la White*, *Cacaoteros*, *Balseros* and the ink on paper *El obrero muerto*. In these paintings, he denounced the labor exploitation and living conditions to which rural and urban workers were subjected as modernization processes deepened, demonstrating his solidarity with them and supporting their struggle. In doing so, Kingman visibilized them as social actors. The workers depicted in his art were poorly paid, impoverished day laborers who commuted between the city and the countryside. His paintings brought to light the contradictions of a modernization that was advancing at an accelerated pace, enriching some and pauperized others.

The visibility of these tensions led Kingman to raise controversy. In 1935 he participated in the Annual Exhibition of Fine Arts with *El carbonero* and was denied the Mariano Aguilera Prize, which caused the artistic and intellectual community to question the legitimacy and validity of the contest. Eventually, in a new edition of the contest in 1936, he was awarded that recognition. That dispute not only restructured the contest rules but, more significantly, reconfigured the art scene, giving avant-garde artists control over their own field. It was precisely at that time when the artists of Social Realism assumed a critical stance in the face of social reality and participated in social struggles from that position. They acted as observers and interpreters of reality. *El carbonero*, like other paintings of the time, draws our attention to the labor conditions prior to the 1938 enactment of the labor code and denounces them. And in this way, through his art, the artist joined the workers in their struggle. The image of the coalman, with his ragged clothes and his fatigue, does precisely that, by exposing the inequalities produced by the rapid modernization of the city; the abrupt changes in territoriality; and the displacement of populations as a consequence of the private exploitation of resources and the expansion of their area of control, which pushed peasants and small farmers aside.

The Coalman in the Processes of Modernization

By focusing on the coal loader at the port, the painting also points to the context in which the coalman's activity takes place. This is the expansion of the agricultural frontier in the Guayas River basin, the opening of the country to the international market through the export of cacao and the introduction of the steamship. All these actions had an impact not only on human beings – the workers – but also on nature.

Guayaquil is located in a privileged natural environment, between a natural harbor of deep and quiet waters and a wide river basin that reaches the very foothills of the Andes Mountains. Ronn Pineo describes it as

an area covered by the Santo Domingo-Bucay alluvial belt coming down from the Andes. This land is known especially for its remarkable humidity qualities [...] With abundant but not excessive rainfall, warm but not oppressive temperatures, a thick layer of rich Andean alluvium, an exceptional river network, and the excellent river port of Guayaquil; the region could boast an impressive array of natural economic advantages for agro-export. (1994: 253)

According to Fernando Hidalgo Nistri, until a little more than a century ago, a long strip west of the Andes (except for the edge closest to the sea), from the Darien in present-day Panama to the southern border of the province of Guayas, was covered by an immense and dense tropical rainforest filled with a highly diverse flora and

fauna. Guayaquil itself was engulfed in a tangled forest. However, this forest has been shrinking and moving further and further away from the city and the Guayas basin itself, as a result of human activity. Based on the chronicles of the first Spanish conquistadors and others that describe it throughout the centuries of colonization, Hidalgo Nistri was able to reconstruct the image of the landscape at that time and concluded that, in the eighteenth century, this area was still a virtually impenetrable jungle. Even in the nineteenth century, Kolberg, Enrico Festa, and Teodoro Wolf attested that the forest was still populated by gigantic evergreen trees, which could measure 3 to 4 meters in diameter and reach 40, 50, or even 70 meters in height (Hidalgo Nistri 1997: 83–86). This wooded image of the city and the Guayas River basin would begin to change in the second half of the eighteenth century, with the expansion of cacao cultivation and export. Thus, the landscape that the first Spanish conquerors observed in the sixteenth century had been significantly transformed by the nineteenth century, and by 1930 had practically disappeared. Although Ecuador managed to become the world's leading exporter of cacao, and later of bananas, it did so at the cost of reducing the diversity of native forests in favor of monoculture, which would have serious environmental consequences.

Timber, the River Trade, and the Steamship

The Guayas River basin, made up of hundreds of small and large navigable rivers, was a true communication and transportation network. This was harnessed by its first settlers, who were skilled sailors. They used the timber from the rich tropical forest for the construction of their ships; however, their level of timber extraction did not affect the natural regeneration processes of the native flora and fauna.

Towards the end of the colonial period, mainly between 1763 and 1771, Guayaquil became the most important shipyard on the Pacific coast, largely due to its proximity to forests rich in fine, durable, and highly buoyant lumber. However, at the same time that a shipbuilding industry was developing, ancestral traditions of log transportation along the estuary were maintained, perhaps dating back to the time of the first settlers of the region before the arrival of the Spaniards. For example, the felled trees were dragged to the nearest river, where they were tied into rafts and, with the help of the current, floated to their destination (Franklin 1984 [1945]: 99). This way of transporting wood, which continued at least until the mid-twentieth century, was illustrated by Kingman in another of his 1934 paintings: *Balseros* (Rafters).

The shipbuilding industry in the Guayaquil harbor would noticeably decline with the introduction of steam navigation in the second half of the nineteenth century. The steamboat was introduced in the Gulf of Guayaquil in 1841 when the first vessel of this type was built in the Guayaquil shipyard; and this would also be the first one to be manufactured in the Latin American Pacific Ocean. Steamboats operate by burning

firewood and coal, so the wood extraction from the Guayas River basin was also used for these purposes, as well as for the boilers of the railroad, once it began to operate in the late nineteenth century.

In his chronicle of his trip through Ecuador in the early 1940s, Albert Franklin described the artisanal methods used to manufacture charcoal on the banks of the Guayas River tributaries. He reported observing “a pile of mud and straw, which again began to produce a little smoke” (102). These were charcoal ovens. Franklin writes that

all these haciendas and the *cholos* (mestizo workers) and *montubios* (coastal peasants) who live along the river, make charcoal to sell to the *balseeros* (rafters) and boat captains who sail downriver, who in turn sell it in Guayaquil. Guayaquil consumes a large amount of charcoal. Many *montubios* make a living and support their families by making charcoal and taking it downriver. All along the coast of this river there are charcoal and brick kilns. (1984: 103)

Coal could generally be processed from waste wood used for housing and shipbuilding (Wunder 1996: 22) and, until recently, at least two types of wood were combined.

The steamship, which revolutionized transportation throughout the world, also did so in Ecuador. During the second half of the nineteenth century, the first steam-powered river navigation companies appeared. The first, created in 1863, bore the emblematic name of the basin through which it would navigate: the *Compañía de Navegación del Guayas a Vapor*. Jean-Paul Deler states that between 1863 and 1887 there were about ten steam navigation companies in Guayaquil and, by 1910, at the height of the cacao boom, forty-six river steamers were navigating the Guayas river and its major tributaries. According to this author, although many of these boats were assembled locally from shipments of spare parts from U.S. shipyards, others were second-hand vessels and some were built in Guayaquil and equipped only with imported machinery (1994: 314–15).

The introduction of the steamship, however, brought some negative consequences. Deforestation was not only due to the demand for wood for navigation and the need to expand the agricultural belt, but also to meet the new demand for firewood and charcoal. In her study “Cuando los montes se vuelven carbón: La transformación de los paisajes en los alrededores de Quito 1860–1940” (When the mountains become coal: The transformation of landscapes around Quito 1860–1940), Pilar Pérez explores the radical change that the native forests of the north-central region of the Ecuadorian highlands underwent at a time of intense modernization and urbanization, when the woodlands were cleared to convert them into agricultural fields (1995). The introduction of steam navigation and its demand for firewood and charcoal for its boilers would undoubtedly have a similar or perhaps greater effect on the ecosystem of the Guayas River basin.

Images of Progress and the Crisis of Modernity

The introduction of the steamboat was so important in the imaginary of progress in Ecuador that it was early on incorporated as a national symbol. The version of the Ecuadorian coat of arms approved by Congress in 1845 depicts a steamboat sailing over the great Guayas River basin with the Chimborazo in the background. The image was promulgated by a decree written by the liberal politician and poet José Joaquín Olmedo, which stated that it should include a “steamship with a caduceus [staff carried by Hermes in Greek mythology, symbol of trade] as its mast as a symbol of navigation and commerce, which are the source of Ecuador’s prosperity” (Sosa Freire 2011: 62). This iconography was ratified in the coat of arms approved in 1900, which kept it as the central image, although the sides were modified; and it is the coat of arms still in force today. That is to say, shortly after the introduction of steam navigation in Ecuador and in the Guayas River basin, the steamboat had already been incorporated as the symbol of the progress and modernity that the nation had to achieve. This goal would indeed be achieved when Ecuador was introduced to international trade through the export of cacao.

Ecuador’s coat of arms represents a discourse based on faith in progress. This optimism contrasts with the grim image of Kingman’s coalman, which, we could say, presents the dark side of modernity: the impact of the processes of industrialization and modernization on human beings and nature. It represented a change of era, of accelerated expansion of the agricultural frontier and intensification of foreign trade through the introduction of steam navigation. All this implied a significant impact on the ecosystem of the Guayas River basin. If, as Paul Crutzen suggested, the introduction of the steam engine initiated the Anthropocene era, a new time in which human activities begin to have a radical impact on nature (Angus 2016: 50–53), the introduction of the steam engine in Ecuador – in navigation and the railroad – certainly illustrates this argument.

Kingman’s *El carbonero* represents a new type of worker, born of the introduction of the steam engine, operated by burning coal. He may have moved from the countryside to the city, once his way of life in agriculture was modified. His vigorous and strong body, shaped by the work he performs, is nevertheless exhausted. His fatigue is physical and moral. His poor clothing indicates the conditions of labor exploitation that the agro-export economy was causing. Thus, the painting by Kingman represents the tensions that the processes of industrialization and modernization produced on nature and life in the territories irrigated by the great fluvial system of the Guayas River.

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The Afternoon

Ann-Kathrin Volmer



Jesús María Zamora, *La tarde* (1943). Oil painting, 81 x 106 cm. Source: Museo Nacional, Bogotá.

Landscapes can be seen as a space in which features of the Anthropocene become visible. In the last decade of the nineteenth and the first half of the twentieth centuries, landscape painting played an important role in Colombian art. During this period, artists including Roberto Páramo, Andrés de Santa María, and Jesús María Zamora, in their search for representative images of Colombia, incorporated motifs such as mountains, rivers, and forests into their work. This article focuses on Andean rural spaces as represented by artists of the Savanna School (*Escuela de la Sabana*), and on how aspects of the Anthropocene are depicted in their art. A central motif in paintings from this Andean zone is the hacienda, whose presence is related to changes in land ownership, land use, and in the scheme of agricultural production: anthropogenic issues that are analyzed in the following pages.

This article is divided into three parts. The first describes the historical context, the genealogy of landscape painting, and its role in the creation of an imaginary for the young Colombian nation. The second part focuses on the *Escuela de la Sabana* and its specific characteristics as a site of artistic production. The third part analyzes an image by Jesús María Zamora in relation to the anthropocenic aspects mentioned. Although the example in question pertains to a specific Andean region, the search for a national imaginary and the socioeconomic and ecological importance of the hacienda were trends that were also relevant for other Andean countries during this period.

To understand the historical context of landscape painting, it is useful to begin in the period of independence (1810), which brought with it the task of forging a national image for this new geographical unit. To this end, a chorographic commission was created that conducted expeditions between 1850 and 1859 with the purpose of “generating an image of the villages, the cantons, the provinces that constitute New Granada and representing them in large chorographic charts, containing [...] ‘all the details worth noting’” (Restrepo 1999: 35).

The national government’s goal was to gain a deeper understanding of this new and diverse region, as well as to promote governability in the country. In this respect, some authors indicate that this process also served to legitimize the dominance of white elites. Among the elements of national identity that the commission contributed to building were representations of the landscape that emphasized the possibility of establishing emotional connections (Restrepo 1999). Along with the work of the chorographic commission, Colombian landscape painting is related to the literary and pictorial depictions of a growing number of travelers who, in the second half of the nineteenth century, sought to “represent the interests of the elites, to link themselves to this stage of the world-economy and to this phase of European expansionism” (Muñoz Arbeláez 2010: 177).

In this context, Colombian landscape painting emerged as a mainstream art form (from the late nineteenth century to 1950) whose purpose was to convey the potential of Colombia’s natural capital to national as well as international viewers. It was “an idealized painting that sings the natural beauties of the country, praises its valleys and mountains, extols its coasts and rivers, lauds its flora, exalts its topography and glorifies its sunsets, all the while showing a great admiration for the European tradition of landscape painting, and not precisely that of modernism” (Serrano and Acevedo 1986).

The founding of this school of art can be traced to Professor Andrés Santa María who gave the first course in landscape painting at the National Academy of Fine Arts (Hernández Ortega 2021), significant for being the first manifestation of modern art in Colombia (González 1986). The *Escuela de la Sabana de Bogotá* emerged within the Academy; it was neither homogeneous nor bound to strict guidelines regarding artistic production. However, its artists shared the objective of presenting the envi-

ronment of the Bogotá savanna in a nationalist tone. In explaining their work, the artists' intentions in choosing a certain motif or color were clearly to provoke emotional responses in their spectators. In this regard, the landscape paintings of the Escuela de la Sabana differ from others such as those painted by the members of the Humboldt school a century earlier that adhered to a naturalistic approach.

In a bulletin published toward the end of this landscape era in 1949, Luis Augusto Cuervo highlights the work of Jesús María Zamora and his link with the homeland, as well as his romanticization of the landscape and the mission of transmitting possibly patriotic sentiments. He also addresses Zamora's relationship with travelers' literature such as *La Vorágine* (Rivera: 1924), a novel that includes notable descriptions of Colombian landscapes. Cuervo's text emphasizes the artist's project of creating a representation of Colombia abroad with the intention of showcasing its beauty: a modern conception of art (Cuervo 1949: 459).

Jesús María Zamora's painting entitled *La Tarde* (The Afternoon, 1921) depicts the landscape of the Bogotá savanna. The work consists of two distinct sections: the upper, which exhibits the presence of the Andes mountains, and the lower, a pasture with five cows that unfolds as the center of the composition. Elements relating to nature, such as plants, animals, and mountains, appear in conjunction with the absence of human beings. This feature is characteristic of the Escuela de la Sabana, whose paintings rarely incorporated the human presence (Hernández Ortega 2021).

The lighting of the Andes, reflecting pink and red hues, gives the scene the feeling of sunset, adding depth and dimensionality to the composition. The sky is clear, with the presence of a single cloud indicating the point where the mountains end and the sky begins. More than just light, this mountainous landscape "invites a certain melancholy as a result of conceiving the landscape as sensation and not as simple observation" (Sura 2025).

This luminous representation, associated with the Andean light, is linked to the lower section of the image, where the bottom limit of the Andes is defined by a forest delineated in darker shades with little precision, as if to deflect interest in discovering what is there. In this visual representation, anthropocenic elements stand out; these are related to the organization of the environment by human beings and changes in land use. Despite the absence of humans, the painted landscape bears witness to their activity: the hacienda, the pasture, and the cows of this region.

The grassy foreground, with its palette of green tones and the cows as the central element, offers a more defined representation of the landscape, inviting viewers to focus their gaze on this section of the image. As if to highlight the pasture's origin as a forest, a small tree has been preserved, discreetly located in the middle of the pasture.

Palacios and Safford (2012: 380) emphasize the importance of cattle ranching in the savanna and link it to changes in land ownership, when Indigenous community lands disappeared and became haciendas. This situation, together with the demand

for labor in the torrid coastal zone for the cultivation of *cinchona* (quinine) and tobacco, led to a decrease in food production and a search for activities requiring a smaller workforce. In this context, much of the land was converted to grazing land.

Concepts of landscape in cultural geography connect social identities with territorial, military, nationalistic, and colonial relations as they are represented on maps or paintings (Cosgrove 2002: 22). Iconic figures of nature and the national landscape have played an important role in shaping modern nations; they are the visible expressions of a natural relationship between people or a nation to the territory or nature that it occupies (Cosgrove 2002). In this case, the iconic figures are represented by the Andes in the background, as the three Andean cordilleras constitute an important region in Colombian geography. Together with the grassland, which is clearly man-made, the image represents a *Kulturlandschaft*, a cultural landscape.

Within the search for national identity, the image of the hacienda is emblematic of the savanna landscape and positions the hacienda as representative of the national context. In this way, the expression of power embodied in land tenure is also naturalized. As Malagón Gutiérrez concludes, the function of the hacienda is

a rural property of an owner with aspirations for power, exploited by subordinate labor and destined for a market of reduced scale, with the help of a modest capital. Under such a system, the factors of production serve not only for capital accumulation per se, but also to ensure the social ambitions of the owner. (2023: 91)

Unequal land tenure has been a major problem in socioecological conflicts during the Anthropocene. In this regard, the landscape of *La Tarde* can be related conceptually to colonial continuities. Malagón Gutiérrez highlights this continuity in the hacienda system that began during the colonial era and persisted in the new republic, entailing “processes of deterritorialization of peasants and Indigenous people” (Malagón Gutiérrez 2023: 91). The European administration of colonial spaces was characterized by the forced sedentarization of native populations and the redistribution of land. This process not only controlled communities but also procured an intensive form of economic exploitation and accelerated what the colonizers saw as the cultural “evolution” of the Indigenous people. The resulting transformation of the landscape, with property boundaries, farms, and villages, was presented as justification for the colonizing mission, ignoring the Indigenous influence on the environment that preceded this change. Since the end of the twentieth century, cultural geographers have begun to systematically study this phenomenon (Cosgrove 2002: 87). As for the relationships between humans and nature, the change in land use can be said to go beyond the directly human realm, as humans also influence the networks of fauna and flora in a given area.

Conclusion

Landscape painting as it developed in Colombia was influenced by European ideas, and many artists studied in Europe or served as apprentices to artists representative of this type of painting. This influence is seen in the artists' choice of perspective, which is not that of the oppressed but rather an elitist interpretation of the landscape that encompasses the ideas presented here. What stands out are not only the elements shown as part of the landscape (the mountains, the pasture, the cows), but also the artist's gaze, which guides the viewer's interpretation (Cosgrove 2001).

A crucial element of landscape painting in the case analyzed here is its naturalization of the hacienda in Colombia. The visual, aesthetic characteristics of the hacienda are naturalized along with the form of land use and the practices of power that it represents. The haciendas and their pastures bear witness to the experiences of appropriation that lie behind their foundation: the dispossession of smallholders and Indigenous people.

In landscape painting, especially in the Andean area represented by the Savanna School, the beauty of the landscape is the primary objective. Even so, power relations and the unequal distribution of resources as key elements of the Anthropocene are exposed. Inequality in access to resources, the low productivity of land once colonized, and the denial of the history of land appropriation are significant aspects of the complexities we face during the Anthropocene.

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**Visual Representations in the Amazon
from the Mid-Nineteenth Century to 1950**

Loading Rubber

Gerardo Cham



Silvino Santos, *Cargando goma*, photograph commissioned by the Peruvian Amazon Company (1912).

This photograph, titled *Cargando goma* (Loading Rubber), was taken in 1912 by Portuguese photographer Silvino Santos. Huitoto children and youth can be seen carrying the “*chorizos*” or “*salchichas*” *de caucho* (rubber “sausages”) towards the steamboat *El Liberal* in Putumayo region in Peru. The entire operation takes place under the supervision of foremen who watch over the shipment process. The photo was commissioned by the Peruvian Amazon Company, a rubber exploitation firm, as will be detailed later, and the photographer’s intention was to demonstrate the “civilizing” and “progressive” character in the extractive chain of different rubber species: *caucho*

(*Castilla elastica*), *goma elástica* (*Castilla ulel*), or *siringa* (*Hevea brasiliensis* or *Hevea benthamiana*). In this photo, what we see is the exploitation of natural white latex, which was converted to black rubber and commercialized by the global tire industry. The severe ecological impact of black rubber is also relevant here, as tires produce large quantities of synthetic rubber particles that eventually pollute the air as well as rivers and oceans when they are washed away by rain.

Returning to the photograph, the whole scene visually and symbolically alludes to the beginnings of the Amazon's anthropocenic development. In this sense, the image of the boat, at the center of the composition, is a key element. It represents the important link made by extraction between the Indigenous world and industrialized societies. Likewise, the boat symbolically alludes to steamship navigation as one of the major instruments of colonial domination. Using vessels such as the one in the photograph, the big navigation companies shortened distances, boosted trade and had a special influence on the drawing of river maps that were decisive in the defense and expansion of lands conquered by Europeans (Chavarría 2015:138). Ships like the one in the photograph became territories of impunity. In fact, in that same steamship, *El Liberal*, the worst atrocities and abuses were committed against Putumayo's Indigenous people (Chirif, Cornejo, and De la Serna 2013:84). In terms of extraction, another significant detail can be seen in the foreground on the left side of the photo. Here, some *caucheros* (rubber harvesters) manipulate a wood shredder to stuff the *salchichas de caucho* (rubber sausages), alluding symbolically to the use of foreign technologies in the Indigenous world to accelerate the process of rubber shipping (Casement 2014: 172).

From another symbolic perspective, the photograph directs the viewer to contemplate the socioenvironmental catastrophe resulting from the large-scale extraction of rubber for industrial processing, all to supply the growing auto industry mainly in the United States and Europe. That is to say, from an anthropocentric point of view, the rubber carts in the photograph speak to us symbolically of thousands of trees that were not only "milked", but also felled and subjected to deep bleeding, until their trunks completely dried up (Martínez 1977: 8). This disaster occurred, increasingly, between 1860 and 1918, the year in which South American rubber trees ceased to be attractive to industrialized countries due to the new boom of plantations in Ceylon, Singapore and Malaysia. In this way, the photograph provides a visual metaphor of the impudent plundering of a wealth preserved for centuries by the original inhabitants of the Amazon, who were left without any favorable return.

The photography was part of a strategy designed to hide atrocious crimes that are also anthropocenic in nature, as they profoundly altered the way of life of Indigenous communities closely linked to the jungle. What we see is an apparent harmony of submission. The Indigenous people carrying rubber in the image did not live peacefully. It is estimated that, starting in 1900, the foremen and armed guards of

the Casa Arana – owners of the Peruvian Amazon Company – were directly responsible for the murder of tens of thousands of Indigenous Boras, Ocainas, Muinanes and especially Huitotos in just one decade. The aggressions against Indigenous people were many and serious, as documented by research such as that by Óscar Espinosa (2016), which analyzes what happened to the Asháninka during the rubber boom, and even afterwards. The fact is that, for almost a decade, the Casa Arana kept secret the ecological damage done to the rainforest, but especially the atrocities committed against the natives of Putumayo, for which it created a system of strict requisitions and controls within their domains. It's also worth mentioning that during the rubber fever, and at the request of the Casa Arana, doctored photographs were created to justify their colonial actions, arguing that the Indians were capable of committing atrocities against western explorers. This is the case of staged photos where Indigenous men appeared with naked women lining up while supposedly cooking a human head (Chavarría 2015: 143). Nevertheless, an observation is necessary here. Roger Casement (2011: 50) points out that one of the caucheros' strengths was precisely taking advantage of the quarrels and disputes already rooted among Huitotos. It is estimated that, upon the arrival of Arana and his rubber tappers, there were at least 30,000 Huitotos, divided into a large number of families that had been feuding among themselves for several generations. The same was true of the Boras, Andokes and other native peoples of the upper Amazon.

The author of the photograph shown in this entry, Silvino Santo, was born on November 29, 1886, in Portugal. His interest in the Amazon world began when he was in high school (Vale da Costa and Lobo 1987) and in 1899 he sailed by ship to Brazil. In Belém do Pará, he worked in a bookstore, and it was there that he cultivated his interest in photography. His first photos were taken in Iquitos. In 1910 he settled in Manaus to engage in family business. The following year, a chain of fortuitous events brought him into contact with Julio César Arana, representative of the Peruvian Amazon Company. But it was Carlos Rey, Peruvian Consul General in Amazonas and Pará, who contacted him to take photographs of the Putumayo River, as well as of the rubber stations in the area. It is clear that the most important aim of the assignment that Santos received from Arana was that his photographs would serve to clean up rubber tapping's negative reputation. (Lagos 2005) When Santos visually documented nature and Indigenous life in Arana's domains, photography as a medium was already interacting in a very important way with nature in the Amazon. It served to document national explorations and thus make visible the Amazonian territories that had historically been seen as complex and impenetrable (De la Cruz Castro 2018: 661).

Silvino Santos captured the scene shown here as part of a series of shots taken between August 7 and October 6, 1912. As mentioned above, this was a commissioned visual record undertaken by the famous Comisión del Putumayo (Putumayo Commission) to counteract the international scandal unleashed by the atrocities com-

mitted in the rubber territories by the Peruvian Amazon Company, whose general manager and main shareholder, Julio César Arana, is still considered to this day by ecological critics as one of the most sinister and ruthless satraps in the history of Peru. Arana's rubber company was headquartered in London since 1907. Thus, at a time when photography was already being used as an evidential means of denunciation, it was used in the opposite direction here, as an instrument to cover up the plunder of natural resources and also to construct an apparently idyllic narrative of the life of the natives in the Peruvian Putumayo area.

The photograph selected here contains at least a double perspective. On the one hand, there is the photographer Silvino Campos' viewpoint, aligned with the interests of the rubber lords, who wanted to show evidence of the supposedly civilizing work of the West. The rubber tappers' incursions during the first decade of the twentieth century were so aggressive that, even today, the period is considered a turning point in a long struggle for the recognition of the Amazonian peoples and the defense of their ecological resources (De la Serna Torroba 2013: 6). This era is also considered a starting point for the uncountable illegal incursions that would continue causing anthropogenic devastation to the Amazon rainforest, such as the gangs of loggers, land invaders, and illegal miners that endanger the lives of the Amazon rainforests' guardians (Lay 2022). Although the rubber economy today is very limited, many territories that were once rubber forests have been transformed into oil exploitation centers. Thus, the layers of extractive exploitation in the Amazon have gradually accumulated.

But even before Arana's rubber tappers arrived, the Amazon rainforest had already begun to come under pressure from wealth seekers. According to reports by Roger Casement, the Amazon's natural resources were already coveted at least ten years before the first rubber tappers arrived. In particular, there was massive exploitation of the bark of the cinchona tree (*Cinchona officinalis*) for the extraction of quinine, used worldwide since 1820 as an effective medicine against malaria and malarial fevers. Quinine extracted mainly in Caldas and El Gran Cauca was in great demand in different parts of the world. Around 1874, partners of the Casa Elías Reyes y Hermanos undertook navigation explorations on the Putumayo River with a plan to extract quinine in the Mocoa Mountains. The Reyes Company obtained permission from Pedro II to navigate Brazilian waters, with tax exemption, for the free transfer of cinchona bark in the Amazon River and its tributaries for a period of fifteen years (Domínguez 2005). The Reyes brothers travelled up the river in canoes and later introduced steamships, which opened the door to the massive intrusion of traders seeking to extract the jungle's resources at any price. Once the Reyes brothers' company was liquidated, there were more concessions to exploit the Amazon's riches. In 1892 Peruvian businessman Benavides was granted free trade rights between the ports of the Amazon and Putumayo by a resolution in the Brazilian Congress stating that *all natural products coming from Colombia* (and

brought in by Brazilian boats to the ports of Manaus and Belén) *were to be free of import duties* (Tomson and Pineda Camacho 1913: 16). In 1882, when the first significant exploitation of rubber occurred in South America, at least 60,000 *syringa* trees were already being tapped, although certainly the great chaos arose with the rubber rush. First, employers prohibited the *seringueiros* (rubber tree tappers) from practicing their traditional subsistence agriculture, forcing them to buy products from the same employers. In this way a predatory system developed in which the small-scale producers remained indebted for life. When rubber production collapsed in 1913 as a result of the Asian plantations, subsistence agriculture was revived, and with it the diet and health of the Amazonian natives improved (Assies 1997: 44).

This article has focused on the violence exercised against the native communities of the Amazon because it has been claimed more than once that the production of rubber and later of the Amazonian nut (*Bertholletia excelsa*) was carried out without causing significant damage to the rainforest (Assies 1997: 107). This assertion is questionable. While the number of rubber trees may have recovered, the enslavement and mass executions of Indigenous populations in the Amazon profoundly affected the complex interactions that these native peoples had with life in the forest. The chilling figure of 40,000 natives killed and disappeared, plus thousands more displaced, shows the devastating dimensions in terms of Indigenous lives, of the violence enacted against their cultural and ecological networks. All this was provoked solely by the exploitation and processing of the particular rubber plants known as caucho, balata, or siringa (Chavarría 2015: 141).

The aggressions against Indigenous ways of life and their ancestral cultures were also anthropogenic aggressions that ended up profoundly affecting the rainforest itself. Specifically, the ecological damage to the rubber tree was considerable. Driven by greed and the need to obtain wealth in short periods of time, rubber tappers not only “milked” the trees, but also felled them or bled them dry. It is impossible to know exactly how many thousands of trees died due to extreme tapping. What is certain, however, is that over a roughly forty-year span, at least 27,000 metric tons of rubber were exported out of the port of Iquitos, a figure that does not include extractions from Puno, Cuzco and Madre de Dios, also very important sites in the rubber tapping industry.

The arrival of the first Colombian and Peruvian rubber tappers initiated one of the great anthropogenic devastations of the Amazon. A first factor of massive extraction was the absolutely unbalanced introduction of forced labor in slave-like conditions. Basically, the invaders obtained from the Indigenous people much more than they were willing to pay. Slave relations of subjugation were established as early as 1904, when the first group of thirty men and five women disembarked in the Putumayo carrying Winchester rifles. The rubber traders rapidly set up a system of labor relations that was exceedingly advantageous for themselves, as well as the businesses and politicians they aligned with. In contrast, the daily reality for the Indige-

nous workers in the rubber stands was demeaning: no salary, a lifetime of debt, and homes designed to withstand only rain and sunlight, not armed attacks. Most of all, as stated above, the Indigenous were so weakened by these forces outside their control that their lives were in constant danger.

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Rubber-Gatherers in the Amazon Country

Maria Letícia Corrêa



“Rubber-Gatherers in the Amazon Country,” photograph, in Marie Robinson Wright, *The New Brazil: Its Resources and Attractions; Historical, Descriptive and Industrial* (1901).

In this black and white photograph, we see a group of men, women, and children lined up in front of a house, with the forest in the background. The building depicts the typical hut of a *seringueiro* (a rubber tapper, as latex collectors are known) – a rustic and simple dwelling for workers in the Amazon region. The hut is built directly on the ground, with walls made of wooden stakes and trunks tied together with vines, covered by an extensive roof made of straw and palm leaves. In front of the group, on the ground, one can see work tools, pieces of straw, baskets and possibly rubber “skins.” The rubber tappers’ huts were built close to the riverbanks, and their residents had canoes, which served as a means of transportation and refuge in

times of flood. Inside the huts, mud structures functioned as ovens and fireplaces, although without chimneys (Pearson 1911).

This image was included in the book by U.S. American journalist and writer Marie Robinson Wright (1866–1914), *The New Brazil: Its Resources and Attractions; Historical, Descriptive and Industrial*, first published in Philadelphia, United States, in 1901. In the book – a result of the author’s long travels throughout Brazil – the photograph illustrates the chapter dedicated to “The Rubber Industry,” whose prominence in the publication, alongside coffee and yerba mate, reflected the importance that the extraction and trade of the product had reached at the end of the nineteenth century. According to the author, “Brazil practically monopolizes two great staples of the world – coffee and rubber” (1901: 91).

Wright highlights U.S. American interest and presence in the Brazilian Amazon when she mentions the businessman Charles R. Flint, of Flint, Eddy & Co., who, in the early 1880s, identified the opportunities for investment in rubber exploitation and acquired large areas of land with rubber trees (366). From then on, the companies with which Flint was associated would have moved crude rubber worth more than 250 million dollars in gold. In 1899, he organized the Rubber Goods Manufacturing Company of the United States and the American Cycle Company, which, according to Wright, were among the largest buyers of rubber in the world.

The most active foreign participation in the Amazon possibly dates to the 1850s, with companies such as the French Denis Cruan & Co., exporters of cocoa and rubber, and the English Singlehurst, Brocklehurst & Co., operators of a shipping line between Liverpool and the Brazilian cities of Recife, Belém, Salvador and Rio de Janeiro (Weinstein 1983: 64). The economic integration of the region, including banks, telegraphs, and the rapid urban development of Belém and Manaus, was boosted by the introduction of regular steamship services on the Amazon River in 1853 and the opening of the main channel to foreign vessels in 1866 (Cleary 2001: 92). Thus, a “new system of socio-environmental interactions” emerged when rubber from *seringueira* trees [*Hevea brasiliensis*] began to be industrialized outside Brazil, connecting the Amazonian interior to “cutting-edge sectors of world capitalism” (Pádua 2022: 15–16).

The rubber economy mobilized a wide range of social actors – rubber tappers, landowners (or *seringalistas*), rubber and consumer goods traders, exporting and importing firms owned by Brazilians, Portuguese, Germans, English and U.S. Americans, and industrialists – on a regional and global scale. Scientists, botanists, and agronomists experimented with the cultivation of rubber trees in Central America and in the English and Dutch colonies in Asia, based on research carried out at the Royal Botanical Gardens in Kew, England, since the 1870s (Dean 1989), and at the Botanical Garden in Rio de Janeiro, with the studies of João Barbosa Rodrigues, from 1881 on (Domingues and Carréon 2021: 55). This investment was justified by the rapid growth in industrial demand, represented, for example, by the worldwide expansion

of the telegraph from 1874 on. That year, England imported 58,710 kilos of rubber from the Amazon, six times more than two decades earlier (Domingues and Carreón 2021: 55). From 1900 on, demand was further boosted by the growth of the automobile economy.

Wright had traveled to the north of Brazil in October 1899 by ship, arriving in the states of Pará and Amazonas after visiting Rio de Janeiro and São Paulo and touring other Brazilian regions for her illustrated book on the country. Although the writer's presence in the northern capitals may have permitted her to obtain data and images about the local economy and governments, her text on rubber seems to be largely based on studies and reports available in English and French, drawn up by officials, scientists, and capitalists involved in this sector – published since 1854 when the English naturalist Richard Spruce wrote about his trip to the Amazon and South America (Bentham 1854; Spruce 1855).

Based on this information, Wright described the different varieties of rubber trees in the region, highlighting the most valuable one for trade, known as “black bark,” which was found in forest areas that were not permanently flooded, along the banks of the tributaries of the Amazon River (1901: 363). She also explained three distinct qualities of the rubber sold: *fine*, completely dry and smoked, “free of putrefaction”; *medium*, or *between fine*, which had been burnt during the smoking process or smoked insufficiently; and *sernambi*, composed of fragments mixed with bark and other materials. These descriptions refer to the *Hevea brasiliensis*, whose specimens can reach 30 meters in height, reaching the top of the forest. The largest were located on drained soils only on the right bank of the Amazon River, stretching from the islands of Pará in the east to northern Mato Grosso, Acre, Bolivia and eastern Peru (Dean 1989: 33).

The writer detailed the stages of work and the processes of extracting and curing latex, which she considered interesting due to their rustic and “very primitive” character (Wright 1901: 363–364). In her words, the worker,

“[having] built his little hut and equipped himself with the necessary utensils, consisting of an axe, a knife, cups, clay, and a calabash, he starts out for the rubber-tree, sometimes cutting his way through dense undergrowth and again sinking knee-deep in mud or up to his waist in water” (364).

Like other rainforest species, the rubber tree was sparsely distributed, with only two or three trees per hectare. The rubber tapper's task, therefore, as described by Wright, involved locating these trees and opening trails, or “roads,” to connect them. Each worker would open two or three of these roads, each with sixty to 150 trees, a quantity that a single person could manage (Dean 1989: 98). Extraction took place through incisions in the trunk, made with a knife or axe, where cups were attached to collect the latex.

To cure latex, workers used a technique of coagulation over fire, which gave the product its main commercial qualities (Wright 1901; Pearson 1911). In the photograph reproduced from Wright's book, we see utensils such as a bucket, wooden sticks and straw that may have been used in the task of curing rubber. A small funnel-shaped chimney was placed over the fire, in which palm leaves and nuts, mainly the *urucuri*, were burned, through which rose a column of smoke. The worker poured the latex onto a stick, turned it until it was dry, and repeated this operation until a large "skin" was formed (Wright 1901: 364). By this time, however, experiments with more modern processes were being reported, such as the one used to prepare the samples sent by Brazil to the Chicago World Fair in 1893 (Pearson 1911: 73–74).

After a week's work, the rubber tapper would take the rubber to the estate's headquarters to be weighed. Payment was lower than the local market price, with part of the amount going to cover freight to Belém or Manaus. The proceeds were used to buy supplies at the property's warehouse. Gathering took place in the dry season, from May to November; in the rains, the trails became inaccessible, and workers would dedicate themselves to other activities, such as extracting nuts and cacao or subsistence farming.

The rubber tappers worked independently with tools bought on credit from the warehouse and traders who came up the Amazon. They depended on these intermediaries to sell latex and to obtain protection, medicines, assistance and food, thus generating continuous debt. The unregulated system connected rubber tappers to bankers and raw rubber traders, with prices set by global demand (Weinstein 1983: 157; Graham 1985: 135–138). From the hut of the isolated rubber tapper, or those accompanied by wives and small children like those seen in the photograph, a long chain of credit and dependence extended to Belém and Manaus, where the big trading houses were located (Weinstein 1983: 155). In these houses, the extravagant fortunes of the rubber barons prospered (Hecht and Cockburn 2010: 72–73).

The harsh working conditions, isolation, deprivation, disease and other dangers of the forest limited the rubber tappers' ability to remain in the extraction areas. Many ultimately left the region, either by fleeing or abandoning it, despite the prohibitions and fines imposed by the companies. According to Pearson's 1911 report, mortality rates in Brazil's rubber extraction areas were always high. Workers perished from disease, the habit of drinking *cachaça* and the consumption of unboiled water (168). Faced with this situation, there was a constant need to recruit new workers – a task that often fell to the traders who served the rubber region.

Each year, before the rubber harvest, recruiting agents were sent to the states of Ceará, Rio Grande do Norte, Paraíba and Piauí in search of those workers who, in the Amazon, came to be known by the nickname *Cearenses*, a term that encompassed all these individuals. The cost of traveling north and west to the rubber extraction areas was covered by recruiters, with the advances later deducted from the workers' earnings from raw rubber collection.

The *Cearense* would board one of the small river boats with hundreds of others and begin his journey at “the time of high water, the start being made in the latter part of March or first part of April, and it is probably the beginning of May before the ‘seringal’ is reached” (61–62). When he arrived, he would be put up in one of the workers’ huts if he was traveling with his family, or, if he was single, he would put up his hammock in a large straw building with the other men from the rubber land. With their crops destroyed by drought and their cattle slaughtered by hunger and thirst in their home states, “the Amazon and rubber gathering is all that stands between them and starvation” (62).

The periodic migrations of workers – driven by environmental degradation and poverty in the states of the region now known in Brazil as the Northeast – toward the rubber extraction areas in the Amazon linked two interconnected economic and ecological processes. In the north, in the states of Pará and Amazonas and in Acre, “rustic” work processes provided inputs for a globalized industrial economy: raw materials for large companies in the central countries of capitalist expansion.

Even after the British consolidated rubber production in Southeast Asia and developed a monopoly on the product, the working and ecological conditions in the Amazon in the 1920s were still considered favorable enough for Henry Ford to establish a vertically integrated rubber plantation and production system. This led to the construction of the town of Fordlândia, on the right bank of the Tapajós River in Pará, in 1928. Ford’s enterprise, which occupied an industrial and plantation area of 1 million hectares, resulted in the “first major continuous deforestation of the firm lands of the Amazon” (Sena 2008: 94), preceding the expansion of pastures by ranchers from the 1950s onwards. The Fordlândia facilities, whose productivity was always low, were acquired by the Brazilian government after the U.S. Americans left in 1945 (Sena 2008).

On the other hand, the crises that brought workers from the northeast – the *Cearenses* – to the Amazon since the 1870s were part of “integral chapters in the history of capitalist modernity” (Davis 2002: 17). These crises emerged due to the disintegration of the social ties and local economic production by small farmers and non-capitalist livestock breeders, even if these were linked to or dependent on large landowners. For Mike Davis, the droughts of 1876–1879, 1889–1891 and 1896–1902 – which coincided with the rubber economy boom – correspond to the first global subsistence crises of the Victorian era, affecting different regions such as India, Russia and Brazil (2002). This established the conditions for deaths due to famine and associated epidemics, transforming the state of Ceará into a “provider of workers” (Secreto 2003; 2020). At the beginning of the twentieth century, the arrival of new waves of immigrants with the expansion of extraction in the native rubber region of the Acre territory brought about the annihilation of Indigenous populations. These communities fell victim to the *correrias*, the violent processes of expulsion and killings carried out by rubber estate owners and their henchmen.

The decline in rubber production was accompanied by the formation of a category of peasants of the Amazon rainforest, according to Almeida, which included “rubber tappers, hunters and fishermen, *barranqueiros*-farmers, small craftsmen and master blacksmiths, and rowers and river pilots” (2004: 35). Unlike Peruvian caucho, the exploitation of trees of the genus *Hevea* allowed for a more stable system of extraction, favoring sedentarization (35–36). Now settled, with the remaining rubber production directed to the Brazilian market, this sector now faces the vectors of the expansion of cattle ranches and logging companies, whose presence has meant the reduction of forest cover and yet another transformation of the region’s way of life (Hecht and Cockburn 2010).

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Fruit Seller

Andrea García Rodríguez



Víctor Morey, *Vendedor de frutas* (1958). Oil on canvas, 116 x 74 cm.

Source: Ministry of Culture Collection, Peru.

At the beginning of the 1940s, new imaginaries about the Peruvian jungle appeared in the country's periodicals and major media. In these publications, the Amazon was crowned as one of the most important focal points for the affirmation of Peruvian identity and national economic revitalization. The Amazon region of Peru is mainly within the departments of Loreto, Ucayali, and Madre de Dios, in the north, as well as parts of other departments such as Amazonas, Cajamarca, Huancavelica, and La Libertad, among others. The impetus for nationalist unity was not accidental. During that decade, pivotal events unfolded that would shape the geopolitical significance of the Amazon region within Peru's national context, such as the signing of the Rio de Janeiro Protocol on January 29, 1942, and the commemoration of the Fourth Centenary of the Discovery of the Amazon River (Herrera 2018). In this context, artists such as Víctor Morey (1900–1965), Manuel Bernuy Ortiz (1892–1963), and César Calvo de Araujo (1914–1960) played a central role in the process of reconfiguring ideas about the Amazon rainforest, by depicting a vast and dynamic territory in their works, thereby challenging the prevailing notions of the absence of history and culture in the Amazonian populations.

This entry focuses on the oil painting *Vendedor de frutas* (*Fruit seller*), circa 1958 by Víctor Morey. The work is part of a long pictorial tradition of representations referring to the fertility of the territory and the abundance of its resources, engaging in a direct dialogue with national imagery of the Amazon. While the Amazon region was renowned for its abundance of gold, coal, salt, non-metallic minerals, coca, quinoa, and coffee (Paulet 1941), there was one resource that, more recently, in the climate of instability and scarcity resulting from the Second World War, had once again become enormously valuable for international trade: rubber. From 1880 to 1914, the so-called “rubber fever” had developed in the Amazon region, promoting the development of cities and new routes in the region, in addition to the formation of a business elite dedicated to its extraction using Indigenous labor under harsh working conditions. However, with the emergence of commercial disputes among businessmen in the region and competition for the entry of rubber produced in European colonies in Southeast Asia, the demand for Amazonian rubber experienced a decline until the 1940s, when it underwent a resurgence (Pariona Medina 2021; Harp 2016). These circumstances prompted the production of a series of images and discourses promoted by the State, portraying the Amazon rainforest as a fertile Eden that would allow national regeneration and ensure the future (Herrera 2018). In a broader context, Morey's image enables a comparison of at least two divergent visions of the Amazonian territory: on the one hand, it captures a moment of intense debate about the economic potential of the region and the impetus to populate it and undertake its development from the State, in a line more akin to the international course of the Anthropocene. On the other hand, it evokes a look inside that territory, inquiring into the relationship of the inhabitants with the land, the management of resources, and the cultural and historical identity of the Amazon.

The “Rediscovery” of Amazonia

Originally from Yurimaguas, Loreto, in northern Peru, Victor Morey was a multifaceted artist whose work encompassed drawing, caricature, literary writing, painting, advertising design, and sculpture. In the 1920s, Morey’s work stood out for creating idealized scenes of the Inca past, with discourses based on the myths and heroic characters of the Inca tradition, as well as on pre-Columbian iconography, present in ceramics, textiles, and archaeological pieces. Between 1919 and 1921, he exhibited his work together with Emilo Goyburu (1897–1962) and Carlos Quíñez Asín (1900–1983) in Lima and Trujillo (Kusunoki and Wuffarden 2014); shortly afterwards, he exhibited individually in Cuba and in his native Loreto, before taking his work to Buenos Aires in 1924 (Vidarte Basurco 2016). However, it was not until the 1940s that Morey focused his efforts on the creation of a regional plastic language, oriented towards the representation of the Amazonian landscape and the exaltation of this territory within the Peruvian artistic panorama.

This change in the representation of the Amazon constituted a significant shift with respect to the images of the region that had circulated since the mid-nineteenth century. For many Peruvian intellectuals and politicians, the Amazon region was an unpopulated and unexploited area, whose soil remained barren due to the civilizational backwardness of the native inhabitants, whom they considered lazy, ignorant, and barbaric (Chirif and Cornejo Chaparro 2009). Moreover, the Amazonian landscape was conceived as an immutable territory, where animal species and vegetation remained in an unaltered, pristine state, without history or memory. Under this notion, the region was devoid of its cultural and social value; instead, its economic value was accentuated in terms of its productive potential. A comprehensive examination of these conceptions, along with the recent historiographical shift that has led to new interpretations, can be found in the work of William Balée (2013).

In May 1941, President Manuel Prado Ugarteche (1889–1967) decreed that the year 1942 would be dedicated to the celebration of the IV Centenary of the Discovery of the Amazon River, with the aim of fully consolidating the integration of Peruvian nationhood (Herrera 2018). This commemoration took place at a time of political conflict with Ecuador, due to the dispute over territorial boundaries, which would finally be resolved with the signing of the Rio de Janeiro Protocol in which Ecuador renounced its demand for a maritime outlet to the Amazon River and the border limits between the two nations were definitively fixed. The celebrations for the Centennial of the Discovery included the inauguration of the Amazon Indigenous Exposition, with handicrafts from the department of Ucayali, as well as an obelisk commemorating the expedition of Francisco de Orellana and the founding of the town of the same name in the sixteenth century. The obelisk, designed by Victor Morey, symbolized the “rediscovery” of the Peruvian Amazon in the middle of the twentieth century. It featured the monumental prow of Orellana’s ship, flanked by four bas-

reliefs – now disappeared – with the sequence of Orellana’s arrival, his famous encounter with the Amazons and two other images that highlighted the relationship of the indigenous populace with the region’s abundant natural resources.

As Morgana Herrera has pointed out, Morey’s monument was “a synthesis of the Amazon that the people desired to construct in that commemorative year and it is at the same time the territory of the exploitation of natural resources and where History begins with the Spanish conquest – not with the history of the Amazonian peoples – and everything else is the stuff of legend” (2019: 140). In this way, the Amazon came to be incorporated into the grand narrative of national history, as a key site within the process of conquest and evangelization, as well as resource extraction, a fundamental image at a time of global war, in which rubber was emerging as a strategic resource for economic recovery.

Vendedor de frutas and the Paradise of Abundance

According to Camilo Domínguez Ossa, by 1937, 90 percent of world rubber production was concentrated in the colonies of Southeast Asia, a region that, as the war progressed, was occupied and controlled by Japanese forces, preventing trade with the United States and its allies (Domínguez Ossa 1995). Consequently, Amazonian rubber emerged as a highly prized commodity in global trade, prompting the establishment of the *Corporación Peruana del Amazonas* in 1942, with the aim of promoting the exploitation of Amazonian rubber, in collaboration with the Rubber Development Corporation, a U.S. company to which rubber production was sold at pre-established prices (Ríos Moreno and López Hurtado 2014). For export, airports were built in different parts of the region, accompanied by commercial and health infrastructure. The trade agreement was terminated around 1947, concluding an ephemeral rubber boom period and putting an end to the dreams of economic splendor that it had generated in other times.

Although it was a brief period of economic bonanza, the economic surge it generated was sufficient to foster the development of discourses that conceptualized the Amazon as an exuberant region, abundant in resources and possibilities, not only in terms of economic or biological wealth, but also in the realm of imagination or literary and artistic creation. This was demonstrated by many artists such as Antonino Espinosa or Sérvulo Gutiérrez, in the Amazonian Exposition of 1943, whose purpose was clearly defined by its ideologue, the intellectual Raúl Porras Barrenechea: “An Exhibition is for modern man a form of travel, of approaching distant things through images or books. This Exhibition is, therefore, in a certain way equivalent to a re-discovery of the Amazon” (1943). Porras Barrenechea, who had served as secretary general of the scientific committee of the celebrations, continued:

The Amazon is still a land without stable geography and history. It is a world in constant renewal, where the riverbeds change every day, the flood incessantly transforms the profile of the land and the footprints of man disappear, drowned by the weeds more easily than the sea erases the inscriptions in the sand. [...] Traveling clay, not yet settled by man or by science, humus still warm from the creative breath, in which the earth itself and the water are nomads, and men and plants wanderers. [...] A land without memory, where tribes change their location without nostalgia and rebuild their wandering home every day and the past dies every night without return, because men avoid the memory [...]. The jungle is the region of the cult of life, in the amnesiac forests, without graves and without history. (1943)

In contrast to this territory of images about the Amazon, we have the work *Vendedor de frutas* by Victor Morey. The image portrays an Asháninka man, dressed in the traditional *cushma*, proffering a selection of regional fruits, next to the *mocahua* decorated with geometric shapes and overflowing with *masato*, a fermented drink made from yucca, rice or corn. To one side of the protagonist rests a *pihuicho* bird, a frequent companion of the villagers that enlivens the atmosphere with its singing and dazzles with its color. The chromatic harmony of the portrait, with shades of ochre, yellows, greens and reddish accents, suggests an organic integration between the protagonist, his small feathered companion, the fruits of the earth and the surrounding landscape.

The image refers to a long tradition of fruit sellers who articulate a powerful discursive construction about the territory and its abundance. This genre highlights the diversity of resources and their relationship with the inhabitants, an aspect that contrasts with the monoculture of rubber and other sources of profit extracted from the region, from a capitalist perspective. At the same time, the image reveals a strong regionalist imprint that suggests a different vision of the territory. Since pre-Inca times, the Asháninka population spread throughout the central area of eastern Peru, a region where not only has rubber been extracted since the nineteenth century, but also coffee has been grown. Faced with the mistreatment by rubber tappers and coffee landowners, the Asháninka sought various means of resistance, such as moving deeper into the jungle or even taking up arms against small settlements of colonists. This led the Asháninka being perceived as a hostile and violent population (Espinosa 2016). However, for the Asháninka culture, caring for nature was a central aspect that was not only the responsibility of human beings, but also of the spiritual beings that inhabit the four worlds that, in the Asháninka cosmology, comprise the universe (Umaña Chiricente 2021).

In Morey's image, the protagonist is reminiscent of Francisco Laso's famous *Inhabitant of the Cordilleras* (1855), with his frontal gaze towards the viewer, with a dignified and unreserved countenance. In this sense, one can think of the emergence

of the Amazonian subject, with an as yet undefined identity, but in the process of representation. This notion stands in definite contrast to the idea of the ahistorical territory, without memory, as previously invoked by Porras Barrenechea. The gaze that the protagonist returns to us, from his mature face marked by time, reaffirms a long journey, a complex web of history and links with the Amazon that were just then in the process of revaluation.

In short, by carefully observing *Vendedor de frutas*, it is possible to contextualize some questions raised by the reflection on the Anthropocene in the Amazon region. How does the Western conception of landscape contrast with the Asháninka perspective and that of other Amazonian peoples? What historical relationship did these communities establish with nature and what notion of memory did they develop from it? *Vendedor de Frutas* gave a face and, to some extent, an identity to a region about which little was known, but which formed a central part of Peru's economic reactivation during the 1940s. In doing so, the work contributed to a change in the imagery of the Amazon, marking a distance from those representations that portrayed the Amazonian natives as anonymous and barbaric entities. This shift in representation had the effect of broadening the conceptions of Peruvianness that were then being debated among Peruvian intellectuals, and placed in the Amazon a halo of hope, a promise of development that displaced the excessive exploitation of resources, for balance: between several worlds, between different worldviews.

Translated by Omar Sierra Cháves and revised by Luisa Raquel Ellermeier.

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Anthropophagy

Elissa Rashkin



Tarsila do Amaral, *Antropofagia* (1929). Oil on canvas, 126 x 142 cm. Fundação José e Paulina Nemirovsky, São Paulo. Photo: Romulo Fiadini. Source: *Enciclopédia Itaú Cultural de Arte e Cultura Brasileira* (<http://enciclopedia.itaucultural.org.br/obras/82340-antropofagia>).

In 1928, Brazilian Modernist painter Tarsila do Amaral gave her husband, the writer Oswald de Andrade, an anniversary gift: an oil painting depicting a large, semi-abstract human figure seated on a green surface beside a tall cactus, against a background of blue sky perforated by an intense yellow sun. The artwork that – af-

ter a consultation with the Tupí-Guaraní dictionary – would be titled *Abaporu* made a strong impression on her husband, who showed it to poet Raul Bopp. The two men were so excited that they decided to launch an avant-garde movement inspired by the image; the movement would be called Anthropophagy, and would give rise to a manifesto, a journal, and various literary and visual creations (Amaral 2003: 279–280). Its ethos was a *sui generis* Indianism that inverted not only the civilizing discourse promoted by the dominant political paradigm, but also the romantic version common in American art in the nineteenth century, which viewed the *noble savage* as a lamentably endangered species.

Like other avant-garde explosions before and since, the movement would be short-lived; as exemplary anthropophagites, its members lost no time in consuming and dividing themselves against one another. However, their cannibal gesture, with its luminous anticolonial insights, would be revived in the 1960s and 1970s as an artistic and cultural strategy for confronting the civilian-military dictatorship and its policies of censorship and repression. At the time, the Anthropocene was not a topic of discussion, nor did the Modernists particularly concern themselves with ecological questions. Even so, Modernism's centennial in 2022, which was simultaneously the bicentennial of Brazil's independence, provided the occasion to return to Tarsila's work, such as the 1929 painting *Antropofagia* (Anthropophagy), and the movement with which it was associated. This text aims to explore its imaginaries regarding national ecology and especially the Amazon region: imaginaries that were under construction at the beginning of the twentieth century.

In these incipient imaginaries, the artistic avant-garde was key in that it offered ways of seeing and understanding the country through a lens that was decolonizing rather than nationalist, that is, as an organic territory rather than a political entity. Without abandoning tactics and techniques absorbed from European avant-garde movements such as Cubism and Futurism, the Brazilian Modernists sought to anchor cultural-national identity in territorial particularities such as topography, vegetation, Indigenous and Afro-descendent worldviews and aesthetics, colors and light.

All of this was juxtaposed with another reality that was not so much the focal point as an implicit underpinning of Tarsila's work: that which was imposed, Europeanized, Western, colonial. Instead of being rejected, these elements were *digested*, in order to neutralize them as a threat and appropriate their useful qualities: "The permanent transformation of Taboo in totem," wrote Oswald in the *Anthropophagy Manifesto*, inverting Freud's postulate (*Totem and Taboo* having been published in 1913) regarding desire and prohibition in tribal societies. Amerindian sexuality, grounded in concepts very different from Western moralism with respect to the body, relations between the sexes, and paternity, among other values, was taken up by Modernism as a means of interrogating both moral and artistic canons. In Modernist literature, sexual freedom and the ontological instability found in Amerindian worldviews

would be brilliantly rendered by Mário de Andrade in *Macunaíma* (1928); similarly, Tarsila's paintings, such as *Abaporu* and *Anthropophagy*, translated to canvas flexible notions of corporality.

For a Brazilian population ever more concentrated in the urban centers of the south, direct knowledge of Amazonia at the end of the 1920s was a quite remote possibility. As members of the Latin American elite, Tarsila and Oswald went frequently to Europe, where their contact with Cubism and other aesthetic currents stimulated a quest for national identity in their own artistic practice. Tarsila, however, had grown up on family haciendas in the coffee-producing state of São Paulo, and had a deep appreciation of rural environments. A 1924 trip to Minas Gerais was particularly important for the development of "Brazilianess" in her work. The Modernist group, in the company of Franco-Swiss poet Blaise Cendrars, visited small towns and cities of the hinterlands, whose landscapes, especially their colors, sparked a new phase in her painting, one that was streamlined in terms of volume and perspective while intensified in its colors and simple forms, evocative of the tropics.

The same year, Oswald published the *Pau-Brasil Manifesto*, whose language echoed other avant-garde manifestos of the era even as it proposed "a dialectical synthesis that [sought] to resolve questions of cultural dependence, traditionally formulated through the binomial national/cosmopolitan" (Schwartz 2002: 165). In the manifesto, Oswald takes the Brazilwood tree (*Paubrasilia echinata*) as a central motif to reflect on the ramifications of colonial extractivism, both economic and cultural. This period of Tarsila's career is also known as *Pau-Brasil*; in it, she applied what she had learned in the Parisian studios of painters like André Lhote and Fernand Leger while submerging herself in the atmospheres of her country and in the varied visual imaginaries generated around it over the course of centuries. This experience was not exclusive to the Modernist group; the Mexicans Diego Rivera and David Alfaro Siqueiros, the Uruguayan Joaquín Torres-García, and the Guatemalan Carlos Mérida are a few of the many visual artists of the early twentieth century who produced important Latin Americanist representations after long stays in Paris and other European cities. The irony of this situation, in which the national increases in value in proportion to its approval abroad, would reach new heights in the Anthropophagy period.

Another important event was a journey to the Amazon that took place between May and August 1927. According to Aracy Amaral, Tarsila and Oswald had planned to go, but in the end were unable to take part in the trip. This was headed by Mário de Andrade, who carried out cultural networking and ethnomusicological research. Accompanying him were cultural promoter Olivia Guedes Penteado, her niece Margarita, and Tarsila's daughter Dulce. Amaral writes that Mário "was received everywhere with official homages. This suggests that, though the number of Modernism's adepts was yet small, they nevertheless represented a respectable intellectual nucleus in the country" (2003: 266). Also interesting is the expedition's encounter with

a region undergoing capitalist development. In her letters, Dulce described impressive landscapes and the delicacies of local cuisine, but also a visit to a huge factory that produced beer and *guaraná*, a soft drink based on local ingredients (267). The reference indicates that Amazonia, far from being the paradise untouched by historical and economic processes of the Anthropocene that is commonly depicted even today, was in fact in western sights from early on, as a seemingly inexhaustible source of natural resources (as other entries in this volume demonstrate) and fertile ground for both evangelization and industrial exploitation.

The clash between Amerindian life in the Amazon forests and the industrialized world whose Brazilian epicenter was São Paulo would be depicted, as mentioned above, by Mário de Andrade a short time later in the novel *Macunaíma*, whose eponymous hero, “without character” according to the author, also exemplifies the idea of “chronically unstable bodies” proposed by anthropologist Aparecida Vilaça in her exploration of Amazonian corporalities (2005). Relevant here is the Modernists’ erudition regarding the wealth of ethnographic, linguistic, biological and botanic studies, travel literature, “fantastic zoology” (Taunay 1934), and other resources that fed not only scientific knowledge but also literary and artistic conceptions of Amazonian Amerindian otherness. Indigenous narratives recorded by the German ethnographer Theodor Koch-Grünberg, for example, appear in *Macunaíma* processed and “digested” by Andrade (Sá 2017), who juxtaposes them with urban experiences within an avant-garde structure of spatial and temporal simultaneity. A similar process, in the realm of the visual, occurs in *Antropofagia*, painted by Tarsila in 1929.

A striking aspect of this painting is the unstable corporality of the human that it implies. In Tarsila’s rendering of anthropophagy, what is shown is not one person eating another, but rather the fluid transition between one subjectivity and another, without the separations necessary to distinguish between *self* and *other*. The position of the feet and legs, for instance, suggests a single person, whereas the heads and torsos belong to two distinct figures, one that faces the viewer and the other in profile. A critic of the time, perhaps inspired by the painting’s title, saw in it “a group of human body parts, all of them amputated” (*Jornal do Comercio*, July 28, 1929, in Amaral 2003: 432). However, although it is indeed possible to appreciate body parts separated like pieces of a puzzle, the effect achieved is not one of dismemberment, but rather of organic unity. The female breast contributes maternal connotations, recalling the Edenic figure of the matriarchy of Pindorama in the *Manifesto*, while the enormous feet emphasize the connection with the earth as physical and metaphysical support of this/these figure(s) in absolute harmony with their surroundings. On this harmonious and intimate aspect rests the artist’s implicit rejection of exoticism. Indeed, Tarsila’s 1938 painting *Maternity*, apparently more conventional in its depiction of a mother nursing her baby, replicates to perfection *Anthropophagy*’s spatial configuration, including the doubling of subjects, the prominent crossed legs, and

the infant's head which appears in the space occupied in the earlier work by the maternal breast.

Returning to *Antropofagia*, its vegetation is semi-abstract, with a cactus and what appears to be the leaf of a banana – a crop of Asian origin introduced by the Portuguese in the seventeenth century – that emerges behind the matriarch's head like a feather, perhaps in a subtle reference to a tribal headdress. Another notable element is the sun in the form of a citrus fruit cut in half. The sun, understood to be the female deity Guarací, “mother of living beings” according to the *Manifesto*, exemplifies Tarsila's surrealism transposed into a Brazilian idiom. Solar energy, like fruit, nourishes living things, as does the maternal breast; on the canvas its form unites the two halves of the human figure that is at once singular and plural. The separations between the human female figure(s), the vegetation and the (female) sun, created by the artist's use of color, are thus relative. From an Amazonian perspective, any element may transform into any other at any moment, defying the rigid systems of classification applied for centuries by European and national scientists in their voyages of discovery and exploration.

Although it is tempting – and necessary to a certain extent – to continue relating Tarsila's painting with Oswald's ideas articulated in the *Manifesto*, it is also crucial to remember that it was another of her works, *Abaporu*, that inspired the Anthropophagy movement in the first place (Amaral 2003: 308). In the cultural avant-gardes of the early twentieth century, women have rarely been recognized as intellectuals, even when their visual presence is a constant in the movements' iconography. This visual presence is not only in their art but also in the personal projection of a performative self, exemplified in Tarsila's case by her extravagant Parisian wardrobe or the short hair and oversized earrings seen in her widely reproduced *Self Portrait I* (1924). Yet her agency is indisputable in the development of an aesthetic vision that at the same time implied a political posture that heralds what would later be called decolonial. Without resorting to epistemological anachronisms, it is significant that scholars of late have begun to reexamine Tarsila's work in ecological terms (see, for example, Toledo and Rangel 2022).

In the period in question, Raul Bopp publicly recognized Tarsila's influence by dedicating to her his poem *Cobra Norato. Nheengatú da margem esquerda do Amazonas* (1931). Considering that Bopp and Oswald de Andrade had been sufficiently inspired by *Abaporu* as to launch a new movement, we can speculate that Bopp's vision of Amazonian nature had as much to do with Amaral's oneiric imagery as with scientific narratives (including that of Koch-Grünberg, as Priscila Faülhaber [2018] points out), independent of any direct contact with Indigenous people's worldviews. The Modernist generation learned about the Amazon, its peoples and their *nheengatú* (languages) through books and, at best, brief visits like the 1927 trip described above. Their fascination thus retained traces of exoticism, since the impulse to ground cultural imaginaries in Brazilianness meant producing representations recognizable as

other, even as they continued to publish and exhibit their work in Latin American and European cities.

Ultimately, the defense of the forest and its inhabitants as a sociological problem, in response to projects like the *Marcha para o Oeste* (March to the West) in the 1950s (Sick 1961: 6–7) or the trans-Amazonian highway inaugurated in 1972 by the civilian-military dictatorship, would be taken up by future generations who were more mobile and possibly more aware of the social and environmental challenges that would become ever more urgent over the course of the century. It is not accidental that the Indigenous artist Denilson Baniwa, whose work centering on the dispossession and resistance of Amazon peoples against the violence of the Anthropocene is studied in other entries in this volume, has reexamined Modernism in works such as *Re-Anthropophagy* (2018), in which he enacts a critical appropriation of the movement and its premises (Varison 2024: 18). While Tarsila do Amaral did not overtly portray Amazonian and Brazilian hinterlands as sites of struggle, her art constitutes an important point of contact with and celebration of autochthonous notions of the body and its environment, in which the separation between self and other dissolves under a matriarchal sun that nourishes and unifies.

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**Visual Representations in Mesoamerica
from the Mid-Nineteenth Century to 1950**

The Panama Canal

Édgar García Valencia and Citlalli González Ponce



Carlos Endara Andrade, *Explosión del dique de Gamboa* (1913). Photograph. Source: Ricardo López Arias Collection.

The construction of the Panama Canal is a phenomenon that historically exemplifies the Anthropocene in twentieth-century America. It synthesizes a broad range of actions that systematically fostered and reinforced the dominant model of production, consumption, and culture historically associated with the Anthropocene (Da Silva, Zarrilli, and Pádua 2024: 307). We start from a photographic image, understood as a “bearer of modernity” (Belting 2007: 266), which in its very production offers a telling example of the social expectations surrounding progress.

Explosión del dique de Gamboa (Gamboa Dam Explosion) (1913) by Carlos Endara Andrade, is a narratively striking image, rich in relevant details across all its planes. Given its known context, it captures an event of profound and multifaceted significance in social, national, environmental, and political terms.

At a denotative level, this monochromatic image features a wide-angle shot with a high-angle perspective, arranged in diagonal compositions that reveal a panoramic scene of a watercourse bordered by earthen embankments. Divided diagonally, the lower right foreground depicts a crowd of men in suits and hats and elegantly women in long dresses, their backs turned to the camera as they stand along the edges of the railroad tracks that emerge among the trees. In the upper-right third of the image, almost in the background, the viewer's attention is drawn to the blast itself, a detail corroborated by the image's title.

Connotatively, the well-dressed spectators, transported by the railroad that invades the exuberant nature, gathered to witness the spectacle of territorial destruction that promises modern life improvements. A spectacle made possible, moreover, by the era's remote control communication technologies, as the exact moment of detonation was signaled from the United States. Castellero Calvo (2014) describe the event as follows:

The explosion of the Gamboa dam, as seen in the photograph, was a stellar moment in the construction of the Canal by the U.S. Americans. It took place on the afternoon of October 10, 1913, when President Woodrow Wilson pressed the telegraph in Washington to detonate the Gamboa dam. The signal traveled from Washington to New York, then to Galveston, and finally reached Panama almost instantaneously. It was the first time something like this had been carried out remotely. The waters of the Chagres River, held back by the dam, began flowing into the great ditch to fill the Culebra Cut, eventually becoming an extension of Gatún Lake.

This image, obtained from its glass plate negative, belongs to the private collection that gave rise to the Fototeca de Panama (Panama Photo Library). Carlos Endara Andrade of Ecuadorian origin, is regarded as Panama's prime photographer and one of the country's pioneers of the medium. Through his lens, he documented society and its transformations from the late nineteenth century onward. His career was closely linked to the Canal project, having begun as a draftsman during the initial French phase with the Universal Company of the Interoceanic Canal; years later, as a professional photographer, he was hired from 1912 to 1914 by the president Belisario Porras to record the construction progress during his administration. From early in his career, Endara showed both his embrace of and commitment to modernity: upon discovering photographic techniques, he traded drawing for a camera, traveled to Paris to study and then returned to establish a fully equipped photography studio,

building one of the most significant visual archives of the region (Schlenker 2021). It is thus unsurprising to find in his work – produced both in Panama and Ecuador – a consistent and optimistic depiction of “social progress” in the early twentieth century (Granizo 2021).

The foreign interest in exploring Panamanian territory and executing the aforementioned project is also evident in the commissions and expeditions sent to study and photograph the region, which were also instrumental to the development of photography in that country and even in Endara Andrade’s own professional formation. In 1863, the Scientific Commission of the Pacific arrived in Panama, sent by the Spanish crown, followed in 1870 by the expedition of Thomas O. Selfridge, tasked with identifying potential routes for the construction of a canal. The photographer hired for this U.S. project was Timothy O’Sullivan (Castillero Calvo 2014).

Later, in 1875, Eadweard Muybridge also worked in Panama; his photographic archive remains among the most extensively studied (Lewis Morgan 2014; Molina Mateo 2016; Molina Mateo 2021; Navarrete 2017). Remembered in the history of photography primarily for his contributions to chronophotography, Muybridge was commissioned by the Pacific Mail Steamship Company and the Panama Railroad Company to produce albums of images that would showcase the country and attract investment (Coughlin and Gephart 2019). Muybridge’s work reveals multiple facets of this place as it then existed. As Molina Mateo observes:

On that journey he was a photographer in service of power and, in this regard, the photo album became a visual expression of the major interests vested in Panamanian territory. Through his travels and his photographic representations, Muybridge aestheticized the Central American landscape. (2021: 71–74)

Castillero Calvo, however, argues that many of Muybridge’s images portray starkly the urban decay and poverty of the period – a reality that changed rapidly in the following years:

In 1881 the French began construction of the Canal, and Panama was suddenly flooded with immigrants. Tons of goods arrived to meet explosive demand from new consumers, along with massive modern machinery and equipment for the project, unleashing a true economic frenzy. With this new wave of prosperity came photographers. Transcendental events had to be recorded through the “magic lens.” (2014: 25)

Photography thus became an essential tool for documenting, faithfully and objectively, the progress and civilizing endeavors aimed at improving society. In this context of expansion, many photographers converged upon the monumental project to showcase the forging of a promise: a better future. In 1907, Ernest “Red” Hallen

was appointed by the Isthmian Canal Commission (ICC) as the official photographer of the grand project. For thirty years, he was tasked with recording the Canal's continual transformations (Lewis Morgan 2014). A small portion of this archive of more than 12,000 images was exhibited at the Museum of Modern Art in New York in 1976, giving new meaning to this historical legacy (MoMA 1976). Many photographers worked in Panama during this period. Castellero Calvo (2014) further notes that from the late nineteenth century through 1940, Panama was overrepresented in photographic records – yet paradoxically, post-1940 photographic collections are scarce and difficult to locate.

The body of images produced in the region, particularly in the first forty years of the twentieth century, documents both visually and symbolically the magnitude of what the Canal's construction represented. Numerous photographs, by authors still unknown, are part of that vast visual corpus created before 1940, showing the territory's historical role as a commercial space of exchange, though still without the maritime traffic that would turn it into a new symbol of globalization and imperialism in the twentieth century. Such themes invite multiple lines of questioning: What has been the Canal's significance in shaping present levels of consumption? What military importance did it acquire, whether immediately upon completion, before World War I, during World War II, or in the 1989 U.S. invasion under the so-called "Operation Just Cause"? However, one question we must ask ourselves in the context of the Anthropocene is the relationship between human intervention and the environment, and the transformations brought about by altering so drastically the isthmian landscape.

Paradoxically, one of these first large-scale interventions led to the failure of the French initiative, as nearly 20,000 workers died from malaria, yellow fever and other tropical diseases. Seeking solutions, when the United States took over the construction project, a team of scientists was dispatched, including a group of entomologists who identified the mosquito as the vector. The paradox lies in the fact that the entomologists – sent to investigate the causes of the problem – discovered that the main causes, especially mosquito breeding, were not "tropical inevitabilities" but rather the direct result of human intervention, primarily due to that initial influx of workers. Thus, efforts to control mosquito proliferation became pivotal to the project's success. At the same time, this situation reveals the precarious conditions endured during the initial French attempt – conditions that persisted in later phases, given wage inequalities between U.S. and non-U.S. workers (Smarthistory 2024).

The Gamboa Dam photograph is therefore significant, as it captures an event that demonstrates power over nature – and more crucially, the power wielded by capitalist and political interests. This made it a fitting spectacle for Panama's emerging elite, who, we can infer, believed that progress required such demonstrations.

The Panama Canal ignited a new wave of globalization unprecedented in the region since the Magellan-Elcano expedition. It prioritized capital, streamlined the

circulation of goods, and bolstered military power within a politically stable zone – enforced through rigid control of this strategic territory by an imperialist power. The Canal not only enabled transit between two oceans but also accelerated globalization through imperialism, in a reciprocal exchange.

Its construction accelerated material consumption, trade flows, and economic industrialization, as well as population growth in the region. At the start of the U.S. construction phase alone, 40,000 workers arrived to a settlement of just 20,000 inhabitants (Moreno 1993: 133). CO₂ emissions surged due to relentless deforestation, threatening to this day both the fragile ecosystem and the Canal's very viability due to sedimentation. These processes unfolded alongside an intense imperialist model: from Spain's early interoceanic transit plans in the sixteenth to eighteenth centuries, to France's failed construction attempt in the late nineteenth century, to the United States' decisive imprint.

The U.S. extended its dominance over the zone, beginning with the railroad in 1856, followed by support for Panamanian separatists to break away from Colombia in 1903, and later with the Canal's construction and administration from 1906 until 1999. Even in late 2024, the issue returned to the public discourse when the U.S. president-elect suggested reasserting U.S. American control over the Canal after a quarter century under Panamanian administration (Seisedos 2024) – revealing still-unabated imperialist ambitions to dominate both the territory and strategic routes. This stems not merely from commercial interests but also from its significance for military power, both wielded as economic tools. These events, briefly outlined here, can undoubtedly be linked to the historical constitution of the Anthropocene, as previously noted for the region by Keech and Olczak (2024), and especially by Sutter (2023).

Translated by Omar Sierra Cháves and revised by Luisa Raquel Ellermeier.

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United Fruit Company: Drainage Work

Kevin Coleman



“Cross sections being taken on drainage work, Colombia Division, circa 1920s.” Source: United Fruit Company (1999: olvwork719713).

Perhaps the most obvious place to begin an examination of images of the Anthropocene would be to consider the photo archives of multinational corporations.

In the early twentieth century, the United Fruit Company (now known as Chiquita Brands International) challenged the sovereignty of the Latin American and Caribbean countries in which it operated, giving rise to the notion of company-dominated “banana republics.” Photography was central to the company’s endeavors. The camera helped link the company’s headquarters in Boston to its various divisions in Honduras, Guatemala, Costa Rica, Panama, Colombia, Ecuador, Jamaica, and Cuba, documenting its accumulation of capital with (of course) the camera. This relationship is made particularly clear by the United Fruit Company’s Photograph Collection at Harvard University, made up of around 10,400 pictures and comprising the official, sanitized record of the company. The company used photographs to present its work to its shareholders and to the public, to control nature at a distance, to scientifically analyze the ripening of bananas and the spread of disease, to convert biodiverse forests into monocrop plantations, and to monitor the health and productivity of its workers. Added to this list of corporate uses of photography is the most ubiquitous of all: advertising, through which the company sought to entice consumers into buying more bananas. The official company archive at Harvard is an example of photographic self-forging, a form of self-authorship in relation to others through images, by a corporation (Coleman 2016). Photography was integral to carving up tropical landscapes into agricultural machines that combined human labor and a single species of genetically identical plants to produce a ripe yellow commodity.

Consider a photograph with the seemingly boring title of “Cross sections being taken on drainage work, Colombia Division, circa 1920s.” White men with impressive machines are the obvious protagonists in this scene. Three men are engaged in a topographic survey. One holds a measuring tape while standing knee-deep in water. Another holds the tape to a vertical pole with black and white marks on it. Still another, with perfect posture, stands looking through scope at something outside of the photographic frame. Observation itself is under observation in this photograph. The photographer’s gaze captures the topographer’s. Both are put in the service of their company and its effort to sell cheap bananas.

This photograph documenting the techniques of the corporation – careful observation and measurement, science, engineering, and white male dominion over tropical nature – is also formally interesting. It is, we might say, corporate art. Between the men in the foreground and the banana plantations in the background sits a crane-like machine with tank treads and a long boom that cuts diagonally through the sky. The boom of the crane in the top third of the image runs parallel to the drainage canal in the bottom third. The vertical topographic measuring rod lines up with the vertical frames of the photograph. Yet nature, which we see here as being carefully manipulated by the company, exceeds the image. The water flows into the frame and, taking up nearly the entire bottom of the image, out of it. This image from a corporate archive is intentionally, even artistically, produced.

The photographer, in turn, renders the company and its agents as artists reshaping a landscape. The topographers and heavy equipment operators are thus the photographer's analogues. They are intentionally producing earthworks. These men are *anthrōpos* (humans) creating the *καινός* (new), the *-cene*. But before we insist on this photo as an emblem of the Anthropocene, let us recall that the men depicted are employed by a company who has directed them to measure and rework this landscape. Hence, in the actions specific to this photograph, the "human" is determined by capitalist relations of production and consumption.

The goal of this corporation was to produce bananas as profitably as possible. Doing so involved toppling biodiverse tropical forests with monocrop plantations. Same, same, same as far as the eye could see. Clones, highly susceptible to disease, enabled the manufacture of a standardized commodity: the ripe, blemish free, yellow banana that North American consumers preferred.

In the official photographic archive of the company, the violence of reshaping "landscapes and livelihoods" (Soluri 2005) is not immediately obvious. Instead, it is often the captions, not the photographs themselves, that prompt viewers to note the racial distinctions that the company used to divide its workforce. A picture of the company's hospital in Tela, Honduras, for example, depicts only lines of perfect symmetry – windows, doors, stairs, and the roofline of the large two-story hospital – with the graceful curves of palm trees in the foreground. The caption, however, alerts viewers to a racial order as tidy as the architectural one made visible in the image: "Side view of hospital, showing native wards, another wing back of this one. The front of building has the white ward and private rooms and the dispensary below" (United Fruit Company 1925). This disjunction between the content of the image and the caption describing it necessitates reflection on the categories used to ingest this object into Harvard's collections and then render it findable to researchers. Its only subject headings are "photographs," "bananas," and "hospitals."

The company's internal documents disclose what their photos obscure and the occasional stray caption makes obvious (Coleman 2015). The company saw its workforce through racialized lenses. While the company and the caption writer saw racialized segregation, in the archive, the photo appears to be race-neutral. In the finding aid for this collection, neither "nature" nor "race" are considered subjects. What we have instead are descriptions such as the one: "Subjects depicted include buildings, construction of new hospital, La Lima (1949), Herman Wimmer's trip (1946), companion photos of 1920s Tela Hospital (1923), schools (1921), labor camps (1924), and Tela & Tela R.R. Co. (1921)" (United Fruit Company [Finding Aid] 1999). The categories through which these images are incorporated into the archive are limited, anodyne, and do not reflect the terms that the company actually used to make sense of its workforce.

That the company used such distinctions between "native" and "white" wards is further confirmed through its own internal documents. The United Fruit Com-

pany's Medical Department gathered data from each of its hospitals. Patients were sorted first as "Employees, White" and "Employees, Colored." Then as "Non-Employees, White" and "Non-Employees, Colored." In the memoranda sent from one division to another, the racial identity of particular "agitators" was as important as the segments of the workforce that the labor organizers were attempting to reach. In April 1920, an agent of the United Fruit Company's Steamship Service in the Panama Canal Zone wrote to managers in other divisions:

A personal friend of mine in the Police Department advised me that John Neverson and Josiah Johnson were aboard [the SS Yarmouth]. Neverson is a yellow negro with a brown mustache coming from St. Vincent. He has been employed in the Panama Canal for the past two years as a clerk and has been quite active as an agitator. Josiah Johnson, Black, black mustache, Jamaican. [...] You may expect trouble from them as they are labor agitators (O'Hearn 1920).

The Black bodies of Neverson and Johnson were a concern to the company, as were the ideas about labor organizing that they carried with them as they travelled through Central America. The owners of capital, not the *anthrōpos*, orchestrated the felling of forests, the draining of swamps, the rerouting of rivers, and the movements of a racially and ethnically diverse workforce to the newly created banana plantations.

But for the sheer quantity of photographs in this collection, black and brown bodies appear in the pictures far less than one might expect. The company's visibly racialized workforce toiled in the plantations, processing plants, and machine shops. The relative absence of black and brown bodies from these photographic spaces is partly because the company photographers tended to focus on buildings, plant specimens, and the Fordist elements of industrial banana production. This apparent absence is also because the company figured the agents of the mass production of bananas as white men. In the United Fruit Company Photograph Collection, white men appear in the photographs as scientists (peering into microscopes), engineers (rerouting water flows), topographers (rendering the natural space of a tropical forest into a homogenous grid that was being carved up into a plantation), and executives (in suits and ties). Whiteness is positively valued in these pictures. Blackness and brownness are usually excluded from the company's photographic frame. Nature, in this collection of images, is being manipulated by a white man who forms part of the corporate body known as "United Fruit."

Capitalism and photography operate according to a shared logic of abstraction, alienation, and the conversion of use value into exchange value. As Coleman and James (2021) argue, private photography is an illusory solution to this problem, a solution that withdraws the public from its deliberative role in a state and the art out of art photography that could serve to image universals and replacing both with

the immediacy of the circulation of images of people and things that drive market-based civil societies (Stimson 2021). The photo “Cross sections being taken on drainage work, Colombia Division, circa 1920s” makes the process visible. Here looking and measuring are undertaken to convert “nature” into an agricultural machine. The visual rhymes between this archive and the sketches from sugarcane and indigo plantations under regimes of slave labor are unmistakable – consider, for example, the illustrations of the French Caribbean in Jean-Baptiste Du Tertre’s “Indigoterie,” in his *Histoire générale des Antilles habitées par les Français* (Paris, 1667). Photographs of overseers, always white, are a staple of Harvard’s United Fruit Company collection. But so too are the dissonant notes. Machines, standardized production, and wage labor are the norm here. Zooming in on this photograph of a massive earth-moving piece of iron, cables, and white active men measuring, we find, in the background, a Black man in overalls. In this Black worker, we have both the optical unconscious of the photo and the constitutive outside of the United Fruit Company’s notion of progress.

Historical geographers remind us that it is not the “Anthropos” in general that has reshaped global climate but capitalism, a way of organizing nature, human and nonhuman, to accumulate wealth. The most accurate name for this global epoch is the *Capitalocene*. The United Fruit Company Photograph Collection provides a corpus of images made by and for a capitalist enterprise that created new commodity chains that linked the production of tropical fruit in Latin America and the Caribbean to its marketing and consumption in North America. That specific way of organizing plants, soils, bodies of water, and the bodies of people was predicated on the capitalist goal of making profits.

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Automobiles in Mexico City

Andrew Grant Wood



Manuel Ramos, *Automóviles y peatones en el zócalo de la Ciudad de México* (1908). Photograph.
Source: author's collection.

The automobiles photographed by Manuel Ramos in the *zócalo* or central plaza of Mexico City on a cold and rainy day in 1908 provide an early illustration of a burgeoning global “car culture” that would significantly contribute to the transformation of the planetary environment over the course of the next century. In addition to growing industrialization and the rise of atomic technology during World War II, the popularization of fossil fuel-burning transport has been so profound that some say the planet has now entered a new geological age – the Anthropocene – in which humans exert a disproportionate influence over the Earth.

With the late-nineteenth-century development of gasoline-powered vehicles in Europe and North America, motorized transport soon came to Mexico and Central

America. In Mexico, 136 vehicles circulated by 1903. Three years later, approximately 800 were active, prompting the administration of longtime President Porfirio Díaz to establish a highway code that set speed limits and enacted a vehicle tax. By the time of Ramos' photograph above, Díaz had purchased a Packard. His successor, Francisco Madero, opted for an U.S. American vehicle, while Madero's wife had her own monographed Mercedes Benz. Although revolutionary violence led to the closure of Mexico's first automotive manufacturing plants, including German manufacturer Daimler and the French motor company Renault, automotive production soon resumed. In 1921, Buick became the first U.S. firm to begin making cars in Mexico, with Ford Motor Company following in 1925.

Perhaps to the surprise of many, including photographer Manuel Ramos and others of the Mexico City elite, automobile culture rapidly extended into nearly every region of Mexico's vast national territory as well as into much of Central America to the south. Picture postcards of the U.S.-Mexican border at Tijuana during the first decades of the twentieth century document heavy vehicular traffic to racetracks, casinos, hotels, and drinking establishments of Baja California. Similarly, historic photographs and postcards from El Salvador, Nicaragua, Guatemala, Honduras, and Costa Rica provide testimony to the growing presence of motorized transport throughout the isthmus. The 1913 opening of the Canal Zone in Panama further helped facilitate the distribution of U.S. and other foreign manufactured goods throughout the hemisphere.

Meanwhile, John D. Rockefeller's Standard Oil had risen to become one of the Western world's major oil suppliers before anti-trust legislation challenged the company's monopoly in 1909. First facilitating what would become a massive program of resource extraction, U.S. engineers oversaw exploratory drilling for oil starting in 1869. In 1901, a rich supply of crude oil began to flow out of the Ebano oil field near Tampico, Tamaulipas, under the auspices of Californian entrepreneur Edward L. Doheney. Ensuing federal and state legislation privatizing land afforded widespread industry development in the late nineteenth century, most notably by Doheney's Huasteca Petroleum and British engineer Weetman Pearson's El Aguila firm at the Potrero del Llano site near the Gulf of Mexico port city of Tuxpan, Veracruz. These and other efforts led primarily by voracious foreign operators led to Mexico's first exports as an oil-producing nation in 1911. Legislation, including Article 27 of Mexico's 1917 Constitution, which claimed subsoil resources as national property, soon set off a contested twenty-one-year negotiation with foreign oil companies and the eventual nationalization of the industry by President Lázaro Cárdenas in 1938. Around the same time, powerful business and government agents in Central America similarly directed a process of exploring, drilling, and developing areas for hugely profitable oil production.

As the transportation revolution took off across the hemisphere, Henry Ford's plantations in the Brazilian Amazon supplied, in part, the natural rubber (subse-

quently “vulcanized” using Charles Goodyear’s pioneering technology) needed to equip fossil fuel-powered vehicles with durable tires that greatly enhanced mobility. Later, South Asian rubber, under the British and Dutch colonial tutelage, would add significantly to the burgeoning international market.

Related iron and steel production centered in and around the northern city of Monterrey, Mexico, contributed greatly to industrialization efforts and, by extension, Mesoamerica’s fast-growing automobile market. Initially, a good portion of the steel produced was exported to the United States and Britain, but subsequent efforts increasingly supplied material essential for domestic automobile assembly – encouraged, in part, thanks to the import substitution policies of the mid-century.

As automobile culture took hold, petroleum products not only powered internal combustion engines but also provided raw material for the continued building of paved roads. Yet the construction of macadam and asphalt infrastructure took a great deal of political will, time, resources, and money. Not surprisingly, these efforts constituted a highly contested process of planning, funding, and negotiation between state officials, business interests, and citizens as each sought to identify priorities, determine access, and visualize future opportunities. Precisely where, for whom, and how modern transportation would be made available were decisions that have historically proven to be complicated by politics, corruption, and cronyism as countless new motorways somewhat recklessly stretched across the national territories of Mexico and Central America at full throttle.

Extensive road construction proved part of a larger process of modern state formation and related national economic development. Immediately following the Mexican Revolution, the national network totaled only about 28,000 kilometers with many of these routes comprised of dirt and gravel pathways unable to support the first generation of gas-powered vehicles. Painfully aware of the need for new construction, both government and civic groups, beginning with the administration of President Venustiano Carranza in 1918, set out to greatly expand the nation’s motor transport infrastructure, understanding by then that the collective undertaking was an essential element in a larger national post-revolutionary economic recovery plan.

Meanwhile, international commitment to a Pan-American Highway (known in Mexico and Central America as the Inter-American Highway) gained ground in 1937 when Canada, the United States, Mexico, and several Central and South American countries signed the Convention on the Pan-American Highway. The previous summer, an integral section of the trans-American route had opened between Nuevo Laredo and Mexico City, prompting a proliferation of Mexican civic and business associations geared toward promoting the use of motor cars to come into existence. Here, for example, the newly created Mexican Automobile Association effectively lobbied both for enhanced investment in roadways as well as the construction of related service facilities such as hotels, restaurants, and filling stations.

As automobile culture took greater hold, oil and gas reserves were increasingly drawn upon as fleet after fleet of “new and improved” motorized vehicles rolled off production lines. By the OPEC oil crisis in the mid-1970s, social and environmental conditions in Mexico, Central America, and the rest of the developing world had significantly changed. Increasing rates of rural-to-urban migration soon meant that most of the population now lived in cities. The number of people residing in Mexico City, for example, increased from approximately 541,546 in 1900 to 5,479,184 in 1960. By 1980, residency totaled 13,027,620 which then rose again to 22,505,315 in 2024. Not only has the Mexican capital grown into a mega city, other key provincial centers have experienced comparable rates of population growth, including Guadalajara, Puebla, Monterrey, and San Luis Potosí, among others. Meanwhile, the Central American capital cities of Guatemala City, Panama City, San José, Tegucigalpa, San Salvador, Managua, and Belize City have similarly witnessed substantial population increases.

Massive urbanization has meant easier access to new technology for a much wider segment of the population. Yet just as the dazzling imports pictured by Ramos in the *Zócalo* of Mexico City sparked the imagination of pre-revolutionary social elites, the ever-enduring allure of car culture has proven irresistible for the masses. Tragically, widespread environmental degradation is increasingly the result.

Engine exhaust and congestion have compromised air quality and public health in nearly every Mexican and Central American city. Increasing traffic causes frequent accidental injury and death. Some have also argued that the rise of motorized transport has served to deepen social inequalities not only between rich and poor but also between men and women as mechanized mobility in many societies tends to enhance male privilege. In the end, the vast social, economic, and cultural change wrought by the development of fossil fuel-powered vehicle transport has proven to be somewhat of a “time bomb” as mass motorized mobility has produced an increasingly heavy set of environmental costs causing us to transition, many say, into a new, Anthropocene era.

When photographer Manuel Ramos created his images of early model automobiles in the *Zócalo* of Mexico City, he bore witness to a “civilizing” discourse that privileged material, technological, and economic development. Yet perhaps little did he and his contemporaries know at the time that the same modernizing capitalist growth that Mesoamericans have invested so heavily in has inevitably led to extensive, and perhaps irreversible, social desecration of the natural environment.

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Indian Extracting Pulque

Mayabel Ranero Castro



Claudio Linati, "Costumes mexicains. Extraction du Pulque," plate 38 in *Trajes civiles, militares u religiosos de México* (1828). Source: Reproducción facsimilar (1956).

The Importance of Maguey and Pulque in Mexico

Claudio Linati (1790–1832) introduced lithography to Mexico. Facing prosecution for revolutionary activity in Europe, Linati arrived in Mexico with the purpose of installing a lithographic press in the country, without foregoing political activism. His album *Trajes civiles, militares y religiosos de México* (Civil, Military and Religious Costumes of Mexico), published by a newspaper in 1828, first showed what were known in the nineteenth century as *common types*. Traveling artists made this form extensively popular. The album was highly respected as it presented Mexican characters and scenes at the same time the country had just gained independence from Spain. Lithography gained importance in these years as it reproduced, in an accessible format, the colorful images of novel realities to a nascent reading public. These were disseminated in popular advertising and other publications throughout the nineteenth century (O’Gorman 1955).

Linati’s album consists of forty-eight lithographic plates of common Mexican archetypes in color that portrayed traditional scenes. Most of these characters came from the working-class sectors, detailing, in particular, Mexico through paintings, in their trades and ceremonies, their clothing or nudity, and the animals and plants characteristic to their region. To a lesser extent, these reproductions also showcase buildings or monuments. In general, these plates were imaginative recreations rather than faithful portraits, in which the classic affiliation of Linati’s art can be seen (Fernández 1956).

This entry’s image shows a *tlachiquero*, a word derived from the Nahuatl language for a laborer who extracts a liquid known as *aguamiel* from the maguey through an elongated dry squash, called a *tragadero* or *acocote*. The man is represented in semiprofile with his eyes closed and directed towards the center of the plant. His physical features and somewhat bent posture – which for Justino Fernández suggests something “of a ballet scene” (1956: 56) – do not correspond to Mexican realism, since his physiognomy is Europeanized and his complexion exceeds the national context. The other half of the image is of the maguey, cut so that the extraction of the liquor can be clearly seen. This foregrounding of the man and maguey is complemented in the lower part by instruments of his trade: the bucket for depositing sap, and a hat and fibers for carrying it back. It should be noted that in subsequent representations of *tlachiqueros* (both in drawings and photographs), the human figure is presented with his back turned and seems to be lost in the large, sharp stalks of the maguey, as if he were assimilated by admiration into the plant (Debroise 1994: 158). There exists in the aesthetic impact of the representation of the *tlachiquero* a magnificence visually attributed to the maguey itself.

After this extraction of liquor, pulque – a quintessential Mesoamerican alcoholic beverage – would be manufactured. The myth of its origin relates to deities such as Xochipilli, Xochiquetzal, and Mayahuel, who are associated with and underline its

importance (Gonçalves de Lima 1978). The consumption of this alcoholic beverage in pre-Hispanic antiquity was ritualized and subjected to strict moral and disciplinary controls, which were lost during the colonial period, leading to its consumption becoming a social problem (Corcuera 1994:195-231).

Agave is a Mesoamerican genus. Three-quarters of agave species are endemic to Mexico, originating from the country's semiarid regions. These species' interactions with human began in prehistory (Colunga et al. 2017: 276), and Mesoamerican civilizations took full advantage of these plants holistically at every stage of development and of every part of the plants. The pulque maguey (*agave salmiana*, *astrovirus*, or *American*) is thought of as a miracle plant as it provides humanity with the basics for life: food, drink, medicine, construction materials, and fibers for spinning and foraging. On the plots where it is grown, it also has the function of limiting the soil, creating living fences, as well as habitat for edible insects.

The maguey was incorporated into the Mesoamerican *milpa*, a highly efficient productive and cultural complex designed to take advantage of all natural resources. Its main elements – corn, beans, squash, and chilies – were completed with maguey, which ensured an almost continuous food supply. On rugged soils, maguey and corn formed terraced agrosystems contained by *metepantli*, fences formed by rows of maguey. The borders formed by the subfamily *Agavaceae* allowed crops to be diversified and blocked erosion while also enriching the soil with nutrients.

These diversified native farms, during the colonial period, were replaced by large *haciendas*. Towards the eighteenth and nineteenth centuries, sugar, livestock, and cereal farms occupied a vast part of the national economic system. All of these required large bodies of land and water, unlike the *pulquera* farm, which did not (Barrera Basols and Barrera de la Torre, 2024: 200). Pulque farms were mainly located within the Llanos de Apan: a location in the central Mexican highlands with a surface of 250,000 hectares. Its clay, limestone, and sedimentary soil were suitable for the cultivation of *Agavaceae*, which began to be planted extensively (Ramírez 2021: 402).

Pulque became a popular Mexican national drink. During the three centuries of the colonial period, continuing until the nineteenth century, it was an essential component of the basic diet of all peasants, artisans, and workers, alongside corn, beans, and chili. It constituted much more than an alcoholic drink, only losing its centrality between the 1930s and the 1950s, when a modern and westernized model of life became prevalent in the country and pulque began to appear as an anachronism of Mexico's poverty and backwardness.

How was pulque made? Once the maguey matured (which could take from eight to twelve years), its *quiote*, that is, its inflorescence or bloom, would become notable. The center leaves would then be removed to form a kind of cavity where the sap that would feed the maguey bloom was concentrated. For this purpose, it was scraped twice a day to promote the production of a liquid, *aguamiel*, whose careful fermentation would then produce pulque.

Claudio Linati's lithograph depicts this extraction of liquor through a siphon made from acocote, a type of Mexican gourd. The aguamiel was then transported in small barrels or animal hides to its site of fermentation where it would be converted into pulque. In the haciendas, a space known as the *tinacal* was responsible for monitoring the delicate process, incorporating fresh liquor to that which was already fermenting (known as the "*semilla*" [seed]). From there, the liquid was moved and its fermentation continued in the successive vats, until it reached the finished stage of good quality pulque. The process lasted seven to fourteen days, depending on the characteristics of the liquor, the weather conditions, and the season of the year (Ramírez 2018: 48–49)

Each maguey plant produced approximately one to one and a half thousand liters of aguamiel in the six months of its operation, after which it dried up. For this reason, to produce pulque on a large scale, haciendas had to have extensive plantations at various stages of maturation. Traditionally, almost a decade before it reached maturity, maguey was planted together with other species and types of small-scale agriculture and ranching. With the increase in demand, specialization favored the creation of large *haciendas pulqueras*, which quickly became economically and politically oligopolistic. Their location in the Llanos de Apan had suitable geo-ecological conditions and was relatively close to Mexico City, their main market (Ramírez 2018: 39; Leal and Menegus 2011: 29).

The manner in which maguey is grown and fermented into pulque remains part of the cultural heritage of Mesoamerican peoples. In the early colonial period, Indigenous groups strictly controlled its production and sale, but this changed toward the end of the seventeenth century, when tax collection was started to regulate its introduction to Mexico City. The pulque trade at this time was a lucrative business for private individuals, until the Spanish Crown repealed its control of the trade around 1763 (Ramírez 2018: 35). The increase in demand for liquor stimulated the expansion and specialization of the Apan haciendas, at the time numbering around two hundred, all owned by a Mexican elite that soon became known as "the aristocracy of pulque."

A boom in the trade occurred between 1864 to 1884, which fomented new techniques in pulque's fermentation, commercialization, sale, and consumption. One of the biggest advances was the introduction of the railroad to the region, which allowed for more rapid transportation (Ramírez 2018: 62). Control was taken over by the Compañía Expendedora del Pulque, the largest beverage monopoly to ever exist in Mexico. This company ensured the introduction of pulque to Mexico City through a complicated fiscal and administrative system governing its pulque outlets (Leal and Menegus 2011).

The growing demand for the beverage, on the one hand, generated wealth for its producers; but, on the other hand, it generated an alcoholism that was seen as responsible for an increase in crime. Beginning in the administration of President Por-

firio Díaz, temperance campaigns were organized to combat against the scandalous alcoholism found especially among the working classes (Corcuera 1996: 62). The consumption of pulque was intensely disparaged because of the excesses, suicides, and violence that it purportedly promoted. Nevertheless, producers and distributors still sought to improve the industry, implementing modernized and hygienic practices both in its production and its bureaucracy.

The Mexican Revolution altered production systems in the Llanos de Apan, as well as distribution and sales in Mexico City. On the farms, the revolution brought about the destruction of the railway systems, affected hacienda facilities, contaminated the *tinacales*, and damaged the replacement of young plants suitable for production in the maguey fields. In the cities, the supply of pulque was interrupted, and taxes were raised. In spite of all this, during the decade of revolution, pulque production continued with ups and downs in the areas that produced the beverage. Between the 1930s and 1940s, what had been an extensive socioeconomic system was transformed, mainly due to changes in land use, ownership, and crop preference. Among these changes, the planting of barley, which was used for beer and produced an annual yield, was encouraged to the detriment of maguey exploitation, which required a decade to reach maturity. But fields of maguey had also performed ecological functions, as previously mentioned, against soil depletion. Thus, their removal caused serious problems in the former pulque farms, such as low fertility and high erosion (Ramírez 2021: 402).

The beer industry began to develop during the administration of General Porfirio Díaz; its consumption, which began among the upper classes, was advertised as clean and modern. Beer acted as a counterpoint to pulque, and a smear campaign was carried out against the latter, emphasizing its contribution to health problems and the difficulties in conservating the product. The *pulqueros* (producers of the drink) could do little to resolve these issues and were quickly pushed out of the spheres of governance. In the 1950s, beer firmly established itself in the country's economy, taste, and sociability (Ramírez 2015).

Nevertheless, it should be noted that the beer industry is still a recent development in the nature and culture of Mexico. For example, while maguey is suitable for the dry conditions of the central highlands, beer requires cereals as raw materials and, above all, an enormous supply of water. Its first factories had to be close to water supplies in Mexico City or to areas already with large sources of water, such as the Orizaba Valley (Reyna and Krammer 2012: 43–55). However, in the current time of water crisis, its production continues to highlight the need to discuss the regulation of the provision and use of water sources as a political issue.

Translated by Omar Sierra Cháves.

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**Visual Representations in the Caribbean
from the Mid-Nineteenth Century to 1950**

Sugar Plantation Flor de Cuba

Jochen Kemner



Eduardo Laplante, “Ingenio Flor de Cuba,” in Justo Germán Cantero, *Los ingenios. Colección de vistas de los principales ingenios de azúcar de la Isla de Cuba* (1857).

Few production systems are as closely linked to a specific region and the transformation of the natural environment as the plantation in Caribbean agriculture. As a socioeconomic institution, it represents economic exploitation, especially of enslaved Africans and their Creole descendants, and later also of Chinese contract workers. In addition, the sugar plantation also led to sociocultural and political penetration into Caribbean societies, the consequences of which still linger today. In this context, sugar production was the dominant agro-industrial activity well beyond the end of the colonial period, indeed, until the end of the twentieth century.

The first European conquistadors had already noticed the extraordinary natural conditions offered by the Caribbean islands and surrounding areas for growing

sugar cane. The tropical temperatures and humidity, as well as the extensive forest areas – which provided organic matter for soil fertility and a reserve of energy – created the conditions for the establishment of the first plantations, despite the fact that these were regularly threatened by natural disasters such as cyclones. However, the Spanish did not initially show much interest in establishing tropical agriculture, so the number of plantations on the large Caribbean islands increased only slowly during the sixteenth century.

The beginnings of this production system and the Caribbean sugar revolution took place in the Lesser Antilles, which were taken over by the British, French, Dutch, and later also by the Swedes and Danes. Barbados became the first sugar colony in the Americas in the mid-seventeenth century, after the arrival of the English, and only lost this position in the early eighteenth century due to the lack of opportunities for expansion and the increasing depletion of the once-fertile soils (Watts 1992). Jamaica and Saint Domingue, the French colony in the western part of the island of Hispaniola, took over the lead in sugar production, replicating the social, economic, and demographic patterns that had previously been tried out on the smaller islands. At their peak, both islands were inhabited by almost 90 percent enslaved people, which gave rise to an extremely segmented social structure, an almost closed system with no mobility. The French colony, in particular, became world leader in the production of several colonial staple goods in the last third of the century, not just sugar. The destruction of the plantations in Saint Domingue as a result of the Revolution of the Enslaved in 1791 and the flight or expulsion of the landowning class created a vacuum that Cuban landowners were especially eager to fill.

From that moment on, the Cuban plantations became the most developed sugar production centers in the Caribbean and spread throughout the island's territory. Although the first sugar plantations were initially located within a radius of about 150 kilometers around Havana, from the beginning of the nineteenth century they advanced to the regions of Matanzas, Cárdenas, and Trinidad, and continued eastward across the largest island of the Antilles. From 1830 onwards, sugar cane displaced coffee crops, and Cuba's economy, society, demography, and landscape began to be defined by the famous *contrapunteo* (mutual influence between different cultures) that anthropologist Fernando Ortiz defined in 1940 to introduce his theory of transculturation. For some decades, Cuba became the world market leader in sugar production, surpassing Saint Domingue, Jamaica, and also northeastern Brazil (Moreno Friginals 1976). This development was favored by several factors: (1) the crisis of the Caribbean competitors; (2) the liberalization of Spanish colonial policy that facilitated access to land, foreign trade markets, the acquisition of enslaved labor, and control of forests; and (3) the industrial revolution in sugar production that began with the introduction of the steam engine in 1820 and the railroad in 1835.

Compared to the pre-industrial forms of sugar production in the seventeenth and eighteenth centuries, which relied heavily on wind, water, and animal power as sources of energy, the irruption of the mechanized Cuban sugar economy also represented a technological leap, as the first step towards a (semi-)industrial use of natural resources. In the mid-nineteenth century, more than 1,500 plantations were in full swing, producing more than 30 percent of the sugar sold worldwide. As pioneers of industrialized agriculture, they were the pride of their owners (Ely 1963).

During this period, landowner Justo Germán Cantero edited a publication that, like no other, gives a visual impression of the technical level these facilities had reached, but also of how they had transformed the physical environment. *Los ingenios. Colección de vistas de los principales ingenios de azúcar de la Isla de Cuba* (The Sugar Estates: Collection of Views of the Main Sugar Estates on the Island of Cuba) (Cantero 1857), with texts by the editor and images by French lithographer Eduardo Laplante, was published between 1855 and 1857, initially in eight separate volumes by subscription, before the printing house of Louis Marquier in Havana published a complete edition in 1857 (García Mora and Santamaría García 2005, Tomich et al. 2021). The book consists of colorful images and brief descriptions of twenty-five of the most splendid and important sugar plantations of the time in western and central Cuba. Laplante also made drawings in black and white of the interior of several central production halls, boiling houses, and the plans of some of these facilities.

Flor de Cuba, founded in 1838 by Pablo de Arrieta, was one of the most important plantations of its time. Covering an area of approximately 1,250 hectares, half of which were cultivated with sugar cane, and employing a workforce of 409 enslaved workers, 170 Chinese “coolies” (term used for low-wage laborers of Chinese descent) and 150 additional laborers (presumably hired during harvest season), Flor de Cuba was the plantation with the highest production of the sugar mills portrayed by Laplante. In the accompanying text, Cantero mentions that some one hundred hectares of the plantation were devoted to the cultivation of root crops, and that two wells ensured an abundant supply of drinking water. Annual production volume was estimated at 9,000–10,000 crates of refined sugar (equal to 2,600–3,000 tons per year) and 1,000–1,200 *bocoyes* or barrels (500–600 tons) of raw sugar, called *mascabado*, which was sold to refineries abroad (Cantero 1857: 242–253).

Like all the sugar mill illustrations in Cantero's book, the Flor de Cuba image is taken from what appears to be a hill overlooking the main entrance to the estate. This elevated perspective allows Laplante to focus on the factory without losing sight of the plantation landscape. The complex of buildings (*batey*) is integrated into the center of a landscape marked by a vast plain, farmland, and trees in the background that may indicate the beginning (or what remains?) of a forest. The most striking building on the left is the boiling house, where sugar cane was processed. Three powerful chimneys, with black smoke rising above the complex, are evidence

of the plant's enormous production capacity. On the right, in the center of the image, stands the impressive barracks (*barracón*), a two-story building with four sides, which not only housed the more than 500 workers held in captivity, but also provided housing for the foreman, overseers, skilled craftsman, and other salaried workers, as well as maintaining an infirmary. Nearby, opposite the *barracón*, is the two-story mansion where the owner Arrieta lived with his family. Other elements of the complex include the kitchen garden where food and vegetables were grown, two pens for farm animals, a distillery where rum was produced, a gasometer that illuminated the premises, and warehouses used to store fuel (bagasse and charcoal) (Hernández Vidal, 2020). As stated by Cantero (1857: 251), the owner of the plantation estimated that 600,000 pounds of charcoal were required for annual production. Around the *batey*, symmetrically-arranged fields can be seen, some cleared, others still covered with sugar cane. Few trees rise above the vast plain and its crops.

Laplante's lithographs are characterized, on the one hand, by their attention to detail; they emanate realism and a great sense of precision. They look like snapshots, "photographs of the immovable" (Colina Echevarría 2019: 112), that capture the world of the sugar plantation at a specific moment in time. They have a documentary function, in that they aim to offer contemporaries a glimpse of the progress made by the Cuban sugar industry. In the words of Gómez (2010), they constitute a "colonial dispositive." On the other hand, they show almost aseptic sites that convey a certain idyllic atmosphere. This refers to the outdoor facilities, but above all to the industrial production centers, the mills, boilers, and purging houses. In the lithographs of the collection enslaved people are hardly visible. This also applies to the panoramic view of Flor de Cuba. Of the more than 500 workers, not even a dozen are distinguishable in the scene. The same is true for the boiling house, also portrayed by Laplante in Cantero's book. The images convey nothing of the horror experienced, for example, by Juan Francisco Manzano, Cuba's only enslaved author in the nineteenth century, when he was threatened with being taken to his owner's estate on the outskirts of Matanzas (Castro, 2015). Here, the focus is to glorify the modern machines that allow landowners to extract a higher percentage of sugar from the plants. The workers remain in the background; they fulfill their tasks in peace and apparent harmony. They do not look exhausted or dirty. As Gómez (2018: 99) states, the images "sterilize reality" by hiding or disguising "the monstrosity of the slave institution."

The most serious environmental impact of the plantations' expansion was the deforestation of the tropical forest. This is illustrated by the famous quote from Bartolomé de las Casas, who said that at the beginning of the Spanish conquest, Cuba had such a dense forest that it was possible to cross the entire island without ever leaving the shade of the trees. Alexander von Humboldt (1856) wrote that when he visited Cuba at the beginning of the nineteenth century, the whole island had been a huge forest composed mainly of palm trees, as well as wild lemon and orange trees. Since then, generations of historians, biologists, and geographers have attempted

to determine the extension of the vegetation at the beginning of the “Columbian Exchange” and the proportional relationship between forests and savannahs. The share of forest is calculated between 60 and 95 percent (Funes 2008: 7–14). However, regardless of the “original” situation, all data from the nineteenth century indicate the onset of massive deforestation. According to official statistics from 1846 and 1862, the natural forest was reduced from about 5.5 million hectares to only 3.35 million (Funes 2008, 131). Other authors assumed an annual loss of forest of 13,500 to 70,000 hectares, mainly due to the production of fuel for industrial plants on sugar plantations, but also to supply the railway that spread across the west of the island from 1837 onwards.

Laplante’s lithographs unintentionally illustrate the metamorphosis of the lush natural environment into an agro-industrial cultural landscape. The economic transformation of the sugar industry led to the ecological transformation of the environment. None of the panoramic images depict virgin territories with natural forests. In the fields of La Flor de Cuba, there are still a few scattered trees that are part of the sugar cane plantation. In the description of the plantation, Cantero only mentions the areas destined for sugar cane cultivation and food supply. There is no evidence of the existence of virgin forest within the 1,250 hectares of the plantation.

The impact of sugarcane expansion on the forests was twofold. On the one hand, mechanization and industrialization allowed the sugar mills to increase production, which required the clearing of more land for the cultivation and harvesting of sugar cane. The railroad also made it possible to access areas that had not yet been incorporated into the economy. On the other hand, for a long time, forests were the most important energy source for the sugar mills. Especially at the beginning of mechanization, firewood and charcoal were used to power the mills, the boiling furnaces, and the equipment responsible for sugar refining. Wood from precious trees such as mahogany and ebony was also used as construction material. Most of the large plantations had their own carpentry shops.

Calculations indicate that (semi-)industrialized sugar estates annually consumed up to one *caballería* (approx. thirteen hectares) of forest to meet their energy needs. This is the reason why the royal decree of August 30, 1815, which granted landowners full and perpetual rights to use the forests on their private estates, was so relevant for the progress of plantations in Cuba. Previously, they had owned their forests, but they were not allowed to freely utilize the trees due to the navy’s needs for shipbuilding.

The impact of this deforestation was, of course, noticed by contemporaries and raised fears that Cuba’s vegetation would suffer the same fate as other sugar islands in the Lesser Antilles, like Barbados or Antigua, for example. Among the critics of rampant deforestation were distinguished Cuban intellectuals of the nineteenth century, such as the Count of Mopox and Jaruco, the Count Pozos Dulces, his brother José Jacinto de Frías y Jacott, the scientist Álvaro Reynoso, or the economist and

botanist Ramón de la Sagra (Funes 2008: 152–159). On the one hand, they pointed to the consequences for soil quality. For centuries, foliage had been the most important source of nutrients for the fields. With the felling of the trees, these nutrients disappeared, and the cultivated areas soon suffered in terms of yield. The life cycle of a plantation was therefore reduced to thirty to forty years. On the other hand, contemporaries were already noticing the immediate climatic effects. In particular, the lack of rainfall became a serious problem.

The beautiful lithographs in the book *Los ingenios*, created to showcase the industrial modernization of Caribbean agriculture as part of a seemingly edenic landscape, can be read in these terms as images that document a new phase of the transformation of rural landscapes across vast areas of Latin America, not only in Cuba, within the framework of the rise of monoculture agroindustry. Deforestation, soil depletion, and climatic alterations are the immediate impacts that characterize this mode of production.

Translated by Luisa Raquel Ellermeier and revised by Omar Sierra Cháves.

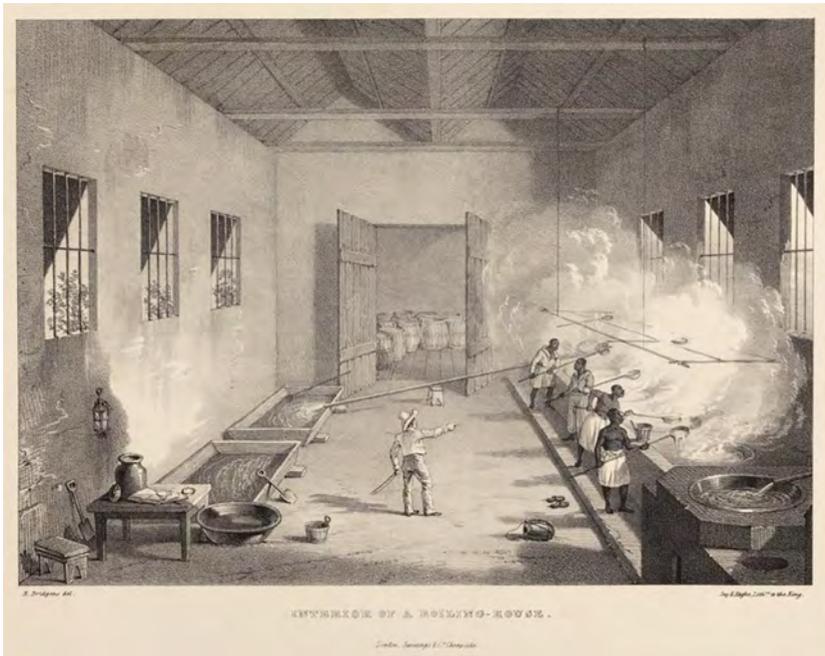
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Interior of a Boiling-House

Juan Arturo Camacho Becerra



Richard Bridgens, “Interior of a Boiling-House,” in *West India Scenery* (1836).

In a large hall, pots and trays necessary for the process of sugar extraction process are arranged. Four Afro-descendant workers carry out the tasks of production in this engraving, “Interior of a Boiling-House”. On the right, copper cauldrons boil vigorously, as evident from the vapors they emit; to the left, rectangular wooden trays hold distilled sugar, which crystallizes and is transferred to the wooden barrels visible in the adjoining room. At the center stands the overseer, pointing at the workers with the index finger of his right hand while holding a machete in his left. The scene is completed by a table with sieves, a tray on the floor, a bucket, and a shovel. On the workers’ side a clay vessel and a pair of sandals can be seen. Owing

to the division of labor on the plantation, these are specialized workers: two wear shirts and trousers, the others only trousers.

At the bottom left of the engraving appears the signature “R. Bridgens,” and in the center the title “Interior of a Boiling-House”. This plate belongs to a series of 27 lithographs published in 1836 under the title *West India Scenery, with Illustrations of Negro Character, the Process of Making Sugar, &c. from Sketches Taken During a Voyage to, and Residence of Seven Years in, the Island of Trinidad* (Bridgens 1836). The series’s author was the sculptor, painter, and engraver Richard Bridgens (1788–1846) who described his his seven-year stay in Trinidad, although he in reality he would live there for twenty years. On the Island of Trinidad, besides managing the plantation inherited by his wife, he held government posts and participated in several public works, including the construction of the government house and the cathedral (Skelly 2011: 52).

In this engraving, Bridgens sought to capture the process of sugarcane production, which had changed little between the seventeenth and nineteenth centuries. The boiling-houses converted cane juice into raw sugar and were directly connected to the plantations. Enslaved laborers often performed the boiling process under extremely harsh conditions. Rectangular brick or stone boxes served as furnaces, with openings at the base to stoke the fire and remove ashes. At the top of each furnace sat up to seven copper cauldrons, each smaller and hotter than the previous one. The cane juice was first poured into the largest cauldron, then progressively transferred into smaller ones, with lime added to remove impurities. The liquid was skimmed and moved along until it reached the final cauldron, the *teache*, where it became syrup. The next step was the cooling trough, where sugar crystals hardened around a sticky molasses core, deposited into wooden trays. This raw sugar was then transferred to barrels and sent to the curing house (Galloway 1989: 85).

Sugar in the Antilles

Colonized since the first voyages of Christopher Columbus, the Caribbean islands played an important role in the political and economic relations of European nations. Over more than three centuries of domination, they were a constant source of conflict between the major powers of the period – primarily Spain, England, and France. Among the larger islands, Cuba and Puerto Rico accounted for much of the production owing to the technological development of their sugar mills. Yet, by the late eighteenth century, French plantations in Martinique and Guadeloupe, as well as British ones, posed strong competition, particularly with significant production in Trinidad.

The history of Trinidad resembles that of other Caribbean islands as they were the target of invasions and disputes among European powers. The Spanish claimed possession in 1592 with the founding of San José de Oruña. In 1783, royal decrees

permitted the entry of French Antilleans and Afro-descendants, on the condition that they be free and Catholic. These new landowners introduced sugarcane cultivation as practiced in Saint-Domingue, sparking Trinidad's rise. This in turn attracted British interest, and in 1797 the island was seized by the British fleet. With the Treaty of Amiens in 1802, Trinidad passed definitively under British rule.

During the first half of the nineteenth century, the so-called West Indies remained under European domination: Martinique and Guadeloupe under France, Trinidad and Tobago under Britain. From the beginning of the century, sugar had become a staple in European diets: "average consumption in Britain rose from four pounds per head in 1700 to eighteen pounds in 1800, to thirty-six pounds in 1850, and to more than one hundred pounds in the twentieth century" (Ponting 2000: 698). It was in this context of booming demand that Bridgens traveled in 1826 from England to Trinidad to manage a sugar plantation, where he remained until his death in 1846.

By the early nineteenth century, sugarcane processing, alongside production on Caribbean plantations, had become a flourishing business, with futures contracts traded on the markets of New York, London, Paris, and Hamburg (Klein and Vinson 2008: 69). At this point, sugarcane cultivation and the enslaved labor trade were widespread across the islands. In Cuba and Trinidad, sugarcane was cultivated on a large scale, leading to severe soil depletion and deforestation, as land was cleared to extend cultivation. Sugarcane requires vast amounts of water and humidity, making clear the Anthropocene dynamic of land-use change driven by market demand.

As sugar production entered the nascent stock exchanges of the period, cane displaced other crops in Trinidad such as cacao and tobacco. Large tracts were devoted to this monoculture, radically altering patterns of land and water use. The expansion of monoculture, combined with deforestation and the reduction of native vegetation, along with the introduction of exotic flora and fauna, led to the disappearance of endemic plants and deep transformations in ecosystem structure and function (Pádua et al. 2024: 48).

Slavery in the Caribbean

Although slavery and the slave trade are tied to the broader history of humanity, it was during the European colonization of the Americas and their islands that the trade was most intensified and legalized, becoming the primary source of labor for resource extraction. Various contributions in this volume on the colonial period include representations of labor conditions, activities, and punishments associated with enslavement.

With some nuances, both the Spanish Empire and other European powers relied on slavery as their main source of labor. Under Isabella of Castile, however, the

Spanish Crown decreed the Laws of Burgos in 1500, prohibiting the enslavement of Indigenous peoples. In line with this, Pope Paul III issued the bull *Sublimus Deus* on June 2, 1537, in the context of evangelization of the “New World.” He affirmed that Indigenous peoples were “truly men” and therefore had “the right to liberty, to dispose of their possessions, and to embrace the faith, which should be preached to them peacefully,” forbidding cruelty. In practice, this was not observed, as shown in the case of enslaved Indigenous labor in the Potosí mines (Barragán and Molina 2026).

A pivotal moment for the African slave trade into Latin America was the Iberian Union of 1580, which facilitated Portuguese dominance of the trade, growing steadily between the sixteenth and nineteenth centuries. By 1780, the plantation regimes of Brazil and the Caribbean defined the enslavement system in the “New World.” In colonies both on the islands and the mainland, populations of African origin were proportionally high. In the British colonies (Barbados, Jamaica, Trinidad, and Tobago), “free people of color represented less than ten percent of the 380,000 enslaved” (Klein and Vinson 2008: 85). The liberation movements in Haiti and Santo Domingo in the early nineteenth century spurred debates on slavery in Western societies, particularly in England, fueling the abolitionist movement that culminated in the prohibition of the slave trade in 1807 and slavery itself in 1833.

On Brazilian and Guianese plantations, it was common to have about one hundred enslaved workers per estate. After being purchased and branded, enslaved people were trained in plantation labor. Field work was the same for men and women, organized into work gangs. Beyond their exhausting labor, they were required to grow their own food, care for themselves, and acquire at least rudimentary Creole. Rarely did enslaved individuals survive more than fifteen years in active labor. Others, called *engagés*, worked more closely with the masters, handling tools or serving in domestic roles (Klein and Vinson 2008: 7). Plantation owners employed managers to oversee cane cultivation, supervise refining, and purchase provisions and enslaved labor. In Trinidad, under British rule, immigration was also encouraged from the United Kingdom and the Eastern Caribbean colonies, with arrivals including English, Scottish, Irish, German, and Italian families, as well as free Afro-descendants known as “Merikins,” who had fought for Britain in the War of 1812 and were granted land in southern Trinidad (Brereton 1981: 94).

The French Revolution, the Haitian rebellion, and the subsequent abolition of slavery there fueled both the expansion of enslaved imports and rising abolitionist sentiment. In England, the slave trade was increasingly denounced. When slavery was abolished in 1833, the resistance of the affected planters was so intense that the Crown conceded to their demands: “Masters received generous cash compensation and the right, from 1834 for six years, to use their slaves as apprentices” (Klein and Vinson 2008: 266). Strikes and unrest among the freed population, however, led to the abolition of the apprenticeship system by 1838. This may explain the contrasts

between Trinidad and its Caribbean neighbors in the proportion of enslaved populations. A general population review in 1838 shows that Trinidad had only 17,439 enslaved individuals, and 80 percent of slaveholders had fewer than ten each. By contrast, Jamaica – with only twice Trinidad’s land area – held some 360,000 enslaved people (Meighoo 2008: 104).

Artist and Enslaver

The emancipation movements in Haiti and Santo Domingo, the ban on the slave trade, and the abolition of slavery in England reshaped the relationship between master and enslaved in Trinidad. These circumstances may explain Bridgens’s sanitized and empathetic, even somewhat indulgent, depictions of plantation life, work, superstitions, and festivities under his management. A highly unusual plantation overseer, Bridgens had already achieved recognition as an accomplished artist before traveling to Trinidad, having studied in Liverpool with the sculptor and cabinetmaker George Bullock. He exhibited his designs in furniture and engravings at the Liverpool Academy and the Royal Academy. He authored *The Antiquities of Sefton Church* (1822), and his designs appeared in *Furniture with Candelabra and Interior Decoration* (1838). Would this artistic formation have distinguished him from other plantation managers? Not necessarily. As noted, exploitation remained characteristic of the British colonies in the Americas, even as legislation toward abolition was already being enacted.

Bridgens’s *West Indian Scenery*, published three years after the abolition of slavery in Britain, sought to depict the formerly enslaved as newly freed (Skelly 2011: 52). His album of engravings offers an empathetic vision of African culture brought to Trinidad, though it also reinforces festive stereotypes of “Negro character,” portraying rituals, dancing, and music rather than the harsh realities of enslavement.

In the Spanish-dominated islands, abolition came later: 1873 in Puerto Rico, 1886 in Cuba. The Trinidadian scenes, therefore, reflect only the post-abolition realities of the British islands. Instead, Cuban plantations had already introduced the steam engine in 1840, while in Trinidad they continued with traditional boiling houses. However, the conditions of exploitation and land use certainly did not differ greatly from those of other sugar cane plantations in the Caribbean. Nonetheless, Bridgens’s “civilizing” vision of slavery in Trinidad offers a revealing contrast with the brutal realities of colonial slavery at its outset. Both experiences, however, can be analyzed as facets of the Anthropocene.

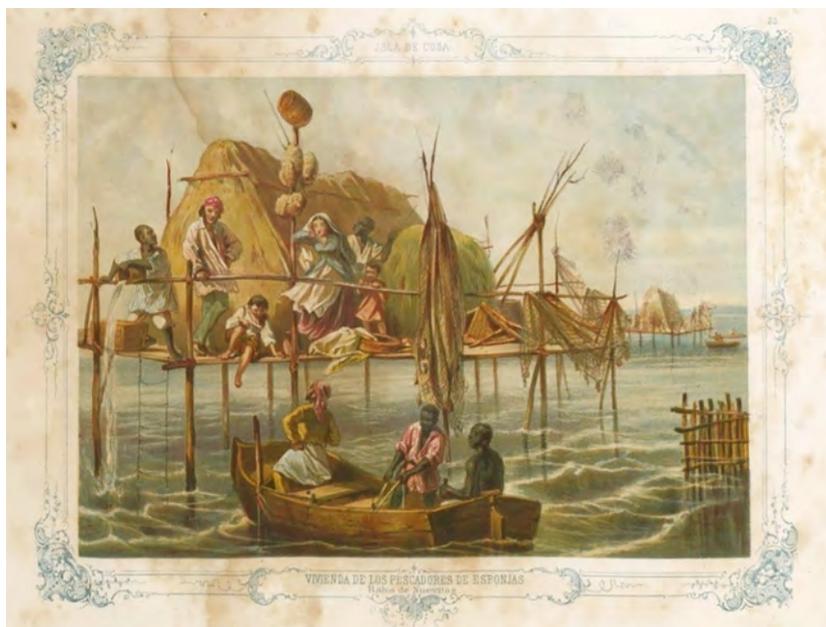
Translated by Omar Sierra Cháves and revised by Luisa Raquel Ellermeier.

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Homes of the Sponge Fishermen at Nuevitas Bay

Olga Rodríguez



Frédéric Mialhe, “Viviendas de los pescadores de esponjas de la bahía de Nuevitas,” in *Álbum pintoresco de la isla de Cuba* (ca. 1855). Source: Oficina del Historiador de la Ciudad de La Habana (<https://repositoriodigital.ohc.cu/s/repositoriodigital/media/33827>).

The image presented in this entry is by the French artist Frédéric Mialhe (Bordeaux, 1810 – Paris, 1881), who was known in Cuban society as a publicist and lithographer. Mialhe arrived in Havana in 1838, having previously studied natural sciences, and was hired by the Lithographic Printing House of the Royal Patriotic Society (*Imprenta Litográfica de la Real Sociedad Patriótica*) to make sketches of the city and its surroundings. His first contact with the American landscape had occurred earlier, when the German Carl Nebel (1805–1855) hired him to lithograph six of the fifty drawings used as illustrations in the book *Viaje pintoresco y arqueológico sobre la parte más intere-*

sante de la República Mexicana. With this prior experience, Mialhe began a tour of excursions to the keys near the island of Cuba, accompanied by the Cuban scientist Felipe Poey.

Mialhe was a professor at Havana's Literary-Artistic College (*Liceo Artístico Literario*) before becoming director of the San Alejandro Academy in 1852: references that indicate the important place he occupied in the circuits of artistic education on the island. It is interesting that biographical studies of this artist always connect him to prominent *criollos* of Cuba's progressive sphere, such as the aforementioned Poey as well as Antonio Bachiller y Morales. His works became part of important collections such as that of the Cuban historian Emilio Roig de Leuscherling and the Maciá Collection.

Mialhe's incorporation of the nascent art of photography in his lithographic works speaks to his interest in the impetus of modern technology. Perhaps this experimentation, together with the precision of his drawing and taste for detail, contributed to his mastery in rendering urban panoramas and architectural changes, while at the same time including the human figures that captured his attention. In this respect we can recognize the influence of Nebel regarding the observation of human beings and their customs in the American lands, beyond scientific studies of natural history. In his prolific activity as a lithographer, recognized in the artistic sphere of nineteenth-century Cuba, the integration of human beings, customs, and context is a constant feature.

In 1838 Mialhe made twenty-five lithographic plates for the book *La Isla de Cuba Pintoresca*; ten years later, he published the series of engravings *Viaje pintoresco alrededor de la isla de Cuba*. By the time he returned to France, the demand for his lithographs was intense, and the commercial firm B. May & Co. released copies made in Germany, which led to a lawsuit. These would be the most widely distributed versions of his lithographs, one of which is the image showcased in this article.

Having introduced the author of the image under discussion, we now turn to the material framework and context of its publication. The *Album pintoresco de la isla de Cuba*, published between 1853 and 1855, includes "Viviendas de los pescadores de esponjas de la bahía de Nuevitas" (Homes of the Sponge Fishermen at Nuevitas Bay), an image that documents a strong alternative export industry on the island, considering the intense demand for sponges worldwide. Specialists in the field consider Cuban sponges to be "among the best in the world in terms of durability, shape and texture" (Historia de Cuba 2016), standing out in the Antillean region along with those from the Bahamas, with both countries together representing 58 percent of world production (Caribex 2000). In addition, "these organisms exhibit a low-cost feeding strategy as active filter feeders and their pumping activity plays an important role in water purification" (Blanco 2007: 5).

After the struggles for independence, most of the countries of the American continent had moved from being colonies to republics. Cuba, however, during the years in which Mialhe produced these images, was still a colonial reduction that Spain defended and treasured: hence the gap within the logic of the historical development of continental America, which explains why this image is still located in the colonial timeframe of the island.

The lithograph is representative of the labor carried out by “artist-travelers” in many countries of continental and insular America during the second half of the nineteenth century, reflecting a growing international interest in these territories after centuries of jealous vigilance by the Spanish crown. The initial impulse came from the scientific desire to possess greater knowledge about that *other* world, as in the case of Baron Humboldt and other scholars. Other artists were sent by publications to satisfy the growing European curiosity about the Western Hemisphere, while others took advantage of the commercial success guaranteed by genre painting with themes related to the American landscape or its popular characters. In any case, spurred by multiple motives, America was once again visited by observers intent on participating in a “civilizing” project emanating from the European point of view and focused on the possibilities of investment, territorial exploitation and possession, under new, modern strategies of control. Mexican art historian Eloísa Uribe’s analysis is interesting in this regard: “In the scenes painted by European travelers, there was a clear emphasis on the riches of the country, seen as exotic and exuberant [...] emphasis was placed on the representation of properties that were located within the depicted landscape” (1987: 104).

Many European creators – painters, engravers, and writers – sought out “American exoticism,” “picturesque” elements or exuberant vegetation as a means of representing the different, the strange, even the overwhelming, thus contributing to consolidate *otherness* as an alternative representation. Those artists who also worked in engraving were assiduously inserted into the circuits of newspapers and magazines that proliferated in this period. Albums of prints, which had great acceptance in Europe, emerged as a vehicle to disseminate an imaginary about the customs, territories, and characters that constituted those *other* American realities.

The image in question documents the sponge fishing process as carried out by two men from a small boat; another man seems to direct his attention to the human group composed of a man and a woman who, together with two children, seem to make up a family. Black men on either side of this white family are also shown engaged in fishing. On the higher level, where the family is located, there is a dwelling made of vegetal elements braided on a scaffolding of fibers and wood. The characters, as well as the ephemeral architecture and the environment, offer an image of “difference” that is highly articulated from curiosity and the desire to document these customs. This is revealed in the distribution of social roles in the scene: those who carry out the task of fishing from the boat are Black men, while the family on

top is made up of white people. The racialization of social relations is captured by Mialhe in this image, which shows the hierarchy between Black and white people and mulattos in the insular society of the nineteenth century, a constant in other works of the French painter as well.

The sponge trade was a profitable business, but their extraction was very laborious, considering their different sizes. At times it was necessary to “free dive” to pull the sponges up from the seabed and put them on the boats. Afterwards, mother ships would take the harvested product to a central port where it would be examined and purchased by traders (Historia de Cuba 2016). Mialhe guides the viewer to look at the four Black men enacting their role as workers, subordinate to the power and control of the white people who are purposely placed in the upper zone of the composition. It is worth mentioning that France, Mialhe’s country of origin, was one of the first colonial powers to condemn slavery and propose its abolition in the Americas.

In the sources consulted on the fishing and export of sponges in Cuba, I found that among the factors that have negatively impacted this industry are the appearance of synthetic substitutes for sponges and the fishing of other, more economically profitable animal varieties, together with the disappearance of the species in some areas. Moreover, scientific studies regarding the environmental factors that affect the distribution and abundance of sponges highlight salinity, temperature, and the influence of sunlight – all of which have become more noticeable in recent years as the the sea becomes more shallow – as well as the occurrence of extreme weather events. In the Caribbean, commercial species are very sensitive to these changes (Blanco 2007: 9). When the atmospheric pressure varies with hurricanes or cyclones, wind speed and cloudiness increase; this influences the waters, transforming in a single day the distribution and abundance of these organisms, generating changes in their behavioral patterns, diseases, and, in the long term, even evolutionary changes in their ecosystems.

Mialhe’s visual observation made in the second half of the nineteenth century in the Nuevitas Bay is quite valuable, as it records one of the fundamental economic lines for consumption in Europe from its origin in Cuba. The main Cuban sponge-producing regions are, to this day, located in the southwestern (Gulf of Barabanó) and north-central (Sabana-Camagüey Archipelago) platforms. The scene captured by Mialhe belongs to the latter of these areas. In those years, the sponge industry was still dominated by Mediterranean countries, and it was not until the beginning of the twentieth century that it spread to the Caribbean and Florida. The image thus reveals in an anticipated way the attention of the European artist toward the procedure of catching the sponge, showing the crimping implements from a small boat – “In Cuba, there has been practically no evolution in the form of fishing over the years. The shallow depth of sponge bottoms has determined that the fishing system has followed the traditional method” (Blanco 2007: 12) – alongside the type of housing of the white merchants who were dedicated to this activity, in which Black men

carry the responsibility of the hard work, reproducing a racialized and unequal class model marked by colonial power.

Exploratory scientific studies of sponge zones in Cuba show a high degree of turbidity in the waters due to suspended particles; this contamination makes fishing and the survival of fine-pored sponges impossible, leading to a gradual reduction of these species over time as well as the deterioration of environmental quality. In the area where Mialhe observed the sponge fishermen, the high rate of exploitation to which sponges have been subjected due to their commercial value on the international market is currently recognized as one of the factors working against the preservation of these species (Blanco 2007: 48–51). Hence the relevance of recovering images such as these in the context of current concerns and scholarship on the Anthropocene, where the exploitation of American territories and bodies by the powers interested in their commercialization serves as a component and as evidence of contemporary environmental crises.

Translated by Eric Rummelhoff and revised by Elissa Rashkin.

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The Ceiba of Ponce

Lizabeth Paravisini-Gebert



Francisco Oller y Cestero, *La ceiba de Ponce* (1887–1888). Source: Museo de Arte de Ponce, Puerto Rico.

In October 2021, the leading biologist for the municipality of Ponce, Puerto Rico, announced that the city’s iconic pre-Columbian ceiba tree had died: “There are no new branches visible, there is no new greenery, its bark is detaching, it also has a fairly large cavity because water has leaked into it. These are conditions that make it unsalvageable” (Vázquez 2021). The ghostly shell of the emblematic centuries-old tree still stands on the banks of the Portugués River, at the reputed site of the first encounter, in 1508, between Borikén’s principal Taíno cacique, Agüeybaná I, and explorer Juan Ponce de León (c. 1474–1521), Puerto Rico’s first Spanish governor. Said to have been already a mature tree by the time Agüeybaná I and Ponce de León forged a short-lived *détente*, excavations in the surrounding area have uncovered Indigenous

pottery, carved shells, and petroglyphs long preceding the presence of Europeans in the area.

The emblematic ceiba is the subject of Francisco Oller's (1833–1917) best-known landscape painting, *La ceiba de Ponce* (1887–1888). The work shows the centenary tree in its majestic prime, its proportions measured against both the cottages over which it spreads its branches and the small figures of the washerwomen on the banks of the river. Towering over the surrounding trees, its reflection shimmers in the river as an all-encompassing presence. The work, executed *en plein air*, was influenced by the principles of impressionist landscape painting that Oller had embraced through his deep friendship with fellow Caribbean painter Camille Pissarro (1830–1903). Edward Sullivan has argued that they shared a commitment to “impart specific information to viewers about [the spaces represented] and help us understand their significance within a framework of history and geographic exactitude” (2014: 68). In *La ceiba de Ponce*, Oller is both “commemorating the sacredness of the locale where it stands and his reverence for his native island” (70). In doing so, he pays homage to the ceiba; a ubiquitous Mesoamerican tree, a cultural and religious icon since pre-Columbian times, when Indigenous communities practiced dendrolatry or tree worship.

The *Ceiba pentandra*, sacred tree of the Maya people of present-day southern Mexico and Central America, is a species highly valued across its broad tropical range. It is central to African-derived practices in Santería, and is, moreover, the *mapou* or tree-that-must-never-be-cut of Haitian Vodou. Its various subspecies are known by a variety of names – ceiba, *mapou*, kapok, *lupuna*, or silk cotton tree, among others, reflecting its range and status as “charismatic megafloora.” The ceiba is one of the largest trees in the world, growing to between sixty and seventy meters in height at a very fast rate. It is easily recognizable by its trunk, which can grow to three meters in diameter and is supported by large and vigorous buttressed roots. In the Caribbean, the tree is linked to the pre-colonial Taíno (Arawak) population, in whose Indigenous mythology the centre of the terrestrial disc was a tree, the ceiba, axis that united the earth, the subterranean world of the dead and the ancestors, and the sky. Its religious role explains the richness of the carved artifacts left by worshippers as offerings and later found by archaeologists near their roots. Respected and revered custodian of the forest, the ceiba was deemed indestructible before the force of the hurricanes that often hit the Caribbean, and a powerful defense against lightning (Pané 1999; Stevens-Arroyo 2006; Rouse 1992).

In *La ceiba de Ponce*, Oller depicts a famous specimen of the *Ceiba pentandra*, the subject of numerous legends, narratives, poems, songs, and paintings. It is one of the many ceibas upon which people have conferred special status as “heritage trees” for either their size, longevity (especially among the still remaining pre-Columbian specimens), association with spirits or miraculous events, resilience to natural disasters, as sites of devotion, ceremony, or pilgrimage. Veerle Poupeye has called these

heritage specimens the “gigantic silent witnesses to centuries of history” (2013). As such, Oller’s painting is seen as embodying the iconicity of its subject.

In the wake of the landfall of two destructive and unprecedented category-5 hurricanes in Puerto Rico and the Virgin Islands in September 2017, storms Irma and María, the ceiba reaffirmed its position as regional symbol of resilience in the popular imagination. The reaction of the Puerto Rican people to the impact of the hurricanes centred on the condition of two majestic pre-Columbian ceibas: on the waning signs of life of Ponce’s ceiba and the damage to another iconic ceiba on the island of Vieques, left partially leafless and badly damaged by the storms. The latter’s longevity and historical significance – like that of Ponce’s specimen – made it the focus of the national discourse of survival and resistance in the months following the crisis. Each sprouting of a new branch, each unfolding of new greenery, represented a moment of ecological renewal read by the press as an indication of a return to environmental stability. Its first blossoming after the hurricanes, in February 2019, was greeted as “a symbol of hope that we can continue” (Kaufman 2019).

There are myriad tales of ceibas surviving hurricanes or serving as refuge for endangered communities throughout the region. During the heavy flooding that followed the San Ciriaco hurricane of August 1899 in Ponce, the longest-lived Atlantic hurricane on record, the “great spreading branches” of Oller’s ceiba were credited with saving from drowning the many people who had taken refuge in its branches (Howe 1906: 220). In Martinique, a ceiba beloved by poet and politician Aimé Césaire (1913–2008), which had survived the devastating eruption of the Mont Pelée volcano in 1902, is remarkable as a specimen that having “been burned by the volcano [...] 50 years later re-emerged alive and continues to grow to this day” (Artnet News 2020; Bigar 2013). It remained a source of inspiration to the poet, who believed it “exemplified nature’s ability to absorb catastrophe” (Artnet News 2020; The Menil Collection 2020).

The focus on environmental and cultural renewal surrounding the surviving ceiba in Vieques after hurricanes Maria and Irma in 2017 underscored a growing anxiety about reports that the damage caused by the storms presaged the expected intensification of tropical hurricanes and sea level rise due to global warming. It also reflected the worrying rise in air temperature that indicates the possible mass extinction of numerous species of fauna and flora – the ceiba among them – and that threatens the stability interpreted through the greening of the damaged ceibas in Puerto Rico and throughout the region after recent years of devastating hurricanes. Hence the growing discussions of the possible mobilization of the ceiba as a “charismatic megafloora” to encourage nature conservation projects that help the peoples of the pantropical Americas face climatic changes. The ceiba trees represent potential flagships for conservation of extensive ecosystems of great biodiversity that host a large variety of plant and animal species. Their popularity can contribute to the effort (and the attraction of financial resources) to save their

surrounding ecosystem, which contains numerous less popular but not necessarily less vital species that can provide “a form of buffer against the effects of climate change” (Swamy 2019). Such efforts would tap into what J. K. Wright, writing in 1947, described as the feeling of *geopiety*, “the sense of piety felt by humans in relation to both the natural world and the geographical space” (Griffin 2011: 143). Oller’s *La ceiba de Ponce*, in capturing the monumentality of the ceiba and its embracing of the everydayness of the labour of washerwomen under its benign sheltering, has been read by local critics as emblematic of the Puerto Rican people’s symbolic relationship to a tree that embodies the nation’s relationship to nature and the sacred. The ceiba’s decay and death, moreover, has been attributed to anthropogenic mismanagement, its vulnerability to hurricanes exacerbated by the construction of a park around it and the rerouting of the river that sustained it. These developments led to fungal infections and other diseases that reduced its resistance to climate change – a reminder of the need for rethinking anthropocentric interventions that have led to the vulnerability of the Caribbean ceibas throughout the archipelago.

The iconic position of the Caribbean’s heritage ceibas has been central to the interdictions against arboricide common across the region. These interdictions manifest themselves most clearly in relation to the ceiba in Cuban landscape painting, where fields, either planted with sugar cane or having been deforested in earlier years to allow for sugar plantations or subsistence agriculture, still bear a solitary ceiba framed against a few palm trees. These two species – ceibas and palm trees – are emblematic of rural *cubanía* or Cubanness (see, for example, Esteban Chartrand’s *Atardecer* [1874]). The iconic painterly landscape of nineteenth-century Cuba, especially as represented by the work of Oller’s contemporaries Esteban (1840–1884) and Phillippe Chartrand (1825–1889), incorporated the (often solitary) ceiba as the quintessential tree of the Cuban countryside in a manner reminiscent of Oller’s roughly contemporaneous ceiba painting. Focused on Cuba’s rural landscapes and displaying in their nuanced and hazy light a clear connection to the Hudson River School, Esteban like his brother was a pioneer in focusing on iconic aspects of Cuban nature such as the ceiba as quintessential symbols of national sovereignty. Their work shared with Oller’s work its tonal qualities, softness of form, *plein air* techniques, and loose brushwork characteristic of the Barbizon School, as well as that School’s interest in rendering the sense of movement, dynamic energy, and massive solidity of venerable old trees. It also echoed the impact on the Cuban landscape of both the severe deforestation required by the Cuban sugar industry and the reluctance to cut ceiba trees, whose ecological, financial, and religious benefits offered plenty of reasons for them to be spared when others were felled.

In the light of the death of Oller’s ceiba, his painting has entered a new phase in its symbolic reading, as every obituary marking the passing of the ceiba – “forever a symbol of our city” – mentioned Oller’s painting as its preferred remaining memorial. Its specific site, where a “daughter” of the dead ceiba has been growing

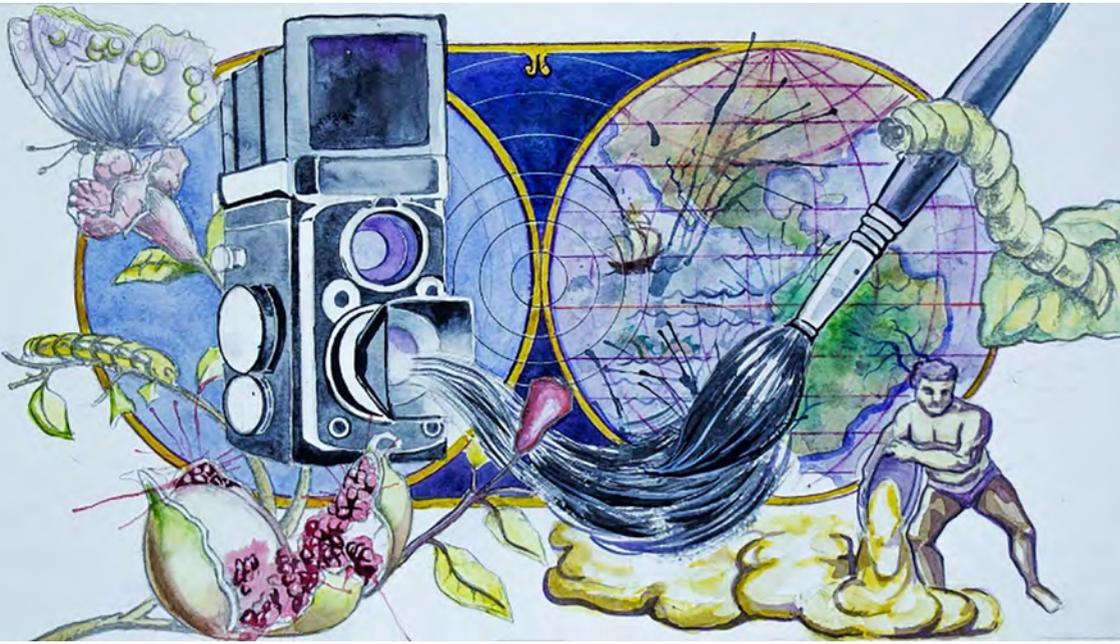
now for over a decade (Vázquez 2021), has become what bell hooks has described as a “site of radical possibility,” where “one is able to redeem and reclaim the past, legacies of pain, suffering, and triumph in ways that transform present realities” (1989: 17). The painting – the tree’s chosen memorial despite the existence of countless other representations, from painting to photography – remains as the version that captures the specificity of this particular specimen as a “homeplace,” a chosen space that through shared community experiences, through *praxis*, has been recognized as a crucial site of resistance and symbol of resilience (hooks 1990: 341; Cañas 2020). As a painting of a site of resistance, Oller’s *Ceiba de Ponce* endures as the preferred public representation, itself a resistance marker long after the tree is gone. Portraits of ceibas in Caribbean art such as Oller’s *La ceiba de Ponce* contribute to the recovery and celebration of the region’s disappearing ceibas as sites of resistance. They can help reinscribe their dynamic symbolism into a potential role as charismatic megaflores, instrumental in rebuilding resilience and enhancing awareness of our threatened environments.

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III. FROM 1950 TO THE PRESENT



Source: Fernando Efrén Sandoval Herrera (2021)

Introduction: Visual Representations of the Anthropocene in Latin America from 1950 to the Present

Elissa Rashkin, Juan Arturo Camacho Becerra, Gerardo Cham and Olaf Kaltmeier

Mountains of rubbish. Seas of poison. Skeletons of abandoned structures. Animal and human corpses along vast highways. Landscapes in flames. The Great Acceleration period in Latin America, with the intensification of extractivist practices and a so-called Green Revolution whose immediate effect was the displacement of traditional agriculture and the conversion of large tracts of forested territories into monoculture fields, emerges in the images in apocalyptic fashion. Despite a rhetoric based, as in previous eras, on notions of progress and well-being through modernization, in the second half of the twentieth century the figure of the nation-state reveals its inadequacy as a regulator in the face of rapid globalization that reiterates many effects of the first Conquest, taking them to the remotest corners of the Amazon jungle, to volcanic mountain ranges, to rivers and oceans. It is not only about expansion, but about massification – one of much greater intensity.

However, there is resistance. Part of the scientific community has played a significant role in identifying problems and seeking solutions, and this effort is reflected in international forums and agreements that seek to reach resolutions that transcend political boundaries. However, the ideological whims of governments, especially those with the greatest weight in global organizations, can drive or hinder this agenda, which by definition is based on cooperation. Meanwhile, current social movements, especially those initiated and led by rural, Afro-descendant, and Indigenous communities, as well as intersectional feminisms, are raising the banner of a new socio-environmental consciousness based on the defense of territory and sovereignty against capitalist exploitation and its violence.

The visual representations of this period document the changes and affect the processes of the Anthropocene in very diverse ways that also change and multiply over time, as will be seen below. Since the mid-twentieth century, growing societies have had a clearly unrelenting appetite for energy, resulting in the intensified exploitation of hydrocarbons and the construction of mega-projects such as dams designed not only to redistribute water but also to generate electricity. These

projects, framed in the discourse of development, require the sacrifice of local communities who must abandon their ancestral lands and, in many cases, adopt new lifestyles in foreign places. Thus, technified power benefits cities and industrial facilities, while poor areas are excluded from the advantages of the electric age. The advance of agribusiness also displaces peasant communities (see Vera et al. “*Rio Playa Ecological Reserve*”), while reducing biodiversity, depleting soils, and polluting bodies of water. While some of the projects built during this period continue operating to this day, others have been abandoned, like archaeological traces of a civilization that has already reached its moment of collapse.

In the 1970s, following the United Nations Conference on the Human Environment in Stockholm (1972), growing ecological awareness – evident in the proliferation of environmental organizations – led to changes in artistic representation strategies. In tune with the countercultural rejection of the aesthetic and ethical values of modernization, practices such as land art, the creation of works that interacted with environments and/or occupied natural materials, and performance art emerged as ways of rethinking the centrality of the human body that had been in place since the Enlightenment. These practices ventured outside of museums and similar specialized settings to build links with other humans and non-humans, and also with the environment.

It should be noted, however, that many of the visual representations that exalt developmentalism, naturalize inequalities, and promote exoticist visions of Latin America were and are still in force. The tourism sector is an exemplary case, given its need to offer the consumer natural attractions such as pristine beaches, mountains suitable for climbing, ruins of mysterious ancient civilizations, exuberant flora and fauna, and easy access to parks designed for that purpose. At the same time, tourism requires a hospitality, transportation and communication infrastructure that further intervenes in the areas of interest. Over time, the aftermath of the Anthropocene – such as hurricanes, fires, sargassum flooding (see Rey, “*Sargassum*”), and other intensified disasters that ruin visitors’ holidays in vulnerable areas – reveals the unsustainability of the conceptual separation between zones of recreation and leisure and zones of exploitation and extraction. Pollution, visualized from the beaches of Baja California (see Polgovsky, “*Dystopias*”) to the Atacama Desert in the Southern Cone (see Cárdenas and Cham, “*Garbage in the Atacama Desert*”), emerges as an undeniably global phenomenon.

The increasingly evident crisis of the Anthropocene today also implies a crisis of representation. The representational techniques of previous epochs, such as pictorial landscape painting or photography understood as truthful evidence of reality, reveal their ideological bases, and their complicity with socioeconomic interests founded on colonialism, inequality, and the concept of nature as raw material for exploitation. At the same time, from the very industrial and military logic that governs the destruction of all territories and their inhabitants, new tools of representa-

tion emerge: photography now takes place at all scales, from satellite records to the microscopic, allowing for new ways of representing socio-environmental processes. Digital technology also allows images to be manipulated in increasingly sophisticated ways. While this has raised concerns about the outright falsehood of what is presented in social media and other settings as “information,” such technology has also been appropriated to question positivist truths, generating interrogations centered on power relations.

As a consequence, the end of confidence in humans as the ultimate creative intelligence – that is, of the solutions to environmental problems proposed by Western modernity – is palpable. Some of the visual representations in this section show the limits of previous projects: a monumental Christ conceived to consecrate the oil boom, for example, becomes the saint of the abandoned and unprotected territory (see Becker, *“The Oil Christ”*); the volcano, once a national symbol of the sublime and eternal in several countries, is gradually reduced to nothing in the face of the demand for its stone for the endless construction of the great megalopolis (see Krieger, *“View of the Yuhualixqui Volcano”*). Mural painting, which in the 1920s to 1950s had displayed the exaltation of science and revolutionary progress at the hands of artists such as Mexican painter Diego Rivera, fades as a discourse in the face of the failure to resolve old problems and the emergence of new ones, and is therefore covered with graffiti as a global expression of the new identities born from social fragmentation (see Rashkin and Ávila, *“Mural with Graffiti at the Miguel Alemán Dam”*).

During this period, other types of artistic expression have been born. From the 1990s onwards emerged what Claire Bishop defines as participatory art: a wide range of practices in which “people constitute the central artistic medium and material” and the boundaries between creative agents and the viewing public are blurred (2016: 12). While the roots of this phenomenon can be found in the early avant-garde (now known as the *historical avant-garde*), what characterizes much of recent participatory art is precisely the activation it seeks of the conceptual continuum between human and environment. T. J. Demos speaks, in this sense, of a “flourishing of contemporary artistic and activist practices that deal with and negotiate ecological conflict in a different way,” whether emphasizing a critique of disaster or creative proposals focused on possible sustainable futures (2020: 8). It should be noted that this is not only about formal practices, but also about an expanded understanding of the artist and artistic endeavor that involves social subjectivities historically excluded from museums, galleries, and other privileged spaces of the traditional art sector.

The exhaustion of the old media that many observers perceive is expressed in works that occupy spaces in a different way: installations that invite interaction, or performances in which what happens during their realization becomes more relevant than any tangible artistic artefact. In this expanded sphere, we can perceive a reinvigoration of other senses beyond the visual is perceived: a topographic map

made of beeswax gives off the smell of honey as it melts as a representation of climate change and the deforestation of the Andes (see Valdés, “*Overflow*”); and a room full of reed fibers that are activated by water redirects the attention of the public towards what is tactile (see Merchant, “*Water Ecosystem*”). Audiovisuals, the source of two of the images selected here (see Polgovsky, “*Dystopias*” and Dichdji, “*Fires in Corrientes*”), add elements of sound and movement, either to reinforce or to subvert what is seen on the screen.

In this period, creators link body and territory in ways that reveal the violence suffered by humans and non-humans and that, hand in hand with social movements, seek to mobilize transformative responses. There is a proliferation of works made with organic material that offer an aesthetic answer to territorial problems: the bovine blood used by Cristina Piffer to denounce the dispossession of native peoples in Argentina’s Desert Campaign, for example (see Lopez Piñero, “*41 Million Hectares*”), or the work on bioremediation done by Lizzet Luna Gamboa with her students in Xochimilco (“*Chinampa Zone*”) in a lake area that is polluted due to its engulfment by Mexico City, but which is also a repository of ancestral agroecological knowledge. We also find artists who use their own bodies to generate meanings around the territory (see Polgovsky, “*Dystopias*”), as well as gazes in which the distance implied by technology is transcended in the construction of new corporealities, such as the image of the shaman that Indigenous artist Denilson Baniwa recreates from fragments of satellite photography showing deforestation (see Pinheiro Dias, “*Natureza Morta 1*”), as a powerful denunciation of the Amazonian territory’s decimation. The same artist, in a more pop-like vein, reworks an image from the film *Mad Max* from an Indigenous protest perspective, questioning prevailing ideas about the “apocalypse” and suggesting, once again, other possibilities for survival (see Fabiano and Vieira, “*Oh, I see, real civilized*”).

In another vein, we notice the persistence of photojournalism as perhaps the documentary visual practice par excellence of the twentieth century, while several boundaries are blurred: between description and participation, for example, and between the creation of “mere” records and that of artistic works. Claudia Andujar’s analog photography in the Yanomami Amazon area, for example, is carefully crafted to incorporate multiple symbolic registers, which enhances its effectiveness as denunciation (see Lopez Piñero, “*Illegal Dredges in the Yanomami Area*”). In Sebastián Toba’s documentary work in the province of Corrientes, Argentina, during the fires of 2022, emphasis is given to the tonalities and other aesthetic qualities, such as the calf’s gaze that increases the affective charge of the disaster (see Dichdji, “*Fires in Corrientes*”).

The possibilities of connection between humans and other animals, such as the calf in Toba’s photogram, constitute an aspect of contemporary art related to the feminist critique of the patriarchal order in all its dimensions, as Mireia Ferrer Álvarez explains: “Anthropocentrism was linked to the culture of exploitation and

systemic domination of men over the other, as a ‘nature-domination’ approach” (2019: 136). Ecofeminism, on the one hand, and posthumanism, on the other, question “the relations of dualistic binarism that had characterized modern Western thought: man/woman, culture/nature, human/animal or human/machine” (136). Emily Wakild analyzes a scientific diagram on the genealogy of Andean camelids, adding an important temporal dimension by stressing that there is not, in the animal world, a unidirectional progression from “wild” to “domestic”, but rather multiple possibilities of exchange and reproduction (“*Phylogeny of Domesticated Camelids*”). This implies a flexible rather than fatalistic concept of the Anthropocene, while also revealing the dependence of cultural identities on their variable relationships with other species. The same thing emerges, from a very different aesthetic, in Kuai Shen’s hyperreal photography, which proposes a decolonization of human imaginaries around, in this case, ants (see Troya, “*Tamya añanku [Rain Ants]*”). The aforementioned projects attempt to recover complex local knowledge through image technology: a kind of necessary translation into the multiverses of globalization.

Returning to the subject of fires, the NASA map analyzed by Fred Stokes, based on satellite data, is shocking at first glance, with its terrifying red dots apparently consuming the entire continent of South America (“*NASA World Fire Map*”). However, the author reminds us that such images also contain the biases of those who construct them, much like the cartography of previous centuries, despite their greater degree of sophistication. Indeed, much of the visual representation of the Anthropocene in our times, as Bénédicte Ramade (2018) points out, has privileged the aerial view, which, while purporting to show the planetary scale of the ecological crisis, also serves to generalize it and conceal specific responsibilities. Iconic images that also permeate the imaginaries of the everyday world are those taken by satellite of hurricanes fueled by the climate crisis (see Santana and Lugo, “*GOES16 Satellite Colorized-Infrared Image of Hurricane Maria over Puerto Rico*”). In contrast, works such as Baniwa’s recomposition of satellite photos of the Amazon rainforest’s destruction reject the pretense of scientific objectivity and materialize specific notions about inequality and exploitation.

Activist images, from many places of enunciation and through diverse techniques, invite their audiences to be witnesses and to take part in the denunciation, reconstruction and overcoming of common-sense misunderstandings. This is partially presented as a matter of form, but we also find, in this respect, the visual documentation of community projects. The photo of Remedios Hernandez in his boat on the Rio Playa in Tabasco, Mexico (Vera et al. “*Rio Playa Ecological Reserve*”), shows a wetland restored by the local citizenry as a community response to useless national discourses and development projects that have long been implemented ways that foster inequality and ecological destruction. The landscape’s history is not explicit in the image, but rather requires textual narration to expose the different

spatio-temporal layers; at the same time, the subject's gaze and the rich aquatic, plant and animal setting point to a process of transformation.

In a somewhat similar, though more abstract way, Emilio Chapela's drawing *Tequendama Falls* incorporates a narrative of water and its contamination in a piece that first seems to be woven: a carpet that narrates the trajectory of the river in its interaction with human history (Blackmore, "*Tequendama Falls*"). On the other hand, the photographic exercise on bioremediation that a group of students works on in collaboration with scientists, artists and Xochimilco *chinamperos* (see Luna Gamboa, "*Chinampa Zone*") generates artistic results and also an ecological awareness focused on local specificities. These are crossovers between the aesthetic and the political that reorder preconceived ideas about art and reveal creative ways of approaching the environment, emphasizing rather than hiding the agency of humans in their surroundings.

It should be noted that one of the characteristics of this period is, precisely, the proliferation of images. During the second half of the twentieth century, photography became a common practice for members of those social sectors who could afford more than the bare essentials. Later in the century, single-use cameras, video cameras, Polaroids and other devices accompanied family trips and tourism, becoming part of the daily life of many people, who in turn were exposed to the constant growth of visual and audiovisual media: more photos in the press, more channels on television, the possibility of watching movies at home, advertising in all its forms. In the twenty-first century, the digital world has multiplied all these experiences.

Today, the limits of what can be photographed disappear with the advent of artificial intelligence (AI), which increasingly encourages the construction of imaginaries as an expansion of reality. Such expansion is not innocent. Although AI would seem to lack materiality – the generation of codes replacing the physical object –, it also consumes large amounts of energy, in addition to its dependence on mineral elements and other resources for its fabrication. Like fast fashion, which leads to unprecedented levels of garbage (Cárdenas and Cham, "*Garbage in the Atacama Desert*"), or the electronic waste referred to in the performance *Dystopias*, the overproduction of images is itself a hallmark of the Anthropocene. The representations examined in this section attest to this situation and, at the same time, offer both critical and hopeful perspectives.

Translated by Luisa Raquel Ellermeier and revised by Olaf Kaltmeier.

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Visual Representations in the Southern Cone from 1950 to the Present

NASA Global Fire Map

Freg J. Stokes



Section of the NASA FIRMS Global Fire Map, from September 3, 2024. Source: <https://firms.modaps.eosdis.nasa.gov/map/>.

What You See

At first glance, this NASA (National Aeronautics and Space Administration) satellite map of fires in South America, based on data from September 3, 2024, communicates a fairly simple and horrifying idea: the continent is burning, the Anthropocene is here, all that is green will soon be ash. Our eye is drawn to the horseshoe of red pixels encroaching on the dark green of the Amazon rainforest in the upper part of the continent, with the messy blobs of scarlet to the south forming a layer of glowing detritus beneath this central drama. The region that forms the focus of this article, the Atlantic rainforest of coastal Brazil, eastern Paraguay and northeast Argentina, is barely discernible, a slither of green running along the ocean edge, buried beneath a mass of red. The unique feeling of veracity that comes with a satellite map makes us feel as if we are both present and distant, looking down with an omniscient (yet impotent) God's-eye view, mute witnesses to this inferno.

All of this masks the various acts of invention and abstraction that take place in the creation of a map based on satellite data. This is a snapshot of one part of the global fire map on the NASA FIRMS (Fire Information for Resource Management) webpage. It uses a background layer called Blue Marble, named after the famous photograph of the Earth taken from aboard Apollo 17 in 1972. This portrait of the planet gained iconic status, taken up by the emerging environmental movement to symbolise Earth's unique position as a sanctuary for life (Poole, Pepin, and Gruner 2023). Unlike the other background layer options on the FIRMS map, which depict topography, streets and rivers in deliberately artificial-looking matte colours, the Blue Marble layer uses a series of satellite photos, stitched together seamlessly to show us the emerald forests, beige desserts and white glaciers and salt flats of South America as they would be seen from space.

This is where the unspoken decisions begin. The FIRMS map of the world is shown as a flat rectangle, not a sphere. Through the act of showing a sphere on a flat surface, any map projection inevitably distorts the shape or the area of the earth's continents, with the worst stretching most often occurring closer to the poles. The most (in)famous example of this is the Mercator projection, invented in 1569 to assist European navigators during the colonial period, and still used today by Google maps. In this projection, North America and Europe appear larger than they actually are relative to tropical South America, Africa and Asia, an optical alteration with fairly obvious political consequences (Monmonier 2004).

NASA's FIRMS map uses the equirectangular projection, which does not exaggerate the size of the higher latitudes to the same dire level as Mercator, but still causes significant distortion. In the case of South America, this primarily affects the lower part of the Southern Cone, the area of the continent that sits closest to the south pole. Viewed from space, Patagonia tapers more rapidly to a dainty point, but in an equirectangular projection, the region fattens out horizontally like a swollen

ankle. The effect of this in the FIRMS map is subtle but significant: the size of the southernmost portion of the Southern Cone, where there are relatively few fires, is exaggerated. The large area of the Southern Cone that is burning intensively, in a swathe from northern Argentina through Paraguay to southern Brazil, gets somewhat lost between the calm expanse of Patagonia and the world-famous frontier conflicts in the Amazon.

It should be noted too that in the Blue Marble layer, only the land area is depicted using satellite imagery: the oceans are shown in relief, emphasising depth below sea level. South America's continental shelf appears in a lighter slate blue, while the Peru-Chile oceanic trench off the western coast is painted in deeper, inkier tones. This decision emphasises once again that we are looking at a collage, a Frankenstein image with various components, rather than a simple satellite photo. The presence of country borders as subtle grey lines, which appear in a default layer on the FIRMS map, allows us to distinguish the fires in one nation-state from another. But by the mere fact of being etched onto a satellite image, these lines resemble natural features of the landscape, rather than the outcomes of colonization and subsequent regional conflicts. If you look very closely (and you know what you're looking for), you will also notice that the outlines of the twenty-six Brazilian states (and the Federal District) appear on the map in a darker grey. None of the Spanish-speaking republics, let alone the two statelets and one half-forgotten French colony in the Guianas, have their internal provinces depicted. This imbalance is indicative of Brazil's status as the continent's largest and most powerful country.

In a deliberate and effective aesthetic decision, the fire on the map is represented by glaringly artificial red dots, pulsing against the muted greens of the satellite photo like an acne outbreak or a computer screen glitch. This fire data has gone through a double curation: first by NASA, and then by me as the author of this piece. The NASA website shows fire patterns over a series of days, but I could only select one day to show in this image: the third of September, 2024. The fire patterns from the other days of that month vary considerably: from the September 12 to 16, a rain front moving up from Argentina to São Paulo extinguished most of the red dots across the Southern Cone, before they flared up again a few days later. Viewing a map from September 15 in isolation might give the impression that southern Brazil was almost unaffected by these fires. These maps are best seen as snapshots in time, a stop-motion animation showing a dynamic process, and I invite the reader to go to the NASA website and look at them as a series.

Due to the unconscious visual self-deception that comes when we imagine gravity at work in a flat image, the red embers scattered across the Southern Cone almost look as if they are drifting downwards from the fires in the Amazon. In one sense, this visual trick correlates by chance with a certain ecological truth: usually, "flying rivers" of water vapour transport large quantities of moisture from the Amazon to the Atlantic rainforest to the south, nourishing the latter forest (Marull 2012).

In September, however, with both biomes ablaze, clouds of smoke interrupted the flying rivers of mist, flowing down from the Amazon to Brazil's southeastern cities to shroud them in ash.

But what if we defied cartographical sensibilities and flipped the map upside down? Orienting an image of the earth with north at the top, after all, is a western convention: the Blue Marble photograph, for example, was originally taken with Antarctica at the top, then flipped around to "correct" it afterwards (Reinert 2011). Take a good look at the "upside down" FIRMS map: positioned with Patagonia pointing upwards to the South Pole, it now looks like Uruguayan artist Joaquín Torres-García's famous drawing of South America, *América invertida* (Torres-García 1943). Take another step, and imagine Patagonia slightly smaller, at its actual size. Seen like this, the stretch of fire across southern Brazil, Paraguay and northern Argentina becomes the focus of the image. The imagined gravitational drift of red embers now flows down in the opposite direction, from the Southern Cone towards the Amazon, echoing unseen social processes: the flow of capital and populations from the Atlantic to the Amazon rainforests. It is to this hidden history that we now turn.

What You Don't See

The sense of despair that we might feel looking at the NASA FIRMS fire map arises in part from the sheer chaos of the image: masses of red appear to be spraying out in all directions, consuming most of the continent. A simple story could be told here: one big fire is burning across South America. The question of *who* exactly is responsible can appear almost irrelevant if we let ourselves become overwhelmed by the glowing horror of the image. If we left the analysis here, the map would fit in neatly with the most simplistic (and oft-critiqued) conceptions of the Anthropocene, whereby all humans are accorded equal responsibility for burning the planet, and the unfolding disaster is presented as a mess so monolithic that it escapes comprehension (Bon-neuil and Fressoz 2017; Moore 2016).

But there are patterns at work here, ones that can only be understood by turning to other maps and documents that depict the history left out of this image. The most important physical feature that we do not see in this map is the Atlantic rainforest in its precolonial dimensions. In 1500, before European colonization, the Atlantic rainforest covered over 1.3 million square kilometres, but centuries of deforestation have almost erased the biome. The majority of the forest was cleared before satellite mapping took off in the second half of the twentieth century (Pádua 2013: 37). On the Portuguese (and then Brazilian) side of the forest, sugar and coffee plantations, along with gold mining and cattle ranching, all using both enslaved and migrant labour, spearheaded successive waves of destruction (Dean 1995; Marquese and Marques 2020).

The wealth and power of southern Brazil, relative to the rest of the country, was built on the destruction of the Atlantic rainforest and the murder and enslavement of its Indigenous inhabitants, along with workers transported from Africa. In the 1600s, Indigenous workers brought to São Paulo in the glorified slave raids known as *bandeiras* were then put to work opening the interior of the continent to Portuguese colonization. The fire patterns in the FIRMS maps follow the Paulista trails into Minas Gerais, Rio Grande do Sul and Mato Grosso, forged by Indigenous men who searched for gold and Indigenous women who fed the colonists, planting maize and manioc seeds along these pathways (Monteiro 1994).

A new act of this drama has played out since 1950, with southern Brazil serving as the laboratory for agricultural experiments that have then been exported into neighbouring regions. These experiments were financed by flows of capital from outside South America that we also can't see in the FIRMS map. U.S. business leaders such as Nelson Rockefeller funded the early development of the modern Brazilian agricultural industry, with the World Bank and the International Monetary Fund offering additional support (Welch 2014; Barbosa 1993). The soy frontier that has now invaded the Amazon began to the south, in an arc stretching from Rio Grande do Sul to São Paulo, with U.S. food corporations such as Cargill playing a key role in the development of the region's agricultural infrastructure (Rocha, Nering, and Silva 2022). From the 1970s, soy plantations consumed much of the remaining stands of the Atlantic rainforest in southern Brazil, before Brazilian soy farmers crossed the border and flattened Paraguay's portion of the forest, with the support of the dictatorial governments in both countries (Souchaud 2007).

In the Southern Cone, the most intense bursts of fire in the FIRMS map are in exactly these regions, as well as along the edge of the Argentinean soy frontier in the Chaco dry forests and the pine plantation frontier in Misiones province. The lines of fire seen entering the Amazon follow the BR-364 and BR-163, the highways that migrants from southern Brazil took as they invaded the forest under the auspices of the military government (Frohn, Dale, and Jimenez: 5, 24). As I witnessed in May 2024, a large contingent of the colonists in Rondônia in the Brazilian Amazon are Gauchos from the Southern Cone, drinking yerba mate from cow horns as they use the same techniques that they developed in the Atlantic rainforest to raze its northern neighbour.

Seen in this light, these fires are not a general disaster caused by general human rapaciousness, but by specific sectors of society, supported by specific flows of technology and capital. Many of the remaining patches of dark green that you see in both the southern Amazon and the Atlantic rainforest are territories occupied by Indigenous, Quilombo and other traditional forest communities, fighting desperately to hold back the conflagration (RAISG 2020). The cattle ranchers and soy farmers on the other side of this frontier are deliberately lighting fires to clear these territories and lay claim to them. In Brazil, this is part of a strategy by rural agribusiness

forces to challenge the renewed environmental regulations that the Lula government has been trying to implement since 2023, after the impunity of the Bolsonaro years (2019–2022) (Girardi 2024).

This pattern can be seen quite clearly when maps of the 2018 and 2022 Brazilian federal election results, shown at the municipal level, are put next to the FIRMS fire map. In southern Brazil, the heaviest concentration of support for Bolsonaro in both elections came from the soy belt of rural Paraná, Santa Catarina and the northern half of Rio Grande do Sul, aligning with an intense fire zone in the FIRMS map. The same configuration can be seen in Rondônia and Mato Grosso on the southern edge of the Amazon, in the areas inhabited by colonists from southernmost Brazil (Nagy and Somain 2024). The Bolsonaro-supporting bloc in southern and central Brazil forms the northern half of a giant swathe of territory that includes Paraguay and northern Argentina, sometimes dubbed “*soylandia*”, which now forms the most powerful base of support for the agribusiness lobby in South America (Rocha, Nering, and Silva 2022).

Viewing the NASA FIRMS fire map alongside other maps and texts reveals patterns that this hybrid satellite image in itself can only hint at. While the fires in the Brazilian Amazon seize our attention first, they are in fact linked to deeper colonization patterns that began in the Atlantic rainforest and the Southern Cone. Armed with this knowledge, we can see that the fires in this map have been caused by human action in multiple ways. Many of the fires have been deliberately lit by rural colonists, supported by capital in both southern Brazil and overseas. They are doing so to gain more land to produce soy, beef and other commodities for international markets. We could call this the Anthropocene, the Soyacene or the Capitalocene – we could also call it plain old capitalism (Da Silva and De Majo 2022; Moore 2016). Increased regional temperatures, driven by carbon emissions that come primarily from countries in the Global North, have exponentially augmented the intensity of the fires. Local communities dependent on these forests, along with state and non-state environmental organizations, are engaged in a battle to stop the mass burning, but the odds are against them. When we look at this image, it is imperative that we remember this history, so that we can move beyond asking *what* is happening here, and make sure the question of *why* it is happening does not get lost in the flames.

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Fires in Corrientes

Ayelén Dichdji



Sebastián Toba, Rincón de Vences, rural area of the municipality of General Paz, province of Corrientes, Argentina. Photogram from *Historias que queman. Ensayos sobre la violencia* (2022).

Socionatural Limits in Crisis

The photographic image selected for this article was created by Sebastián Toba, a prominent Argentinian social communicator and documentary filmmaker known for his audiovisual work that focuses on social, cultural, and environmental issues. His documentaries tend to address social problems and exhibit a remarkable ability to capture human stories with depth and sensitivity. The image is a frame from his video *Historias que queman. Ensayos sobre la violencia* (Stories that Burn: Essays on Violence) (2022), a work that acquired great relevance during the devastating fires in the province of Corrientes, Argentina, that same year. Located in the northeast of the country, Corrientes is bordered to the north and west by the Paraná River; it is part

of the so-called Argentine Mesopotamia and, more broadly, of the region known as Litoral (coastline). The province emerges as a critical scenario in the convergence of multiple factors: its flat extension and its vital wetlands make it an essential ecosystem that contains rich biological diversity and crucial environmental services. Yet this region faces alarming challenges. Climate change, with its rising temperatures and decreasing humidity, has intensified the risks of forest fires, triggering an unprecedented fire emergency. In addition, agribusiness development in the area has expanded the agricultural frontier, increasing pressure on natural ecosystems and further increasing the risk of fires (González and Rodríguez 2018).

The problem of forest fires in this province has deep historical roots that have been shaped by various human activities over time. For example, agricultural practices have led to deforestation and the conversion of forest lands into agricultural lands and pastures, increasing the risk of fires. Urban growth and the expansion of human settlements have also contributed to the increased risk of forest fires in the area. Road construction and urbanization of previously forested areas have fragmented ecosystems, increasing the exposure of communities to fires.

Returning to the centrality of visual storytelling, Toba's framing of his images of Corrientes demonstrates his ability to connect with his subjects, capturing dramatic moments that not only highlight human effort, but also desperation in the face of unprecedented catastrophe. In addition to documenting the impact on humans, he also shows the devastation of the local wildlife. His images include animals trying to escape the fire and the effects on the ecosystem, such as the destruction of critical habitats for endangered species. Similarly, the image considered here brings into play the relationship between fires, climate change and the role of agribusiness in the transformation of ecosystems. Toba's work is a visual testimony of the environmental and humanitarian crisis, emphasizing the resilience and heroism of firefighters and affected communities as well as the importance of sustainable conservation and management of the environment.

Narrative of the Catastrophe

The first impression given by the photograph is that of a vast area of land affected by fire. The landscape is dominated by flames and smoke, with charred vegetation and ash indicating the destruction. The sky, tinged with orange and gray, reflects the magnitude of the disaster. According to Roland Barthes (2006), a photograph is not simply a static representation of reality, but rather a medium through which viewers interpret and attribute meanings that are diverse and symbolic. In this interpretative process, the role of the documentarian is fundamental in the creation of the image, but it is the audience that gives it depth and relevance.

My analysis of this image implies a deep exploration of the narrative elements that make up the photograph, especially in the context of the devastation caused by fire. The photo of a ruined landscape becomes an almost surreal representation of the disaster, capturing the viewer's attention with its striking composition: the burnt ground, the smoke-darkened sky, and the desperate struggle by humans fighting against the flames. In the foreground of this scene, a calf stands out, symbolizing the vulnerability of livestock farming, an essential activity in the region. The calf's presence underlines how human decisions and economic activities can directly influence the fragility of local ecosystems. In this regard, the photo not only documents reality, but also challenges us to reflect on our interactions with the natural world and the consequences of our actions; here, the landscape transformed by fire blurs the boundaries between the social and the natural. While climate change is a determining factor, it is critical to consider the other human-generated factors that have contributed to this transformation. By hinting at these underlying causes, Toba's image provides a penetrating visual representation that invites reflection.

Symbolism and Emotion

The elements present in the image, such as fire and smoke, are readily understood to symbolize environmental devastation and loss of biodiversity. In the context of the Anthropocene, they represent human intervention and its catastrophic consequences for natural ecosystems. At the same time, the charred vegetation shows the direct impact of fires, pointing to how human activities can destabilize natural habitats. For authors such as Lewis and Maslin (2015), such changes are clear evidence of the Anthropocene.

It is worth emphasizing the human influence in cases of this nature, as the recurrence of wildfires is strongly linked to human factors such as deforestation, climate change and poor land management. The combination of high temperatures, low humidity and human practices – such as the burning of forests for cattle ranching in Corrientes – increases the fragility of soils to forest fires, exacerbating environmental risks and biodiversity loss. Deforestation and the burning of agricultural waste have also exacerbated the region's vulnerability to fire.

The image bears visual witness to the Anthropocene, in which human actions have dramatically altered natural systems. Crutzen and Stoermer (2000) note that activities such as fossil fuel burning and deforestation are distinctive markers of this epoch. Moreover, the recent increase in the frequency and intensity of forest fires is a direct consequence of climate change, a central theme in the study of the Anthropocene. According to the Intergovernmental Panel on Climate Change (IPCC), there is a clear connection between climate change and the intensification of extreme events such as forest fires (IPCC 2014a, 2014b).

In this context, the image evokes a sense of loss and suffering, yet it can be seen as a call to resilience and action. In semiotic terms, fire can also symbolize purification and renewal, albeit in a destructive and painful way. This dualism is explored by authors such as Haraway (2015), who discusses the complexities and contradictions of the Anthropocene. In such a sense, moreover, photography captures a narrative of risk (Beck 1992) that resonates with the concept of “urgency” in the Anthropocene. This urgency demands immediate responses, as well as changes in human policies and practices to mitigate impacts. Rockström et al. (2009) suggest that we have crossed several planetary boundaries, making meaningful action imperative.

In this way, each visual element of Toba’s image can be linked to the concept of the Anthropocene. As I have suggested, fire and smoke represent human interference and its consequences on natural patterns. More frequent and more destructive fires are symptoms of a planet in crisis due to human activity. This aligns with the research of Pyne (2012), who argues that fires are a visible manifestation of human impact on the natural environment. Meanwhile, the charred vegetation noted above graphically illustrates the vulnerability of ecosystems to human-induced changes. The loss of vegetation is a clear marker of the Anthropocene: Zalasiewicz and his co-authors (2010) highlight the significant alteration of the biosphere as one of the signs of this geological era. Finally, the destroyed landscape stands in for the transformation of the planet by human action, whether due to climate change, urbanization or deforestation. Thus, through elements such as fire, smoke and charred vegetation, the image not only documents a tragic event, but also serves to communicate a more broadly symbolic message regarding the human impact on Earth. This semiotic analysis highlights the urgent need to address the underlying causes of such disasters and reconsider our relationship with the environment in the Anthropocene era.

These events force us to rethink the dichotomy between those aspects that we consider to be purely human and those that we attribute to nature. In the context of the Anthropocene, where human activity is a dominant force shaping natural systems, this distinction becomes even more blurred. The fire-ravaged landscape presents us with a shocking vision of life’s fragility. When we contemplate the devastating effects of a forest fire, we are confronted with the stark reality of the vulnerability of our existence on this planet. The indiscriminate destruction left in its wake challenges our ingrained perceptions of life and death, reminding us that nature is not immune to our actions.

In this sense, the loss of biodiversity resulting from these fires is particularly alarming. We face the extinction of species, the disruption of delicate ecosystems and the erosion of the very basis of life on earth. This loss of biodiversity not only threatens the survival of individual species, but also compromises the stability of natural systems as a whole, with potentially devastating consequences for the global

ecological balance. This reality forces us to rethink our relationship with nature and the impact of our actions on the environment we inhabit.

Ultimately, the fire-ravaged landscape invokes our interdependence with nature in a period marked by global transformation that is both unpredictable and occurring with extreme rapidity. The Anthropocene is an era that encapsulates the idea that human activity has become a dominant force shaping natural systems on a planetary scale. In this context, fire emerges as a transformative agent that exemplifies the volatility and uncertainty inherent in this era.

In conclusion, our comprehension of the environmental hazards in the Anthropocene era and their consequent transformation of the landscape impels us to take urgent action to mitigate adverse impacts and promote environmental sustainability. It also calls on us to work together to protect and preserve the health and stability of our ecosystems, recognizing that the future of humanity is intrinsically linked to the future of the planet. Ultimately, reflection on the transformation of the landscape by fire leads us to question our practices and values as a society. How can we reconcile our need for development and progress with the preservation of the environment? What steps can we take to mitigate the devastating effects of wildfires and protect vulnerable ecosystems? These are urgent questions that require careful attention and decisive action in the age of the Anthropocene.

Translated by Luisa Raquel Ellermeier and revised by Elissa Rashkin.

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41 Million Hectares

Hernán Lopez Piñeyro



Cristina Piffer, 41 millones de hectáreas (2011). Dehydrated cow's blood, glass, stainless steel.
105 x 70 x 75 cm. Source: <https://cristinapiffer.com.ar/obras/13/>.

It is not an exaggeration to claim that explicit violence is part of the foundations upon which the Argentine nation was built. In fact, in *El matadero* (*The Slaughterhouse*), a short story by Esteban Echeverría published in 1838 and considered, along with *Facundo* (1845) by Domingo Faustino Sarmiento, a foundational work of Argentine narrative (Piglia 1993), there is slaughter, butchery, and rape. Blood gushes out and clots scatter through the air.

Starting from this point and taking violence as a guiding thread, it is possible – though not the objective pursued here – to trace a history of Argentine literature and art that extends to the present day. In the pages that follow, I focus on an image

that, I argue, belongs to that genealogy: *41 millones de hectáreas* (41 Million Hectares), a work created in 2011 by Cristina Piffer.

Piffer, trained as an architect, is well known in Argentina and internationally, having participated in biennials and won prestigious awards. Her work generally addresses the tensions that exist at the frontier between official discourse and the silenced voices of nineteenth-century Argentine history. She combines printing techniques, in which the image is presented as an imprint, with organic materials such as flesh and blood encapsulated in resin or arranged on steel surfaces. These strategies explore the control and systematic violence exerted over bodies, creating work that is both politically and poetically powerful, yet subtle, characterized by its monochrome austerity. In *41 million hectares*, part of the *Neocolonial* series first exhibited in 2011 at the Museum of Latin American Art in Buenos Aires, dehydrated blood becomes a writing surface that registers the dimension of a space: the 41,787,023 hectares stretching from La Pampa in the south-central region of the country down to Tierra del Fuego, the southernmost province, inhabited by the Pampa, Ranquel, Mapuche, and Tehuelche peoples, who were conquered, plundered, and appropriated during the so-called “*Conquista del desierto*” (Conquest of the Desert) and through the laws of “Public Auction,” “Possessory Rights,” and “Military Awards” that completed the military action. The “Conquest of the Desert” was a military campaign carried out by the Argentine Republic between 1879 and 1885, whereby it appropriated large tracts of land held by Indigenous peoples. Following the invasion, these peoples not only lost their lands to a small group of landowners, but were also subjugated, enslaved, and even transferred to museums to be exhibited. It can be argued that this was an act of genocide as well as institutional ethnocide.

The photograph included here shows a section of the work that clearly reveals its materiality. This rectangle of dehydrated blood, measuring less than one square meter, was displayed on a clean stainless steel table approximately seventy centimeters high. A glass panel was installed on the wall, repeating the inscription “41 million hectares.”

Invading to Extract

Blood, in this case from cows, is no small matter in a country that established itself as an agricultural and livestock-producing nation during the last decades of the nineteenth century. Given that numbers possess an irrefutable rhetorical force (Moreno 2018:107), the figure demonstrates a commitment to control, domination, and the disposal of existing resources and space in order to extract and plunder.

Although Piffer’s work refers to a specific historical fact associated with the origin and expansion of the nation-state, that particularity, as argued here, is exceeded. There are threads, perhaps somewhat invisibilized, that connect the extermination

of Indigenous communities and the territorial expansion of nation states with the Anthropocene, and also with extractivism.

As is well known, the term Anthropocene, introduced by the geologist Crutzen and widely problematized in the humanities and social sciences, is not limited merely to geological issues but also relates to issues of extractivism and neo-extractivism (Svampa 2019a). These models of intensive natural resource exploitation have been one of the main drivers of global environmental transformation. In short, extractivism conceptually describes the economic and political dynamics that have accelerated climate change, biodiversity loss, and ecosystem degradation: the defining traits of the Anthropocene. In turn, these phenomena have a close and particular relationship with the history of America (Machado Aráoz 2016). As Svampa points out, “the historical-structural dimension of extractivism is linked to the invention of Europe and the expansion of capital” (Svampa, 2019b: 14) and, in Latin America, is associated with conquest and genocide. The territories of the region have suffered destruction and plundering for centuries. The expansion of commodity frontiers has led, in turn, to enormous contrasts at the local level between extraordinary profitability and extreme poverty, and has created territories that have become sacrifice zones.

The Anthropocene, extractivism, and conquest are machines that feed off each other and, at the same time, set in motion forms of violence that can be thought of, according to Nixon (2011), as “slow violence” in that it occurs gradually and is not immediately visible. This violence primarily affects impoverished communities. From the export of cereals and meat – which began in the nineteenth century and earned Argentina the label of “breadbasket of the world” – to single-crop farming, the expansion of megaprojects based on fossil fuel extraction, and the rapid expansion of the commodity frontier, the 41 million hectares that Piffer points to with blood have been transformed, to use Moore’s (2016) expression, into “cheap nature” put at the service of capital accumulation.

This progression, a common feature in the Global South, allows us to speak of a shift from extractivism to neo-extractivism. The latter is a continuation of the former in that it is also associated with the large-scale dispossession and plundering of natural resources, while at the same time going hand in hand with the establishment of the developmentalist chimera. However, unlike its predecessor, neo-extractivism opens up new political disputes and social resistance that were previously unthinkable, which “question the illusion of development while denouncing the consolidation of a model that tends to be monoproduktive, destroys biodiversity, and leads to land grabbing and the destruction of territories” (Svampa 2019b: 17).

The consequences associated with neo-extractivism can be summarized as follows: acceleration and diversification of projects, gigantism or large scale, increase in the social metabolism of capital, socio-ecological crisis, and greater social resistance. At the same time, there is “intensive occupation of the territory,

through forms linked to monoculture or single-crop production” (Svampa 2019a: 28). In Terán Mantovani’s terms, neo-extractivism entails a “particular mode of accumulation” that, at the regional level, must be analyzed “from the social and territorial sphere encompassing the nation-state, without undermining other scales of territorial analysis” (2016: 257).

The historical milestone to which Piffer’s work refers in these pages can be thought of along these lines. The territory invaded during the *Conquista del desierto* was and continues to be devastated by the implementation of an extractivist model based on the exploitation and export of raw materials with no added value. With a simple gesture – writing a number in blood – the work opens up many questions related to the rights of Indigenous people, extant non-humans, and the environment. But fundamentally, it explores the violence related to the expansion of a nation and the (unsustainable and disastrous) development models promoted by the prevailing economic and political actors.

A Blood Pact in the Blood of Victims

In *41 Million Hectares*, the violence that in art is usually invisible comes to light; that is, the implicit is overturned and becomes explicit. I am referring to the materiality of the medium of representation, to the animal, vegetable, and mineral substrates that make up the work. Without figures, metaphors, or allegories, Piffer’s image explicitly shows cruelty by revealing what art is made of. Paradoxically, the visual arts (strictly speaking, the arts in general) seem to hide their materiality in order to make visible a concept, a symbol, or a representation that supposedly lies outside of them. In the hidden yet completely present materiality of art there is nothing but mineral, vegetable, and animal components: pigments extracted from insects, mollusks, eggs, plants, or rocks, painted with hairs of different mammals or drawn with bird feathers on plant or tree fibers. Perhaps the most striking case is that of animals, which, despite having a predominant material presence in art – as a montage made by and for human subjects –, appear only as symbols or metaphors or simply as something beautiful, although some contemporary expressions have echoed the critique of the idea of human exceptionalism by giving visibility to animal bodies within the works (Aloi 2015). However, this does not necessarily entail a non-anthropocentric treatment (Fleisner 2019: 84).

On the contrary, in Piffer’s work, blood is not merely a medium or material that remains hidden behind a concept or a representation that lies outside. Nor is it something that is simply made into a theme. It is, instead, a knot in which signifier and matter are united to the point of being indistinguishable.

The dust of this blood, in *41 Million Hectares*, is an *endless medium*. As Fleisner argues,

[the] *media* of art (in the sense of substrate or matter) [...] no longer refer to an exterior that gives them meaning, but are instead this pure mediality that challenges the very structure of meaning and symbolization that has served to keep them tied to humanistic jargon. (2019: 84)

To use the words of Segato (2016: 43) when she reflects on the crimes in Ciudad Juárez, *41 Million Hectares* is “a blood pact in the blood of the victims,” that further depends on the configuration of space and the availability of existing humans and non-humans. In this last sentence, the word “is” should be emphasized and the absence of terms such as “represents” should be noted. The blood is presented or made present. The work’s significance lies in a material gesture. It is in the very material of the work that violence appears.

The outrage that Sontag (2007) expresses in *Regarding the Pain of Others* over the rejection generated by the Abu Ghraib photographs – and not what they expose – has no place in *41 Million Hectares*. Sontag, a U.S. American critic, argues that photographs replace reality as if they were a separate sphere from it. In Piffer’s installation, there is no possible distinction between representation and presentation, nor between reality and something that is separate from it and therefore something else. Nor is there a hierarchical difference or subordination between the concept and the medium; they are one and the same.

In this material semiotic knot, the representation aligned with anthropocentric humanism is undone and an escape hatch is opened, thereby constituting the materialistic and posthuman political power of this image. Blood, the pure medium of the work, makes visible the transformation of 41 million hectares into a site of exploitation, regardless of the past, the present, or the future of those humans and non-humans intimately linked to it.

The blood itself tells its own story. It reckons with its availability for extraction and consumption. But also, by being a work of art, it ceases to be a resource and becomes an agent of its transformations and a form, as Fleisner states, of self-expression.

The subject matter of art seems to be no longer the alchemical place of transformation of the inert and formless into the sublimated idea through representation [...] In the current context, where the human and the inhuman enter a zone of mixture and non-hierarchical indefiniteness, matter is no longer the substrate of the work, nor is it part of a message that transcends it, but rather what lies beyond the anthropological intervention capable of transforming it into a ‘resource of self-expression.’ (2019: 86)

Nixon (2011: 4) wonders whether it is possible to convert slow-developing, long-term violence into images and narratives. In the analysis presented here, which inter-

twines Piffer's work – focused on a specific historical event – with the concepts of the Anthropocene and extractivism, a possible positive answer emerges. In *41 Million Hectares*, the combination of dehydrated cow's blood and a numerical measure tells the story of the so-called “desert” campaigns that took place during the nineteenth century and also of other genocides associated with it: that of animal blood, plant sap, fossil fuels from the mountains and soils, and water from rivers and lakes (to name but a few). All of these are resources that, since the implementation of an extractivist and neo-extractivist model, have been made available to certain humans. Blood, without being subordinate to a human symbol or concept, makes explicit: violence is, ultimately, consecration of capital.

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Garbage in the Atacama Desert

Elisa Cárdenas Ayala and Gerardo Cham



Gonzalo Zúñiga *Illegal Clothing Landfill in Alto Hospicio, Chile* (2021). Source: @fotosaereas.

The image selected for this entry may resemble a scene from science fiction, but in reality, it reveals, through an aerial shot, one of the most recent ecological disasters in the Southern Cone: an illegal clothing landfill in Alto Hospicio, Chile. The image, taken by Chilean photographer Gonzalo Zúñiga in 2021, is evocative because, allegorically, it makes the desert speak through a camera mounted on a drone. The problem of pollution in the Atacama Desert is shown from a strictly contemporary visual perspective, which also implies the almost instantaneous circulation of images through cyberspace. In this way, the photograph contains a paradox: although the desert is often conceived as an immense wasteland, basically closed off from the eyes of the world, this image is part of a recent technology is both deeply invasive and simultaneously transmitted to any part of the planet. Today's digital photography has reached the point that it is capable of exposing virtually any location on the Earth's surface. These kinds of images produce a certain immediate knowledge

of very complex phenomena, giving viewers the feeling of being involved in history, albeit unable to control it (Fontcuberta 2016).

This view shows a site in the Atacama Desert that has unfortunately become one of the largest open-air textile landfills on the planet. Gonzalo Zúñiga's photos of garbage in the Atacama desert have been widely distributed by Agence France Presse (AFP) and other agencies. Alto Hospicio is a multicultural Chilean commune located in the province of Iquique, in the Tarapacá region, in northern Chile, very close to the border with Peru. The aerial view taken there reveals an environmental emergency caused by systematic human intervention, representing what has led some scientists to call this era in the life of the planet the Anthropocene. On a symbolic level, the image can be perceived metaphorically as a huge infected scab on the parched skin of the desert. Tons of used and unused clothing are piled up in mounds abounded in the middle of the Atacama Desert. A drive along the winding roads that wind their way through the mountains of clothing is enough to gauge the dimensions of the problem. Millions of garments produced in global sweatshops by companies based in the United States, Canada, Europe, and Asia, are discarded to be resold, yet end up largely piled in gigantic landfills due to multiple contingencies. These clothes produce large amounts of toxic gases as the synthetic materials in the fabrics degrade.

As late as the beginning of the twentieth century, the word "clothing" was closely related to the verb "to dress". Garments or dresses were usually made by hand by the people who would wear them or by their relatives; they were sometimes stolen and, if they endured, they were inherited (Bastarrica Mora 2016). Their value was closely associated with the vital need to protect the body from the elements and with the social function of covering it while simultaneously offering it up to the gaze of others. They also had an emotional value: as they passed from one person to another, they carried something of life in their very fabric. For centuries, everywhere in the world, each garment referred to the hands that made it, for themselves or for others, full of knowledge and symbolism. This is still the case in increasingly rare corners of the Earth. Clothing was created to cover human nakedness, to wrap it up whether in life or in the afterlife. For example, hundreds of mummies from the Paracas Desert in present-day Peru still have magnificent attire today, despite having spent several centuries in complex burial bundles. Mixed in with the desert sand are pieces of textiles, remnants of ancient ritual garments.

Until a few decades ago, the phenomenon known as fashion – the gradual transformation of clothing's primary function into a fleeting craze – took place primarily on the scale of human bodies. This product of creativity, linked to names that became famous in European and American capitals and to the idea of unique pieces, became coupled with the dynamics of consumption under the logic of capitalism and was transformed into an industry. Although it still maintains its exclusive commercial niche, fashion as a class marker, with its biannual rhythm of spring-summer and fall-winter seasons (according to the northern latitude), in shop windows and

on the covers of large-format, full-color magazines, has been devoured by its own vertigo, *fast fashion*: the massification of international fashion, the democratization of the vertigo of consumption, until the acceleration of the production-consumption cycle led it to explode in the desert.

In a certain sense, the word “desert” evokes the image of naked earth, stripped of vegetation and seemingly devoid of life, though this is only the impression of those who contemplate it from afar. The desert is also bound to the idea of solitude, understood as the solitude that enables introspection and meditation; for that reason, deserts were once the quintessential dwelling place of hermits. We often imagine the desert as a barren wasteland, inhospitable to human life. The absence of water, compounded by extremely arid sandy soils, creates formidable obstacles to the survival of any community. And yet, in our own time, the adoption of innovative techniques has facilitated to turn desert regions into fertile agricultural land. For years, vegetables, herbs, and flowers have been cultivated and exported from deserts around the globe. In many cases, desert cultivation has not only reduced erosion across immense territories but has also mitigated, in certain regions, the effects of global warming.

The Atacama Desert is often described as the most extreme desert on Earth. For the most part it constitutes what geographers call an “absolute desert,” stretching across Chile’s northern regions of Iquique and Antofagasta (el Norte Grande) before giving way to the semidesert zones of Atacama and Coquimbo (Cereceda, Errázuriz, and Osses 2009). The world’s most extensive copper extraction takes place there, but it is also the site of immense landfills of discarded clothing – the very sites under analysis here.

At the root of these clandestine mountains of waste lies a simple economic logic. According to the Ellen MacArthur Foundation, in its report *A New Textiles Economy: Redesigning Fashion’s Future* (2017), clothing production in Western countries doubled between 2000 and 2015. From 50 billion garments manufactured in 2000, production soared to more than 100 billion by 2015. Chile has become the leading importer of used clothing in Latin America, via its duty-free port located in Iquique, some 1,800 kilometers north of Santiago. Each year, approximately 59,000 tons of used garments enter Chile through that port. After administrative inspection, the merchandise is distributed by trailers and trucks to the famed free-trade zone known as Zofri. There, just over fifty importers receive vast shipments of clothing, entirely exempt from taxes. The newly unloaded garments are sorted into three main categories of bales, with the most defective – torn, stained, or poorly stitched – consigned to the enormous dumps of Atacama. A recent BBC News Mundo documentary (Pianzola 2022) estimated that roughly 40,000 tons of clothing are discarded annually, accumulating in Alto Hospicio, one of the largest textile landfills on the planet.

The ecological disaster intertwines with equally complex social problems, for within Alto Hospicio live communities beset by extreme marginalization and poverty. The cycle is circular: while the sale of used clothing is legal throughout Chile, no one assumes responsibility for the garments discarded after passing through the filters of resale. Thus, cycles of impoverishment are endlessly reproduced in Iquique. To grasp the sheer scale of ecological damage inflicted upon the Atacama Desert, one need only consider that polyester fibers in those discarded garments can take up to two hundred years to decompose (Morales, Richard, and Garcés 2018). The toxic consequences are manifold. They poison not only the desert soils but also the health of nearby residents, since at least once a year a massive open-air fire breaks out. Vendors, Venezuelan migrants, and “pickers” of clothing who live at the landfill’s margins cannot avoid inhaling toxic gases. The poisonous smoke especially affects Venezuelan migrant families, who scour the dumps in desperate search of garments that can still be sold. For them, few alternatives exist: formal employment is largely closed off by bureaucratic obstacles and by the unbridled discrimination that prevails in Iquique. All of this tragedy is captured in the image presented here.

Yet this aerial view also gestures toward a disproportionate problem on a global scale. The production rates of so-called fast fashion – whose epicenters are located in the wealthiest Western countries – have skyrocketed over the past decade. Whereas two decades ago the fashion industry revolved around four annual seasons, today there are fifty. This staggering acceleration testifies to the frenzied pace of consumption, especially in the most Westernized nations (Mahtani 2022). Major apparel companies continue to manufacture garments on an industrial scale without proposing viable solutions for sustainable disposal. Nor have they shown interest in developing preventive advertising campaigns against the indiscriminate disposal of clothing, whether used or new. Reports, such as one produced by Argentina’s El Trece television network (2021), reveal that Atacama’s textile graveyards are also filled with brand-new clothing: shopping bags, athletic shoes, and other items, some still bearing their original price tags in dollars or euros. Meanwhile, no existing legislation prohibits countries like Chile from importing such waste.

A possible response to this crisis lies in a recently proposed Chilean law that would require importing companies to manage their own waste. This is far from simple, for it would rupture survival-based commercial chains. If forced to handle their own discards, importers would prevent torn, stained, or defective garments from being resold by informal vendors who depend on secondhand markets. Yet more pragmatic obstacles abound. Edgard Ortega, an environmental expert for Alto Hospicio’s municipal government, explained in the documentary *El inmenso “basurero del mundo” de ropa usada en el desierto de Atacama* (The World’s Largest Dump of Used Clothing in the Atacama Desert) (Pianzola 2022) that the municipal budget to hire inspectors is chronically insufficient. He added that only seven inspectors

are tasked with monitoring and sanctioning importers who dispose of garments in clandestine desert landfills.

In the absence of robust legal or fiscal regulation, some entrepreneurs have sought to develop new business models around recycling used clothing. One example is Franklin Zepeda, founder of Ecofibra (Pianzola 2022), a family-owned company that processes three tons of used clothing per day, transforming it into high-quality thermoacoustic materials for the construction industry. Yet such initiatives remain inadequate. It is estimated that at least 100,000 tons of clothing are already piled in the desert, and the number continues to rise, with at least another 40,000 tons added annually – largely because importers have expanded their purchasing capacities, particularly since the pandemic. To comprehend the scope of devastation, consider that today the textile industry is the second most polluting in the world. Within the European Union, it ranks fourth among economic activities with the greatest environmental impact (Nogueira Calvar 2022). The production of a single jacket requires 2,700 liters of water – the equivalent of what one person would drink over two years. Moreover, more than 80 percent of textiles produced globally end up burned or abandoned in landfills like Alto Hospicio. And given that Atacama is the driest desert in the world, the accumulation of discarded clothing ultimately seeps into groundwater reserves, which flow through various channels to the sea.

Meanwhile, many of those involved across the entire chain – from production to sale to final consumption – act solely in pursuit of their own economic and personal interests, disregarding environmental consequences. The lack of coherent regulation discourages even well-intentioned manufacturers, who are forced to operate without large-scale strategies and to rely instead on isolated initiatives. A viable solution would require not only much stricter regulation but also the cultivation of a large-scale culture of environmentally responsible consumption. In recent years, proposals for textile circularity have emerged – models of commercialization that aim at producing garments in such a way that sending them to landfills becomes inconceivable. Such a closed-loop approach would help mitigate the massive Anthropocene problem of textile pollution in the Atacama region.

Tragically, the problem of open-air textile waste is not confined to Atacama but extends across many regions of Latin America. The paradox is painful: Latin America is one of the richest regions on Earth in terms of biodiversity of plant fibers, which for centuries have been a source of cultural wealth and identity. To appreciate this scope, recall that in Colombia alone, the fibers of more than 248 plant species have been used for textile purposes since pre-Hispanic times (Linares 1994). Even today, numerous Indigenous communities continue to produce their own clothing, tools, baskets, mantles, fabrics, dresses, bags, and ropes, drawing on this ancestral knowledge. These plant fibers, once processed, retain profound symbolic connections to everyday life, the economy, the land, religious rituals, and ancestral tra-

ditions (España Espinoza 2019). Virtually all pre-Hispanic cultures relied on plant fibers to clothe themselves and to sustain their cultural practices. In Bolivia, Peru, and Chile, alpaca fiber remains a vital economic and cultural symbol. Other examples include the introduction of sheep during the colonial conquest of Argentina and Uruguay, which gave rise to communities deeply identified with sheep's wool; and in Mexico, the pre-Hispanic production of henequen fiber, essential for clothing, cords, ropes, and baskets.

In recent decades, not only Indigenous communities but also broader social sectors have sought to preserve plant-fiber traditions in response to global warming and the ecological devastation caused by polymer-based textiles. Increasingly, efforts are being made to develop new everyday materials from plant fibers. For all these reasons, Latin America possesses enormous potential for bioprospecting, thanks to its abundance and diversity of fibers and its rich heritage of ancestral knowledge. As Juan Manuel España Espinoza (2020) notes, the paradox is that despite these advantages, regions such as Asia, the United States, and Europe are at the forefront of large-scale research and application of plant-fiber textiles, even though Latin American entrepreneurs could easily access financing. In conclusion, one significant path toward mitigating textile pollution in the Atacama Desert would be the gradual yet resolute implementation of circular production, coupled with a systematic return to plant-based materials used for centuries by Indigenous communities of the Americas.

Atacama is the place where the verb “to dress” lays bare the entire absurdity of capitalism. What history of humanity could be written through the window offered by each image of a desert dressed in clothing waste? The archaeologists of the future – if their profession still exists – will craft the most outlandish hypotheses, and none will be more absurd than the reality already laid bare in those mounds of barely worn or almost-new garments. These clothes strip humanity naked, they are the human footprint etched deep into the desert. Atacama – the desert and the great salt flat – is the place where international astronomical research intersects with the search for the disappeared of the dictatorship, a horizon traversed by the endless tracks of trains bearing rolls of copper, by the warehouses of the mines, by the misery and the laughter immortalized in the novels of Hernán Rivera Letelier.

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Visual Representations in the Andes from 1950 to the Present

Overflow

Catalina Valdés E.



Josefina Guilisasti, *Desborde* (2019). Sculptural installation. Santiago, Chile: Museo Nacional de Bellas Artes. Source: Photograph by Jorge Brandtmayer.

A portion of the Earth where the lithosphere reaches nearly 7,000 meters in thickness, the result of some 200 million years of convergent tectonic forces that connect and transform the Nazca and South American plates into a network of rocks, ice, rivers, and valleys in constant mutation. Here, everything is movement: winds, minerals, and water shape high-altitude biomes where species of bacteria, fungi, plants, and animals develop life forms adapted to extreme conditions, creating a continuous landscape of extraordinary diversity. Like a single immense body, this geological entity traverses the continent from Maracaibo to Tierra del Fuego, stretching toward the sky, expanding through rivers and valleys to shape the land and its people, channeling the cycles of life in its ravines, preserving in snow what is most sacred. The immense succession of geological layers that form

the Andes mountain range has also sedimented into human history. For many of the ancestral peoples of the Americas, the mountain are the origin and meaning, a point of orientation, a source of water, a path, and a dwelling. Against this slow timepiece of rock, our brief temporalities seem smaller than a minuscule grain of sand. Faced with the immensity of its forms, our imagination proves insufficient: few human creations have managed to represent the Andean scale.

Lines of entangled serpentine curves and sinuous figures traverse the earliest maps that guided European cartographic imagination through these lands. Sequences of small triangles, some with a flame indicating the presence of volcanoes; short strokes repeated to suggest the extent of a shadow cast by an elevation, simulated cut-and-profile drawings on the Earth's crust, conventional contour lines; and colors translating topographic data, etc.: these were the diverse visual tools used in attempts to inscribe the mountain range into an image. Aerial photographs and films later contributed wider-ranging visions, and today we have satellite and digital cartographic technologies that accumulate details into images that fit in the palm of our hand. And yet, the mountain range remains unrepresentable.

Artistic imagination, on the other hand, has almost always relied on metonymy to compose images of the mountain range, synthesizing its forces into the representation of a snow-capped peak or volcano. The power of these images is persistent and has been used to invoke deities, peoples, and nations in emblems that circulate on coins, crests, and flags. Field sketches by explorer-artists, engravings, and mountaineers' photographs capture fragments of an experience that remains untransmissible. Large-scale landscape paintings have portrayed the Andes from their base; few painters have dared to depict them from above. Sculpture, meanwhile, holds an advantage: when made of earth, granite, or metal, it contains the mountain's presence in its very materiality. In short, the Andes have historically been, and still are, a constant motif for the arts. Time and again, artists return to these mountains, knowing that a single attempt to represent them is never enough.

After reaching the high icy peaks of the Peruvian Andes in the summer of 2017, Chilean artist Josefina Guilisasti set out to draw her vision. Using the grid drawing method, she traced a grid on paper and began filling in each square, one by one, with white, gray, and blue tones, surrendering – with each stroke – to the futility of her attempt. Through the repetition of this gesture, she encountered mountain stories: the names of glaciers and lakes, the diverse life forms inhabiting them, Andean communities, and increasingly, tales of loss, the disappearance of these life forms, the pollution of these waters, the dispersal of Andean peoples, the erasure of their traditions, and the death of landscapes she painted as if they were eternal. To the mining extractivism of the land and the pollution of high-altitude water sources, we must add the loss of unique biodiversity adapted to extreme conditions and the progressive thawing of permafrost due to global warming. Once again, she confirmed that

the image falls short: but this time, to reveal the socio-environmental collapse of the Andes.

The growing awareness that she was painting a disappearing body filled Guisasti with profound anguish, compelling her to seek dialogue, to explore others' ways of seeing the Andes that might complement her own vision, which now felt increasingly inadequate and terrifying. Thus began a three-way conversation that unfolded over months, bringing together geographer Pilar Cereceda and eco-anthropologist Horacio Larraín. Arts and sciences in dialogue to address a nature in crisis. To these researchers, who had spent years traversing and studying the mountain range, she posed the unsettling question: what if the Andes disappeared? From this fear- and uncertainty-laden inquiry, others emerged, venturing into the dystopian fiction proposed by the artist: what if the immense, unrepresentable heights of the Andes turned flat? Where would the waters of the glaciers go? What would become of the rivers that now divide their flows at the high peaks, rushing as torrents toward the Pacific or spreading as broad currents toward the Atlantic? Where would the winds from both oceans blow, winds that now circulate through Andean ravines? And the fog? And the "flying rivers"? What would become of the people accustomed to living at high altitudes, or the plants that only grow near the sun, with low oxygen levels? And the animals? And the gods and ancestral guardians of the mountains? What happens if all that, that immense body, disappears?

This funereal exercise of imagining the mountains' death emerged as a way to access what remained unrepresentable, but also as a means to give shape to uncertainty and fear, to the sorrow of witnessing all that unique life being destroyed. That is the origin of *Desborde* (Overflow), an ephemeral sculpture born from a profound confluence of artistic imagination, anthropological fieldwork, geographical knowledge of the territory, historical references, and the representational strategies of art, cartography, and technology. *Desborde* evokes the melting of Andean waters – once called "eternal snows" – due to anthropogenic effects, causing overflow and evaporation. *Desborde* also points to the realization that a body like the Andes acknowledges no geopolitical borders. Finally, *Desborde* refers to the effect the mountain range has on our imagination, which is incapable of containing, within a single image, a body so vast and full of ecosystemic connections, so transcendent.

The three-way speculation traced these connections, moving from scientific knowledge to travel narratives, from memories to empirical data, noting with nostalgia that accelerated changes invariably lead to the loss of life forms as once experienced. Currently, socio-environmental conflicts in the Andes Mountains are numerous and complex, involving local communities and governments that enable the overexploitation of natural resources by corporations – typically multinationals. The primary source of conflict in the Andes is large-scale mining, followed by high-mountain hydroelectric plants, potable water pollution and scarcity, and the

replacement of highly endemic biodiversity with vast monocultures for the forestry industry.

These conflicts often manifest as territorial disputes, displacements, social protests, and legal actions that violate the human rights of Indigenous communities, rural populations, and citizens at large. Rarely do national governments' political or legal interventions succeed in curbing the damage wrought by these large-scale ventures, revealing how the Anthropocene is also the era of transnational capitalism. Thus, the mountain range becomes both a battleground and the epicenter of countless socio-environmental conflicts. Quantitatively, the *Environmental Justice Atlas* records 749 conflicts in South America as of June 2024. While no public geolocated database currently tallies Andean-specific conflicts, cross-referencing national and regional reports suggests 150 to 300 active socio-environmental struggles across Andean territories in South America – including disputes over water, glaciers, mining, energy, wildfires, and Indigenous territorial rights.

Using a 3D topographic model of the territory spanning Venezuela to Chile (between the 15°N and 55°S parallels), the space was divided into nine polygons to establish a 1:900,000 scale. The Andes' roughly 8,000 km length thus became the sculpture's 8.88-meter span. Altitude references (e.g., Aconcagua's 6,962 masl) were translated into a 1,268:1 ratio. To isolate the mountain range from the rest of the valleys, lower-elevation ridges, and coastlines to which it is geographically connected, the sea level was simulated at 360 meters above sea level – effectively imagining much of South America flooded. This 3D model served as the foundation for crafting the beeswax sculpture of the Andes, which was suspended across nine metal tables. Beneath each table, mimicking global warming, a heat source was installed to melt the wax.

The heat and scent of beeswax transformed the hall of Santiago's Museum of Fine Arts into the stage of a ritual: a solemn wake for the mountain range. As it melted, the sculpture evoked Icarus's wings and the collapse of the modern spirit in its reckless plunder of nature, fueled by the myth of human supremacy. Gradually, the ravines stretched into gentle plains; mountain chains fractured into archipelagos; peaks became hills, mountains reduced to foothills, until everything dissolved into tiny islands: Aconcagua, the volcanoes of Atacama, the Andean altiplano, Ecuador's high summits, the massifs of Colombia and Venezuela. All melted, collapsed, and were captured by the fired-clay vessels below. Silence in the room mingled with curiosity about these shifting forms. Sorrow intertwined with awe at their beauty, and I believe that all of us who spent those days before the mountain's body reaffirmed our love for the Andes. A peculiar love for an immense being. May that love transform into care: that was the response that emerged in the end.

About the artist

Josefina Guilisasti (Santiago, 1963) holds a degree in Fine Arts from the University of Chile. She trained in scenographic painting at La Scala Theatre in Milan, Italy. She currently lives and works in Santiago, Chile. Since 1990, she has explored the metaphorical potential of still life and other traditions of representing the non-human. Working across mediums, from painting, photography, and ceramics to media installation, she retrieves the anthropological, historical, aesthetic, and material dimensions of objects, revealing in human creations a second nature.

Technical Specifications

Modular wax parts.

Five metal bases 120 x 120 cm.

Two metal bases 240 x 120 cm.

Heating System.

Fourteen clay containers from Pomaire, manufactured by Juan Toledo, 2019.

Interview. Two MP4 videos, 1'45", 2019.

The installation also incorporated a colored pencil drawing titled *Cordillera Blanca, Perú* (2017) and an oil painting by Luis A. Martínez, *Soledades eternas (Carihuairazo)* from 1906. *Desborde* was conceived and installed as part of the exhibition *The Third Landscape*, held at the National Museum of Fine Arts (MNBA) within the framework of *The Fourth World: the fourteenth Media Arts Biennial of Santiago, 2019*. Pilar Cereceda and Horacio Larraín participated as scientific allies. Other collaborators included Enrique Stindt, Christian Ulloa, Juan Toledo, Soledad Jiménez, Soledad Castillo, Walter González, Catalina Valdés. *Uno a Mil*: Joaquín González, Juan José Olivares, Costanza Montiel, and Tomás Opazo.

Translated by Omar Sierra Chaves and revised by Olaf Kaltmeier.

Water Ecosystem

Paul Merchant



Ana Teresa Barboza and Rafael Freyre, *Ecosistema del agua*, mixed media installation (2019–2022).

What role is there for technology in the Anthropocene? The question may seem perverse, given that it is the unrestrained use of particular technologies that lies at the heart of the very notion of the Anthropocene and its attendant crises (Jørgensen and Jørgensen 2016). Indeed, the proposal of Crawford Lake in Ontario as the site for the “Golden Spike” marking the Anthropocene’s start ties the era to technologies of nuclear fission as the key indicator of the Great Acceleration (Witze 2023). The multimedia installation *Ecosistema del agua*, however, suggests that it is possible to conceive of technology beyond polarized narratives of Anthropocene villainy and modernist techno-optimism. *Ecosistema del agua*’s mobilization of a slow, ancestral, plant-based technology as a means of addressing water scarcity shows how

engagement with pre-Columbian practices and thought patterns might combat the accelerated consumption of resources that characterizes the present.

This piece by Ana Teresa Barboza and Rafael Freyre, which won the Museo de Arte Contemporáneo (MAC) National Prize for Art and Innovation in 2019, draws on artisanal practices of weaving with plant fibers that have existed for some 10,000 years in Peru (Adovasio and Lynch 1973). *Ecosistema del agua* emerged from a series of trips undertaken by Barboza and Freyre to the El Paraíso wetlands on Peru's northern coast. On those trips, the pair began to make drawings in order to understand the wetlands' place in the water cycle and in local and regional ecosystems. From this process of drawing, Barboza and Freyre recount the development of the concept of an ecosystem (including its human communities) as a kind of woven fabric (*tejido*) (Fundación Mar Adentro 2021). What emerged, in other words, was a perspective from which the boundary between the ecological and the social became indistinct.

Accordingly, the installation *Ecosistema del agua* itself was conceived as a *tejido* that binds together not just its natural materials (such as *titora* and *junco* reeds), but also the visitors themselves. Visitors to the installation, which was first exhibited in Lima's MAC in 2019, and subsequently at the Sydney Biennale in 2022, walked across 400 square meters of woven reed mats shaped after the form of a wetland at the archaeological site of Pachacamac, towards bunches of reeds and suspended woven fog traps that captured water from the fine mist being sprayed in the installation space. The droplets formed from the trapped water then passed through a filter made of volcanic rock and local plants. After this first stage of filtration, the water was then carried to tables with a series of glass vessels (visible in the background of this image), where it passed through a series of clay filters before then being available for drinking.

Ideas of weaving and binding extend beyond the reed fibers and the exhibition's visitors, however, to include other human communities. Barboza and Freyre created the installation in collaboration with the Goicochea family of master weavers from Cajamarca, who are listed on Freyre's website as "collaborating artists" alongside those responsible for the ceramics, the stonework, and the work with adobe. An installation of this scale and complexity is necessarily collaborative, but the structure and concept of *Ecosistema del agua* allows the notion of collaboration to be extended beyond the human to include the reeds and indeed the water itself: it is after all the plants and the clay that permit production of the purified water that is the installation's ultimate "object."

This vision of the exhibition as a space of collaboration and interaction between humans and nonhumans brings a further dimension of weaving into view: the joining of past and present. Barboza and Freyre explain that at the Pachacamac archaeological site south of Lima that provided inspiration for *Ecosistema del agua*, the natural wetlands are linked by channels to pools known as *wachaques*. While the function of the *wachaques* is uncertain, it has been suggested that they were used to draw fresh-

water from the wetlands for domestic use, or for the cultivation of fish for human consumption (Pozzi-Escot et al. 2018).

In this way, and through the artisanal knowledge passed through generations of weavers, Barboza and Freyre connect contemporary exhibition spaces in Lima and Sydney with a site that was occupied by Lima, Wari, and Inca cultures, among others, from around 200 CE. With this in mind, the installation's receipt of a prize for innovation is striking, as it speaks to an understanding of innovation that is not limited by linear, teleological temporality. Instead, *innovation* can be seen in this context as a kind of *renovation*, a recentring in the elite urban space of the contemporary art gallery of ancestral techniques that have persisted for millennia.

What, though, of the relevance of the installation as a technology for the Anthropocene? *Ecosistema del agua's* foregrounding of freshwater draws attention to the paradox of the Peruvian Pacific coast. Peru lies next to one of the world's most productive marine ecosystems, the Humboldt Current, but its coastal regions are (in part because of the same current) largely arid. Indeed, the city of Lima, situated on the coast some forty kilometers to the north of Pachacamac, is one of the driest capital cities in the world.

As global average temperatures rise, the instability of this region's climate, which swings between drought and flooding as a result of the El Niño-Southern Oscillation, is likely to increase. Moreover, research has already indicated that water scarcity in Peru is being exacerbated by climate change (Walker-Crawford and Thür 2019). In 2019, the World Bank projected that Lima's strategies for managing drought would be inadequate by 2030 (Groves et al. 2019).

The water collection and purification methods presented in *Ecosistema del agua* do not by themselves represent a large-scale practical solution to this problem: Lima's water needs will not be met by covering the city in woven reed fog catchers to capture water from the coastal *garúa* mists (as attractive an image as that might be). It can however be seen as consonant with recent moves elsewhere in Peru to revive pre-Columbian water management techniques as a means of promoting local, sustainable, and small-scale technological solutions to drought and related difficulties: what Erica Gies has termed "slow water." These approaches include, for instance, the revival of *amunas*, water canals invented by the Wari culture, in some Andean villages (Gies 2021). *Ecosistema del agua* might be thought of as another instance of a "slow water" technology, encouraging its visitors to take time to observe the movement of water from mist to droplets and finally to the contents of a glass, and thus perhaps to reconsider the perception of clean drinking water as instantly available, or "on tap." In this sense, then, the project does represent a practical, scalable solution to water scarcity that might be applied in smaller communities along the Peruvian coast, if not in larger cities like Lima. Gerardo Damonte and Rutgerd Boelens have shown that an agro-export boom has turned coastal regions such as the Ica Valley into extractive, capitalist "hydro-social territories" (Damonte and Boelens 2019). In

this framing, Barboza and Freyre's installation creates a provisional, alternative "hydro-social territory" that could, with adaptations, be implemented outside the space of the contemporary art gallery.

In asking its visitors to *take time*, *Ecosistema del agua* moreover points us towards broader questions of the temporality of the Anthropocene era and challenges narratives of the inevitability of the Anthropocene's Great Acceleration. In a manner consonant with geographer Danny Dorling's evocation of (and advocacy for) a coming "slowdown," *Ecosistema del agua* posits a return to older technologies as a more sustainable form of living (Dorling 2020). In short, Barboza and Freyre's work both addresses a challenge brought on by the Anthropocene and offers a new conception of the period itself.

In this way, *Ecosistema del agua* also avoids the potential coloniality of the Anthropocene as both a historical phenomenon (sometimes dated from 1492) and an analytical framework (see for instance, Wickberg 2020). The force of *Ecosistema del agua*, then, lies in its mobilization of distinct forms of technical and artistic knowledge, both pre-Columbian and contemporary, to propose an interaction between humans, plants, and water that exceeds that colonial perspective. The installation thus becomes a pocket of space and time in which teleological views of the Anthropocene that point to either technological salvation or ecological catastrophe can be suspended and alternative futures can be imagined.

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Tequendama Falls

Lisa Blackmore



Emilio Chapela, *Salto del Tequendama* (2021). Acrylic and ink on linen.

Salto del Tequendama (2021), by Emilio Chapela, is a cascade of colorful lines painted freehand that recreates an iconic waterfall in the Bogotá River in Colombia,

one of the most polluted rivers in the world. As well as connecting us with the contemporary crisis of these waters, Chapela's work connects with a rich visual archive that charts the transformation of this river, from the Mhuysca indigenous people's occupation of the watershed to modernization and industrialization processes. *Salto del Tequendama* is part of the Mexican artist's ongoing aesthetic and theoretical exploration of the lives of rivers as they interact with the dynamics of human development. It is part of the *Caer, caer, caer* (Fall, fall, fall) project that Chapela created in 2020 for *entre-rios.net* as part of a project I co-curated with Chapela and Diego Chocano to produce exchanges between artists from different rivers, during the Covid-19 pandemic. Confined to our homes, we convened a six-month cycle of online meetings and exchanges between artists and researchers in Colombia, Mexico and Peru through the arts-led research network *entre – ríos*. Our inquiry centered on the question: *how can digital media connect us to rivers to continue thinking about the challenges they face in the Anthropocene even during lockdown?*

Chapela's artwork is one answer to that question. Although the artist had never been to the Tequendama Falls, he recreated the body of water in his painting, inspired by the meetings and exchanges convened by *entre – ríos* with artists, activists, and with environmental and civil engineers who shared data on the critical pollution of this waterfall in the Bogotá River. Scientific graphs that identify the presence of heavy metals and chemicals are often represented in bright colors, enabling us to approach these technical images as portraits of rivers, recording their health or deterioration. Declared biologically dead years ago, the Bogotá River, which flows through the Colombian capital, is choked with domestic and industrial waste, including pesticides and heavy metals, to such an extent that it lacks oxygen. The river can barely breathe, but at the Tequendama Falls, the turbulence produced by the drop of more than 150 meters oxygenates the waters.

A tumbling roll of linen that hangs from the ceiling of the exhibition space, Chapela's work evokes the waterfall's physical form, while its colored lines are inspired by the chromatic system that identifies the contaminants in this body of water. *Salto del Tequendama* is not a literal translation of pollution data, nor does it seek to be a figurative illustration of contamination. Rather, Chapela's piece is a vehicle to connect art, science, and the environment by rendering pollutants as flowing lines of color. With its organic stripes of color that unfold into irregular and undulating lines, *Salto del Tequendama* proposes a corporeal and affective bridge between bodies of water. The lively pulse of this body of water, drawn with a free hand, evokes the river's own "pulses," the metaphor formulated by the civil engineer Luis Alejandro Camacho to name and conceptualize the fluctuating health of the Bogotá River (Piñeros García 2023). These two bodies, that of the human and that of the river, converge as living pulses that both somatize malaise. When he created the artwork amid the pandemic, Chapela was himself reflecting on the fragility of

global health and the modern acceleration that has created conditions of ecosocial crisis, such as Covid-19 and the pollution of Bogotá River.

However, it is not all negative; the visual archive of these waters also includes past eras when the river was healthy and represented in the aesthetics of the sublime. In his rendering of Tequendama Falls as a flow of vivid colors, Chapela also establishes an aesthetic connection with a cultural archive that contains different images of the body of water. The Falls play a central role in cosmivision of the Mhuysca indigenous people who inhabit this territory of Funza River, the Bogotá River's ancestral name. The Mhuysca people attribute the origin of Tequendama Falls to the god of rain and protector of agriculture, Chibchacún. To punish human misdemeanor, he flooded the plains of the Sabana de Bogotá, leading people to cry out "to the god Bochica, or Nemqueteba, who appeared above the rainbow with his golden scepter to split open the mountains, creating the falls to drain the flood" (Sierra Díaz 2017). The Mhuysca created an amphibious culture adapted to the Sabana de Bogotá wetlands, where the river flows and floods. Navigating a system of channels created by dam systems, they created *camellones* (a system of raised beds) to grow their food (Rodríguez Gallo 2019). Spanish colonization transformed their symbiotic relationship with these waters, generating a violent displacement of amphibious practices as society began to gradually move away from the flood plains and the river after the founding of Santa Fé de Bogotá. This process deepened in the following centuries, as the city turned its back on the river. The hydraulic controls of the basin that were increasingly installed after independence and during Colombian modernization reflect this conversion of nature – and the river – from a living and revered being into a natural resource.

The rainbow in Chapela's work also connects us with the pictorial tradition of nineteenth-century landscape art in which this waterfall was an iconic reference and the rainbow a leitmotif of Romanticism. In the archives of drawings and paintings, rainbows that appear as light and vapor merge in the waterfall are recurrent leitmotifs. The admiration expressed by Alexander von Humboldt and other so-called "great men" of science and politics fueled a sublime aesthetics that translated into Romantic visions of the Tequendama Falls produced during the first half of the nineteenth century (Uribe 2019). Inspired by Humboldt's stories, the American landscape artist Frederic Edwin Church described the falls as "the most wonderful waterfalls I have ever seen" when visiting South America (cited in Uribe 2019: 45). He carried out numerous *in situ* studies of the body of water and large oil paintings in his U.S. studio. His works include *A Waterfall in Colombia, June 1853*, which represents the turbulent waterfall above, with a rainbow created by the encounter of light and vapors below.

Seen in the wider visual culture of the Tequendama Falls, Chapela's work also connects with the Comisión Corográfica's archive of landscape studies. This cartographic expedition, headed by the Italian military engineer Agostino Codazzi

(1850–1859) and Manuel Ponce de León (1860–1862), produced, in addition to maps, a collection of watercolors of landscapes and typical scenes, including one of the imposing Salto del Tequendama, now available in the Biblioteca Digital de Bogotá. These images were fundamental to the process by which the new Colombian republic turned nature into a resource, justifying the subordination of water and land to human progress. In addition to its visual capture in this “optic of the state” (Andermann 2007), the Tequendama Falls is entangled in the wider colonization of the Bogotá River as it became a motor for Colombia’s modern development. Colombia’s history of hydropower began in 1897 just a few kilometers upstream from the Falls, in the rural area of Soacha, southwest of Bogotá, with the construction of the country’s first hydroelectric plant. Viewing the alteration of this physical landscape in a material ecocritical lens, it is also part of the visual archive of the Anthropocene that we can trace from past to present.

During the twentieth century, the river reached the Tequendama Falls after passing through the El Charquito hydroelectric plant, named for an old hacienda whose land was dynamited to make way for this modern infrastructure. This location was ideal for hydropower generation because the river reaches it after its sudden and rapid descent via a ravine of huge rocks and before reaching the Tequendama Falls. Using a system of sluice gates to regulate flow to the turbines, the plant transformed the river’s organic flow into an anthropogenic tempo, profoundly altering the water’s natural rhythm, controlling its pulse and the amount of water that would reach the Falls. By 1910, the river sent a current of electricity from El Charquito over some twenty-six kilometers to the center of the Bogotá capital, where it reached the Parque de la Independencia, home to a group of pavilions built to celebrate Colombia’s first centennial that same year.

Chronicles of the time celebrate how the park was “illuminated as if it were daylight by thousands of lightbulbs, [where] a crowd of nearly forty thousand people gathered, amazed by the beauty of the spectacle and the marvel of ingenuity [...] that the Electric Power Company has given to the Centennial a handful of sunshine” (Gómez 2010). Amid the pavilions exhibiting artifacts from the fine arts, industry and electric light stood the Quiosco de la Luz (Energy Kiosk), a small building in which an electric lightbulb was displayed to demonstrate the replacement of gas lighting. This building anticipated the ongoing subordination of the Bogotá River to modernization: converted into electricity, the river illuminated and commemorated national progress at the Centennial festivities, thus helping to create a “specular image in supposedly *all* Colombians were supposed to recognize themselves, but which really reflected a racist projection of the white *mestizo* (mixed race) elites that governed the country” (Castro-Gómez 2008: 236).

From the twentieth century to the present, the expansion of Bogotá and the industrialization of its watershed have generated a growing demand for hydropower and increased the discharge of wastewater and industrial waste into the river. This

has deepened the separation of communities from their river, alienating it as infrastructure and perpetuating the instrumentalization that by 1928 manifested in the regulation of waterfalls to produce energy (Sierra Díaz 2017). As suggested by the colorful lines with which Chapela evokes the agonizing flow of the Tequendama Falls, and as hydrological science confirms, rivers have their own pulse and memory. By connecting to the long history of the sociopolitical processes that have transformed human-nature relations, Chapela's *Salto del Tequendama* is a new addition to an emerging archive of physical landscapes, images, and chronicles that attest to the changes the Bogotá River has undergone as it went from Indigenous coexistence to industrial pollution.

Within contemporary art, Chapela is not alone in focusing attention on the Tequendama Falls and the Bogotá River's afflictions. Other long-term projects also encourage reconnection with the river and its polluted waters, while rethinking human relations with water. In *Canto de las abuelas* (Grandmothers' Songs, 2020), the sound artist Leonel Vásquez creates a set of twenty-one "songs" of stones he takes from polluted and threatened rivers in Colombia (including the Bogotá River), placing the rocks on gramophones that the artist himself creates to elicit their sound. In *Recetas de agua* (Water Recipes, 2020) the multidisciplinary artist María Buenaventura takes a culinary approach to the Bogotá River ecosystem, recovering the indigenous traditions of eating the endemic *capitán* fish (*Eremophilus mutisii*), a native of the river that today is endangered and exposed to the river's pollution (Buenaventura 2020). These artistic practices weave alternative water cultures based on respect for river rhythmicity, an ethics of care for their flows, and the principle of relationality, even in the face of the pollution and oblivion. More broadly, these examples reflect the recent "liquid turn" in contemporary Latin American art (Blackmore and Gómez 2020) in which artists are attending to common waters to ask what structural forces have damaged them and what new ecosocial pacts could overcome the Anthropocene's extractive dynamics and move to fairer and more sustainable water cultures.

Translated by Omar Sierra Chaves and revised by Luisa Raquel Ellermeier.

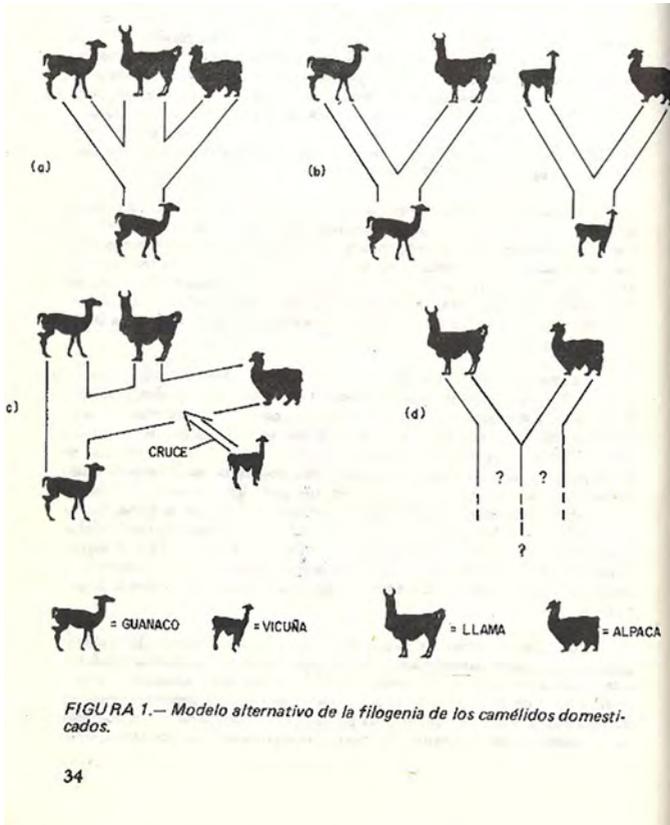
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Phylogeny of Domesticated Camelids

Emily Wakild



Jorge A. Flores Ochoa, "Modelo alternativo de la filogenia de los camélidos domesticados," in *Llamichos y paqocheros: Pastores de llamas y alpacas* (1988: 34).

Animals in the Anthropocene have had a fickle fate. On the one hand, the increase of domesticated species around the world has far surpassed any previous time and has given animals adjacent to humans a renewed lease on life. Up to 62 percent of

nonhuman terrestrial mammalian life is made up of livestock – pigs, sheep, mules, cows – while only 4 percent of that total biomass is held by wild animals (Ritchie 2022). Wild species have seen their numbers plummet since the late twentieth century as their habitats have been converted to human spaces both urban and agricultural, as they have been hunted to diminutive ranges, and as climate changes have decreased the viability of extant ranges. But one group of Latin American animals, camelids, makes up the largest domesticated and among the largest wild species in the region. Llamas are one of four camelid species (llama, *Lama glama*; alpaca, *Vicugna pacos*; guanaco, *Lama guanicoe*; and vicuña, *Vicugna vicugna*) native to what is now Ecuador, Peru, Bolivia, Argentina, and Chile. As the intermixing of Latin binomials suggests, these animals can interbreed to produce fertile offspring and scientists have spent ample time debating which domestic species derived from which wild species. Genetically, all four species of South American camelids possess the same pairing and ordering of chromosomes, which indicates they have not diverged as much as felids or canids, for example.

The rarely told tale of the llama and her cousins is demonstrative of the Anthropocene because it offers an exception to the perceived binary between wild and domesticated animals, with great potential for post-Anthropocenic living. That is, part of the reason it has been difficult to determine which domesticated animal (llama, alpaca) derived from which wild animal (vicuña, guanaco) is because there was no singular, simple process of domestication, but rather multiple hybridities and equilibriums. Stark lines of differentiation assert certainty where none in fact existed, and relational diagrams obscure an anthropogenic obsession with species clarity despite dramatically interrupted evolution. The similarities visible across the animals – as similar as a group of dogs to each other – undermines the chart that seeks to show how the various animals diverged and became separate. Moreover, hidden behind the various trees are the actions of herders selecting, improving, and caring for generations of animals.

In the scientific diagram, all four animal types are sketched darkly with exaggerated differences to make them identifiable. The wild species (guanaco and vicuña) are smaller, skinnier and scrappier and in the figure key, they face off with the domestic species (llama and then alpaca) with larger chests, longer wool, and easily distinguishable ears. With five possible hybridizations depicted across the four animals, the diagram is notable not for its accuracy or its clarity, but rather for the way it represents the sum of the repeated question about these four animals: how they have known and interacted with each other over time. Missing in the representation, however, is the human, the dominant figure in much of the crossing of the animals. By including expansive relations across and between animals as an artifact of the Anthropocene, we see the nuances of camelids drawn into a map of their heritage, which is also Andean cultural heritage.

A diagram such as this removes humans from the equation by placing them as the viewer as well as unseen arranger of the pairings. Humans might be read as the lines in this sorting, but they are not labelled or listed as architects of the species diagram; such an arrangement perfectly marks the unstated authority of human designs. The llama does not question her cousins, it is only the scientist seeking an explanation who needs to articulate the divisions. Andean peoples made individual and collective choices about the animals they cared for over generations, and Andean scientists sought, in the late twentieth century, to explain these patterns as natural evolution.

After decades of debates, DNA tests would seem to indicate that the llama is descended from the wild guanaco, and the alpaca is descended from the wild vicuña (Casey et al. 2018). But hybridization has been the rule across the two domesticated species, llamas and alpacas, which cannot always be identified by sight and usually produce fertile offspring. Much of what the animals are today is a result of how they have been raised, pastured and bred. For instance, male alpacas have been paired with female llamas to increase the animals with “alpaca” fiber, while male llamas have been bred with female alpacas to increase the weight of the wool. But as important as these shifts in animal characteristics are the cultural reasons why people have insisted on modifying the animals, from early hunting to later herding and harvesting on larger scales.

South Americans have made significant contributions to modern science, including by studying animals as part of human culture. Camelid species evolved through centuries of interaction with the needs and desires of Andean peoples. Andean scientists are experts on these animals, as demonstrated by the book in which this image appeared, Jorge A. Flores Ochoa's *Llamichos y paqocheros: pastores de llamas y alpacas* (1988). Flores Ochoa's trajectory is representative of anthropological analysis of Andean pasturage in the 1960s-1990s. He was part of the generation of Peruvians involved in international training via scholarships from the Ford Foundation that took place in the U.S. and Europe, indelibly shaping Latin American universities. After studying abroad, Flores Ochoa returned to his native Cusco where he eventually rose to the highest position of rector at the Universidad Nacional San Antonio Abad del Cusco.

Flores Ochoa's work, including *Llamichos*, is an example of how, in the 1970s, rigorous social science – including history and anthropology – took the study of llama herders seriously in its largest cultural sense within the heart of the Andes. As the only large, domesticated mammal group in South America, the anomaly of these animals had been observed by Spanish and British travelers for centuries. But what happened in this new era was a reconsideration of fundamental questions about how the animals came to be from a genetic and species-level point of view. The answers provided by genetic mapping added more obscurity and emphasized a conclusion of the Anthropocene: that wild and domesticated creatures shared key his-

toric episodes. Ukrainian-born scholar John Murra, with whom Flores Ochoa studied at Cornell University, popularized the concept of “vertical archipelagos,” another recognition of the unique Andean ecological trade networks based on kinship and reciprocity. The concept of vertical archipelagos inverted assumptions about the capacity and strength of empires built on knowledge of the geographic advantages of Europe and Asia and articulated a model that explained the interwoven strength of Andean empires, such as the Inkas, that drew resources from a range of altitudinal gradients across the Andean mountains. This allowed the Inka state to amass power “vertically” through access to resources grown in valleys, micro-climates, and grasslands, including even herding animals like vicuña at alpine heights (Murra 1972).

Other components of this vibrant intellectual exchange included a boom of North American researchers such as Gade (1999), who analyzed why llamas remained un milked, and the authors of the *Flocks of the Wamani* (Flannery, Marcus, and Reynolds 1989) who demonstrated the ways llamas served as conduits between humans and mountain spirits (*wamani*) that tied landscapes together through rituals of obligation as much as shared ecological regions. In this context, Flores Ochoa provides a focal point to interrogate the production of knowledge about the Andes from within the Andes but always connected to diasporic pressures.

The image from *Llamichos* provides access to changing understandings about the biology and culture of animals at multiple levels. At its most direct, the image demonstrates ways that scientific knowledge itself has changed over time. For millennia, Andeans used selective breeding to create favorable traits in camelids including soft, fine, or quickly-growing wool. New research, however, shows that early domesticated lineages existing more than 3,000 years ago are not the direct ancestors of contemporary domesticated species (O’Hare et al. 2024). The early Spanish conquistadors saw no distinctions among the unfamiliar camelids, and slaughtered animals that had been cultivated for generations for specific qualities or sent them to work as pack animals in the silver mines. Many more animals died from diseases carried by the introduced livestock, especially sheep and cattle. Colonialism thus decimated curated attributes in domesticated animals and likely transformed wild ones as well. What was left to be puzzled over in the Anthropocene was a genetic patrimony representing only a sliver of a formerly robust diversity of animal lineages.

Flores Ochoa’s image further reveals conceptions of animals as self-contained entities separate from ecologies and cultures set in place, in this case, the Andes. The seemingly individual genetic line becomes a metaphor for a diverse community of interaction. Scholars like Marisol de la Cadena have demonstrated that, within an Andean worldview, a *place* is not strictly where someone is from, it is also who they are (De la Cadena 2015). A whole range of beings interact in a landscape like the Andes where humans, plants, animals, rivers, and mountains have spirits and souls to be appeased through gifting, reciprocity, and other actions. From this perspective, ignoring the llamas’ origin and culture denies their totality as beings, leaving them

as individualized species to be treated as isolated islands rather than relational creations. Such isolation is itself a key feature of the Anthropocene, in that the human view of being apart from animal pasts and separate from animal lineages has a distinct temporal emergence. Such erasure limits the ability of scientists, policymakers, and others to embrace the complexity and sophisticated entanglements between humans and kindred animals. Making sense of the ways animal pasts shape culture and communities provides a new lens for history, not just of the animals themselves but for the ways they have evolved with and influence human societies.

Finally, the typology of camelids allows for the emergence of collective views regarding the reproductive capacity of distinct animal populations. Abundance, scarcity, endangerment, and wildness became descriptors of ecological health, natural wealth, and social value. All these terms came into circulation through usage by natural scientists concerned with conservation in the Anthropocene. As these concepts became codified in legal frameworks, especially international ones such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973), Andean countries like Peru acted to save the vicuña, providing an important indicator of the ability of societies to mobilize to not just decimate and destroy, but also to conserve and care (Wakild 2020). As this language and landscape shifted, animals gained and lost moral salience based on categories like endangerment.

Where does that leave llamas? Populations of wild guanaco and vicuña are growing in much of their historic ranges, certainly from the nadir at the middle of the twentieth century when the animals fell prey to commodity extraction and lacked enforced legal protections. Llama and alpaca populations have had a boom-and-bust cycle beyond the Andes, but in their native range, their existence is stable. Llamas are among the most popular of animal models for toys, recently eclipsed by axolotls, another Latin American exotic oddity. The evolving scientific approach to camelids suggests that there are many ways of figuring out how to grasp, represent, and live with large animals as part of the human past, present and future.

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Visual Representation in the Amazon from 1950 to the Present

Oh, I see, real civilized!

Emanuele Fabiano and Patrícia Vieira



Denilson Baniwa, *Oh, I see, real civilized!* (2015). Digital Engraving. Source: <https://www.behance.net/gallery/57605855/Oh-I-see-real-civilized/modules/339146863#>.

There is always an ominous feeling of doom in discussions about the Anthropocene. After all, the geological era defined by the imprint humans have already left upon the earth is rife with somber news: anthropogenic climate change, large-scale deforestation, acidification of the oceans and mass extinctions of more-than-human beings are just some of the ills *Homo sapiens* has showered upon the planet. Is the Anthropocene a sign that the apocalypse is near? Does it embody the material conditions for the onset of conquest, war, famine, and death, the grim four apocalyptic horsemen?

In *Oh, I see, real civilized!* (2015), artist Denilson Baniwa (1984-) comments upon the Western view of the apocalypse and its ties to the also Western conception of the Anthropocene. A member of the Baniwa people who live in the Northwestern region of the Brazilian Amazon, Baniwa subtly refers to the history and cultural heritage of Indigenous communities in his work derived from a scene from the famous *Mad Max* (1979) apocalyptic series of movies. In this artwork, he modifies a still from *Mad Max 2: The Road Warrior* (George Miller, 1981), in which the well-known policeman-turned-avenger “Mad” Max (Mel Gibson), walks together with his faithful dog along a seemingly endless road across an arid, deserted landscape. In Baniwa’s version, however, the character is fitted with an Indigenous feathered headpiece and carries a bow and arrows. What is Baniwa hinting at with his superimposition of traditional Indigenous warrior artifacts onto the quintessential Western protagonist of *Mad Max*? And what does his artwork tell us about Amazonian Indigenous views on the Anthropocene apocalypse?

It is worth remembering that the *Mad Max* movie series, which started with a homonymous film in 1979, is set in a post-apocalyptic, dry, and mostly barren world in which organized social life has ceased to exist and pockets of surviving humans are left to fend for themselves and fight against predatory gangs. While, in the first movie, the causes of civilizational breakdown are left unspecified, *Mad Max 2* (1981) explicitly refers to fuel wars; indeed, fuel shortages are the main driver of the plot. Subsequent films again revolve around energy (*Mad Max Beyond Thunderdome*, 1985) and water shortages (*Mad Max: Fury Road*, 2015) that – viewers are prompted to imagine – have led to societal collapse and the fierce desire to conquer the last hidden “place of abundance” in order to consume it (*Furiosa: A Mad Max Saga*, 2024).

A glaring blind spot of all *Mad Max* movies is the contrast between the obvious glorification of a fossil-fuel dependent life and the environmental catastrophe that serves as their background. The films revel in long-drawn, repetitive truck, car and motorbike chases, exhaust pipes fuming abundantly, and engines revving loudly in an orgiastic celebration of fossil fuel culture. In fact, the thin plot of the movies appears to be just an excuse for these long sequences of pursuit and the display of speed fetishism. It does not occur to characters in the films – nor to the films’ director and crew, apparently – that there is a direct correlation between the energy shortages and environmental predicament in which they find themselves and their incessant car chases. Environmental catastrophe is left unthematized, as something that just happened for no easily identifiable reason. The series exists in a blissful state of denial as to the environmental consequences of fossil fuel reliance, even as it paradoxically draws an implicit link between car and motorbike idolization and the apocalypse. The films take place in a scenario where the worst features of the Anthropocene have been exacerbated, yet choose to ignore anthropogenic environmental change. What could be more emblematic of the current Western *Weltanschauung*?

The scathingly ironic title of Baniwa's image based on the *Mad Max* still, *Oh, I see, real civilized*, draws attention to the very meaning of civilization from the point of view of those Indigenous communities who have been deemed "barbaric" throughout the history of Western colonialism. Are car and motorbike chases, together with the horrific violence celebrated in the movies, the epitome of Western culture, what it will all boil down to in the end times, once the Apocalypse has robbed the world of the last trappings of politics and politeness? Is an environmentally deadly fossil-fueled lifestyle the best the West has to offer, and are these the customs Indigenous people should adopt in order to become "civilized"? "Who are the real barbarians?", Baniwa seems to be asking through his artwork.

The toxic masculinity depicted in the movies, in which rape and the exploitation of women are commonplace, is another feature of the films that Baniwa's artwork comments upon. The fixation on speed, cars, trucks, and motorbikes appeals to an imaginary traditionally associated with white, heterosexual men and with the patriarchal, Western worldview that has shaped the Anthropocene. The cult of the heroic white man Max who fights against the bad guys in turn evokes the frontier cowboy of old, a harbinger of civilization in places where savagery had hitherto ruled. Max is a post-apocalyptic, "loner" conquistador who helps different groups of settlers sow the seeds for new civilizations among the wreckage of barbarism. How does this all-too-familiar familiar picture change in Baniwa's work? For one, the artist's reference to an Indigenous context evokes the countless examples of sexual violence perpetrated against Indigenous women in the Amazon and throughout the world, not by people who stand for the collapse of civilization, as is the case in the movies, but by those who were purportedly bringing progress to Indigenous communities. Ultimately, Baniwa questions the prerogative of Max as a last representative of the civilized world and wonders how the same character would be interpreted were he an Indigenous person.

Baniwa's work rewrites an icon of post-apocalyptic, Western narratives through a metaphysical short-circuit that invites viewers to perceive the notions of "end" and of "world" from an Indigenous perspective. He does so through a superimposition of paradoxical elements onto the original film still. The outcome preserves the original referent, while adding to it an estrangement effect that keeps the original context and, at the same time, creates a dialogue with a different set of Indigenous referents.

Max is a hero that represents the dusk of a world – the Western world – as a result of its own internal collapse. In the films, the actions of the human survivors set in motion a regression to a state of ecological, social, and moral disintegration, where everything continues to exist in an indefinite temporality after the Fall. People live in a Cartesian world, the geography of which is crisscrossed by rectilinear roads that seem to lead nowhere. This very linearity is the foundation for the Apocalyptic eschatology that propels characters to compulsively search for their lost humanity in a perverse game of shadows.

In contrast to its filmic counterpart, the character created by Baniwa embodies a radical critique of Western dystopian narratives and the ideologies that bolster them. These narratives are questioned by Amazonian Indigenous peoples such as the Baniwa, who conceive of the world as a continuous process of creations and destructions that are part of its own creative dynamics. In the dystopian imaginary of the films, the life of the human survivors is reduced to a rapid extractive cycle of consumption and death, controlled by tyrannical regimes. Conversely, from an Amazonian Indigenous point of view, there is no one world, but rather plural worlds defined by a system of relations. Every aspect of material and spiritual human life has a counterpart in more-than-human existence, which means that the material forms and physical transformations of the visible world inform humans about the invisible reality of more than humans. This knowledge fosters the emergence of a stable network of relations: more-than-human and human communities are organized according to the same principles and the interaction between humans and more than humans is the same as the connections between different human communities. In the *Mad Max* films, there are barely any more-than-human beings. Max's dog in *Mad Max 2* (1981), which appears in Baniwa's work, is killed in the end of the movie, a telling sign of the destruction of all more-than-human life. For Amazonian Indigenous peoples, in contrast, the world is a cosmic society of "peoples" and "communities," human and more-than-human, that exist in an intensely relational environment.

Amazonian Indigenous ontologies conceive of the world in a way that is antithetical to the future imagined in the *Mad Max* saga. In the latter, the desire for speed turns machines into protagonists that preside over a toxic present and perpetuate the self-destructive practices that lead to humanity's downfall. The films present a post-apocalyptic scenario that re-enacts its pre-apocalyptic conditions. In spite of the hardships of this world about to end, the movies seem to actively reject alternatives to the social models that led to disaster. The Indigenous Max imagined by Baniwa diverges from this model in that he is not just a survivor but, rather a "specialist in ends of the world" (Danowski and Viveiros de Castro 2019: 195). This idea was expressed with piercing irony by Indigenous intellectual Ailton Krenak in his 2020 book *Ideias para adiar o fim do mundo* (Ideas to Postpone the End of the World). In this volume, Krenak states that Indigenous peoples have been resisting Western efforts to annihilate them for 500 years, thus what he worries about is the survival of white people (31). Krenak playfully reminds his readers that South American Indigenous peoples have experienced the end of their worlds multiple times and still managed to survive, so it is the fate of the Western world(view) that hangs in the balance in the Anthropocene.

Baniwa's *Oh, I see, real civilized!* hints at possible ways to overcome the forms of inhabiting the planet that have led to the worst features of the Anthropocene. By subverting and Indigenousizing *Mad Max*, Baniwa calls for a rejection of colonial and

neo-colonial practices, often tied to extractivism, and for imagining other worlds. Drawing on Amazonian Indigenous experience, he advocates for a re-thinking of what “end” and “world” mean for both humans and more than humans, and for an understanding of the dusk of Civilization depicted in the *Mad Max* films as an affirmation of other possibilities.

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Natureza Morta 1

Jamille Pinheiro Dias



Denilson Baniwa, *Natureza Morta 1* (2016).

In April 2020, a leaked recording surfaced of a cabinet meeting in which Ricardo Salles – Brazil’s then Minister of the Environment – encouraged the country’s now former President Jair Bolsonaro to take advantage of the distractions caused by the COVID-19 pandemic to “drive the cattle through” (in Portuguese, “*passar a boiada*”) and “change all the rules” pertaining to the environment. Although alarming, the dismantling of environmental regulation advocated by Salles clearly has historical origins. Cattle ranching was central to the country’s military government’s developmentalist agenda. During the dictatorship, the federal government offered tax advantages and subsidies to people who brought cattle to the Amazon, which was viewed as an act equating patriotism and economic prosperity for the region. As a result of this frame of mind, deforestation retains a sense of permissibility, as if it were a legitimate byproduct of an enterprise that ultimately benefits Brazil – a sacrifice for the greater good of the nation-state. Illustrative of this is a 1971 advertisement from the Superintendency for the Development of the Amazon (SUDAM), which called on ranchers to drive their cattle to the Amazon – “the world’s largest pasture”

– where “land is cheap, so your ranch may have all the grass that cattle need”. This extractivist logic was directly linked to the operations of global capitalism, which saw the Amazon as a site to be exploited for resources, reinforcing a worldview that treated the land and its inhabitants as disposable (Barbosa 1993).

Cattle ranching remains a major driver of deforestation in the Brazilian Amazon, followed by soybean production and logging. In consonance, “to drive the cattle through” became an overarching metaphor for practices characterizing the extractivist ethos that persists in the region. In *Natureza Morta 1* (referencing the tradition of “still life”, which in Portuguese is termed “natureza morta” or, literally, “dead nature”), Amazonian Indigenous artist Denilson Baniwa offers a critical and creative intervention into that mindset. Baniwa’s work explicitly alludes to the artistic genre that, as it took shape in the sixteenth century, emphasized compositions that sought to center household items and seemingly inanimate objects as still life, *Stilleben* or *nature morte* – table sets, fruit, flowers, jugs, pipes, musical instruments, among others – depicted as forms of being in suspension, caught in a tension between blossoming and decay, freshness and ripeness, in sum, signaling the ephemerality of life.

Baniwa shifts his gaze to satellite imagery – a tool critical for detecting deforested regions quickly – to draw the silhouette of a dancing shaman, stitching together fragments of shots to produce a single image. Out of what seems to be an aerial view of barren and deteriorated patches of pastureland bordered by green areas, Baniwa conjures the shaman’s body caught between stillness and motion, inscribing overlapping temporalities to reverse the relegation of Indigenous people to the past. An indirect echo brings to mind Susana de Sousa Dias’s 2005 partially homonymous film *Natureza Morta: Visages d’une Dictature*, which reframes and interrogates archival images of the nearly half-century-long Salazar dictatorship (1926–1974). While the Portuguese filmmaker resorts to meticulous editing to foreground the complexity of the construction of collective memory, Baniwa also chooses a medium that enables altering preexisting imagery – digital photography – in an aesthetic and political intervention frequently referred to by him as “rasura” (defacement). Both gesture towards responsibility with respect to how representations of memory are produced, concealed, and revealed – and what forms of power are promoted or destabilized by images.

Natureza Morta 1 elicits presence out of absence, dislocating Indigenous memories from their assumed bygone status in order to bring up their relevance in the present. In his own analysis of *Natureza Morta 1*, Baniwa (2022) stated that traces of the erasure of Indigenous bodies and histories are “engraved on the skin of the Earth”. By manipulating images of cleared soils, he explained, his intention was to demonstrate that threats to Indigenous ways of living are related to threats to the biodiversity with/in which they live. By drawing attention to the shaman’s rattle – a counter-extractive technology that reclaims the supposedly vanished – , Baniwa in-

vites us to reflect on how Indigenous histories are rendered seen or unseen, pointing to how they can be remembered, acknowledged, and reimagined. In doing so, he denounces the long history of colonial ideologies that sought to assimilate Indigenous peoples into a conception of nature as an entity detached from culture.

After having been selected for the 2020 exhibition “Histories of Dance” at the São Paulo Art Museum (MASP), *Natureza Morta 1* was acquired by the museum and is currently on display on the second floor of the building, in one of the iconic glass easels projected by Lina Bo Bardi. There it stands alongside Victor Meirelles’s 1866 romanticist oil painting *Moema*: a juxtaposition intended to illustrate how the presence of Indigenous bodies on the ground in both of these artworks evokes the genocide of Indigenous populations. *Moema* depicts the death of the Indigenous character Moema, who drowns while trying to follow her lover, Diogo Álvares Correia (Caramuru), as he returns to Portugal. This theme, drawn from the epic poem *Caramuru* (1781) by Santa Rita Durão, belongs to the tradition of Indianist Romanticism. In the painting, Meirelles portrays Moema’s body in a sensual pose on the shore, her hair spread across the sand, evoking the European tradition of the female nude. The painting merges the period’s fascination with sensuality with the romanticized view of Indigenous peoples, highlighting the tensions between eroticism and the violent legacies of colonization.

It could also be inferred that *Natureza Morta 1* prefigures the Jaguar-Shaman – Baniwa’s now well-known caped and masked performing persona, which is based on the kind of shaman that his people consider to be the most skillful and highly trained of all (Wright 2013). In fact, artists and shamans have comparable roles (Lagrou and Van Velthem 2018); by making the invisible visible, they both teach us to perceive what is not immediately apparent or evident. Baniwa (2017) explains that shamans act as translators between realms of the cosmos, serving the purpose of transmitting knowledge, feelings, and experiences related to all areas of life, including ethics, relationships, day-to-day activities, hunting, fishing, and so on. Similarly to artists, he says, shamans have a visual, performative, and musical discourse. The role of Indigenous artists who circulate in urban settings, therefore, would be to act as intercultural mediators for the non-Indigenous who are not familiar with the extensive understanding of the cosmos that shamanic thinking and practices access.

Baniwa resorts to Western technology and media, including digital drawing and image editing applications, as present-day methods to oppose modern hegemonic narratives about Indigenous peoples. He believes that learning how to use these instruments is vital to mobilizing them as weapons for resistance as opposed to alienation. As Baniwa emphasized in an interview, the main point of becoming familiar with these tools has to do with activating Indigenous memories that were not exactly “erased”, but “buried” (Queiroz and Viana 2021: 258): it would be more precise to say that they “were buried, and not erased, because they still exist, like underground rivers in large cities. All they need is a little moisture to grow anew. Mem-

ories just need to be activated in order to resurface” (Queiroz and Viana 2021: 258). This serves as a reminder that the ecosystems that make up the region that became known as the Amazon were not a pristine wilderness when Europeans started to explore them around 500 years ago. Indeed, contrary to the construction of Edenic discourses around these ecosystems, as well as the prevailing ignorance around their anthropogenic character (Robbins 2004), evidence emerging from archaeology and Indigenous history demonstrates that parts of these ecosystems were densely inhabited prior to colonial invasion. As these studies show, Indigenous peoples have been altering and managing the region in various ways for millennia, establishing complex settlements and clusters of settlements (Neves 2022; Heckenberger 2003).

Natureza Morta 1 gives contour to that which has been cut from the canvas of history. It educates by offering a vantage point from which to reflect on what is lacking, while simultaneously highlighting what persists: the social underpinnings that enable structural violence against Indigenous people and continued attacks on the Amazon – acts of state-sanctioned, deliberate amnesia that have historically legitimized invasion, displacement, land control, and genocide. Nevertheless, it also creates a space of imaginative possibility and critical thinking from which to disrupt capitalism’s necropolitical logic. As the shaman’s rattle keeps shaking, it counteracts the logic that insists on “driving the cattle through”. It keeps shaking and challenging the burying of Indigenous peoples and their place-based knowledge systems by colonial modernity. Even as we face seemingly irreparable socio-environmental disaster, it keeps shaking – reminding us that it remains possible to honor other time scales, legacies of survival and commitments to futurity that inhabit the skin of the Earth.

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Tamya añanku (Rain Ants)

María Fernanda Troya



Kuai Shen, *Tejido social 2. Puente viviente creado por hormigas de la lluvia*, 2022. Digital photography, from *Rain Ants: Territorial Weavers of Kawsak Sacha*, project presented at the 14th Havana Biennial, 2022.

Spectacular Images of Devastation

Images have always been part of our relationship with the world, but it is only with their technical reproducibility (Benjamin 2003) that they have become objects of consumption in themselves. Both Debord (1996) and Baudrillard (1981) have reflected on the effects of the image as spectacle, merchandise, and simulation in an era of massification and ubiquity of visual media. Today, as West argues, images act as *commodities* that incite us to imagine the better lives that seem to be possible thanks to this “spectacular economy” (2015). The agendas of organizations linked to environmentalism also make use of such images as *virtual commodities* (Brockington, Duffy, and Igoe 2008: 191–193, emphasis added; see also Boström and Uggla 2016). This constitutes a “Spectacle of Nature” for global consumption (Brockington, Duffy, and Igoe 2008: 194–195), functioning within what Tsing calls “spectacular accumulation” in which ideas and images are used to mobilize resources (2004: 195–196). This “global economy of images and signs” is essential, argue the authors, for the consolidation of what they call *mainstream conservation* (Brockington, Duffy, and Igoe 2008: 197, emphasis added).

Some images that appear to “denounce” the destruction of ecosystems and the pollution of water sources, such as the iconic photograph of the polar bear on melting ice or the equally iconic aerial image of Amazonian deforestation, may denounce and raise awareness, but they may also serve the logic of the spectacular economy mentioned above. (West 2015) However, environmental images also promote critical positions when they are appropriated and reinterpreted, for example, by social movements or socially engaged artists.

Rain Ants in Sarayaku: What the Images “Want”

Ecuadorian artist Kuai Shen has been working on the *sociality* of ants for over a decade, and his most recent work focuses on the rain ants of the Ecuadorian Amazon. Shen explores the social forms of these invertebrates in their relationship with human communities – in this case, the Kichwa people of Sarayaku – through multispecies ethnography (see Kirksey and Helmreich 2010). For the Sarayaku, this particular type of ant is known as *rain herald*, that is, the animal who announces the arrival of rain.

The photograph featured here evokes the joint “work” of ants to build bridges using their own intertwined bodies. Rain ants

are territorial weavers that announce the arrival of rain, clean homes of unwanted animals, and in dreams become political messengers of border conflicts. They use their invertebrate bodies as material to weave shelters, clinging to any irregularity

in the jungle terrain and creating living bridges to facilitate passage over water. (Kuai Shen 2023)

Thus, Shen aims to *decolonize* the common association of ants with the military (ants as “army”) and replace it with an imaginary of *non-human social communities* in which invertebrates, in Sarayaku cosmology, are “entangled in sociopolitical narratives, generating intertwined ecological effects and meteorological messages” (Shen 2022: 2). Quite the opposite of what Brockington, Duffy, and Igoe claim in relation to the images used by conventional environmentalism in which an imaginary of nature as something “separate and prior to humanity” predominates (2008:193). This critique of anthropocentrism is expressed in the question posed by Anna Tsing, “what gave us the crazy idea that sociality was limited to humans?” when interdependencies between species are necessary for life, which forces us to think about *social relations* in a broader way (Haraway, Tsing, and Mitman 2019: 13–14).

The image and the work from which it stems imply a call for a reformulation of humanity, departing from the diagnosis of “an ontological crisis, insofar as the relationship between humanity and the world, humanity and nature, humanity and the set of non-human worlds, deserves an urgent review and transmutation” (Monfrinotti 2020: 94).

The Concept of the Anthropocene: What It Reveals, What It Hides

According to Jason Moore, the discourse of the Anthropocene derives from Cartesian philosophy, which enabled the earlier development of modern Western subjectivity and the sciences by placing Humanity *outside of* Nature; the capital letters serve to highlight what the author calls “real abstractions,” that is, categories that have the capacity to intervene and transform when understood as “realities” from places of power (Moore 2017: 11–14). This binary division would lay the foundations of capitalism understood as a “peculiar kind of civilization” (Moore 2017: 600). Moore demonstrates how, since the sixteenth-century conquest and colonization of the Americas, among other processes, capitalism was built on the expulsion of many humans – such as the majority of women, Afro-descendants, and Amerindian peoples – from their homes and territories and even from *Humanity* itself (2017: 600).

Furthermore, this exploitation of human labor described by Moore as “cheap labor” but also the production of “cheap nature” repeatedly stripped of value as the basis for the colonial empires’ capitalist accumulation. This *cheapening* devalued the work not only of many humans, but also of animals, soils, forests, and other elements of extra-human nature (2017: 600). Moore thus considers that the most appropriate term to designate the era in which humans have irremediably contributed to the destruction of the environment would be *Capitalocene*, term coined by Andreas Malm

and later appropriated by Donna Haraway, among others. This term focuses on the processes of dispossession, exploitation, and accumulation that entail an “ontology of Society and Nature that assigns value to some work, and some lives, while excluding the vast majority” (Moore 2017: 600). Haraway, for example, notes that the term *Plantationocene* emerged to rhetorically include large-scale agriculture based on “slave labor – and other forms of exploitation” (2016: 18), built on a system of *multispecies forced labor* that included humans (Haraway, Tsing, and Mitman 2019: 5–6). Therefore, following Jason Moore, we must consider the possibility of emancipating *all life*, and to do so, we must first understand how capitalism is embedded in the “web of life” (2017: 599).

Anthropocene and Capitalocene from Latin America and the Amazon

The “anthropogenic turn” has been criticized for promoting the idea that humanity, in an *undifferentiated way*, is responsible for climate change – what Monfrinotti calls an “anthropocentric flattening” (2020: 92) – and for centering its narrative on readings from the Global North, ignoring other ways that humans interpret or interact with the world (Ulloa 2017). A critical reading of the concept is thus required (Estenssoro 2021).

If certain discourses and images around the Anthropocene can be understood as new ways of thinking about the planet as a space of governance (Bonneuil and Fressoz 2013: 63), these criticisms prove particularly pertinent for the Amazonian territories. There, decisions are disputed at geopolitical and geostrategic levels with respect to who is responsible for the care of a region seen as a “lung” for all humanity. This tension becomes evident in the exploitation of Amazonian resources under the banner of state sovereignty, with the pendulum effect of resorting to the idea – useful for other agendas no less dangerous at the political level – that “the Amazon belongs to everyone,” thus legitimizing the intervention of organizations and states from the Global North in its environmental and economic management.

In both cases, nature is understood as *the other* of culture. This binary division has been questioned by authors such as Viveiros de Castro (2010) and Descola (2012), both Amazonian anthropologists. Yet the contributions to the debate around the Anthropocene from Latin America have yet to be recognized because, as Ulloa (2017: 64) states:

This implies a repositioning of an Anglo-Eurocentric episteme grouped in the rethinking of duality, which generates a new configuration of the geopolitics of knowledge production in which modern thought appears as the center of the cause, but also the solution, insofar as it proposes its own reconfiguration.

Furthermore, we must not forget that in Latin America, socio-environmental problems have long been included on the agendas of Indigenous and peasant militancy and resistance, linked to dynamics of identity and knowledge production from other matrices, for example *Sumak Kawsay* and *Suma Qamaña* from the Quechua and Aymara Andean worlds.

The Task of Images

According to Ulloa, the Anthropocene debate does not discriminate between identities, relationships, or cultural constructions of territory, also excluding other thought frameworks and cosmologies that involve alternative ways of relating to the non-human (2017: 65). Haraway hereby draws attention to the need to find more collaborative and decolonial ways of addressing the problem, inviting us to learn from indigenous peoples (Haraway, Tsing, and Mitman 2019: 4).

Kuai Shen's work makes visible what is absent from mainstream debate on the Anthropocene: the knowledge of Indigenous cosmologies and the necessary *interdependence* of species. It also illustrates how the *relationality* of the human and the non-human (Escobar 2016) contrasts with the relentless capitalist accumulation based on the plundering of territories, the exploitation of resources and "cheap labor" of humans and non-humans, including that of animals, plants, microorganisms, machines, and images. Indeed, for Bonneuil and Fressoz, the discourse of the Anthropocene is a "hegemonic system for representing the world"; they warn of the need to nuance this "official narrative" to prevent it from becoming "the legitimate philosophy of a new technocratic and market-oriented geopower" (2013: 64–65).

Certainly, any narrative that attempts to explain the multiple contemporary environmental crises involves the production of imaginaries and concrete images. The use that is made of these, as we have seen, can leave intact the colonial, racist, and patriarchal matrix that has given rise to such crises. This leads us to the questioning of those "visions" promoted by images of the Anthropocene that Moore also refers to as *vistas* (2017: 600). In this regard, the question is, as Mitchell (2014) asks, what do images *want*? Here, images are understood as *subaltern* agents insofar as they are *exploited* and are in a position of weakness, "made to say" many things but not allowed to *speak for themselves*, even as they not only mediate but also co-constitute the environment in which we live (Mitchell 2005).

If images not only represent but also "reproduce the material world according to ways that they imagine it to be" (Brockington, Duffy, and Igoe 2008: 193), Kuai Shen's photograph of ant sociality produces new – multispecies – ways of understanding/imagining that world from the Amazon rainforest.

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Illegal Dredges in the Yanomami Area

Hernán Lopez Piñeyro



Claudia Andujar, *Transbordadores ilegales en el área yanomami* (1989). Analogue photograph.

Claudia Andujar is recognized for her photography with the Yanomami, an Indigenous people living in the border area between the Brazilian states of Roraima and Amazonas and between the countries of Brazil and Venezuela. Andujar's journalistic, ethnographic and artistic work began in the 1970s and has continued in the decades since. Her production is often divided into three stages: a first stage characterized by documentary and journalistic-style images created during her long stays in the area; a second defined by her activism around the Yanomami's right to health; and a third in which the artist returns to work on photographs from previous decades (having accumulated more than 15,000 negatives during her stays in the Amazon), utilizing new post-production techniques that allow her to achieve more complex compositions and greater aesthetic experimentation. In the images from this last stage, Andujar accentuates her cosmogonic interpretation of the

Yanomami's situation and the global ecological context, evident in the increasing threat that puts at risk the survival of this Indigenous group and the environment it inhabits (Schøllhammer 2016: 50).

These distinctions, although not the subject of this entry, are questionable insofar as there is a very thin and sometimes non-existent thread that separates a "journalistic" photograph from an "artistic" one. Beyond such attempts at categorization, it is notable that throughout Andujar's career, what has prevailed is an interest in the Yanomami people, with whom she shares a close relationship, and in their environment. This can be seen in exhibitions of her work from the 1980s on. For example, *Genocide Yanomami, Morte no Brasil*, an installation developed at the Museum of Art of São Paulo in 1988, projected photographs taken in the 1970s onto concave mirrors. In the exhibition *Na sombra das luzes*, included in the XXIV São Paulo International Biennial (1998), the artist displayed horizontal enlargements of her Yanomami portraits on curved panels that intensified their visual impact. And for the group exhibition *Yanomami, Spirit of the Forest*, held in 2003 at the Fondation Cartier in Paris, Andujar participated with photographic images printed on superimposed transparent supports. These and many other shows attest to her commitment to presenting this subject matter in innovative formats and contexts.

Maria Fernanda Piderit (2020) uses the term *photographic ethnopoetics* to refer to Andujar's extensive work with the Yanomami community. According to Piderit, it is

an ethnographic image that moves from hard information to dissonant dialogue, from univocal objectivity to the multiplicity of personal interpretations, from the ethnographic record to the mythopoetic suggestion of gesture; a photograph that is not only a useful object – faithful reproduction of a certain perception of reality – for anthropology, mere illustration, but a photograph that becomes an image in itself, with all the expressive, sensitive and magical possibilities that it can contain as an autonomous image rather than as a photocopy of supposedly objective data.

In what follows, I explore a photograph from 1989: *Transboradores ilegales en el área yanomami* (Illegal Dredges in the Yanomami Area). This image, with its warm colors and strong chiaroscuros, presents a nocturnal river landscape featuring small rafts whose human occupants are barely distinguishable, a river, and a group of leafy trees entangled on the banks. On the aquatic and vegetal surfaces of the forest there is a reflection that suggests gold. The light – minimal, to be sure, takes shape in the grainy texture, a product of high ISO values and long exposure time.

The title of the photograph adds clarification: the image is taken in the Yanomami area and what I called "rafts" are actually "illegal dredges". The tiny people seen on the dredges are *garimpeiros*: prospectors of gold and precious stones, whose activity expanded greatly (and with disastrous consequences) at the end of the 1970s after the the Radar in the Amazon (Radam)-Brazil Project carried out

aerial mapping in the area. The following sections examine these issues in greater detail.

The Forest

One might attempt here a sort of overview, with pretensions of objectivity, of the Yanomami area captured by a white eye (or by a machine) for another white eye (or for another devastation machine). Such a text would surely begin by saying that the tropical forest space occupies approximately 230,000 square kilometers, that it has such-and-such animal and plant species and that, according to anthropologists, there is a link of one kind or another between the Yanomami culture and the space they inhabit. However, what is of interest here is, rather, to strive for an approach to the forest as it is conceived and lived by the Yanomami. Such an effort – with better results in some cases than in others – also appears in many of Andujar’s photographs.

According to this worldview, the forest is a living being made up of countless existences that are also alive and in constant renewal. It is a superorganism guarded by the *xapiri*, invisible guardian spirits who are the sufficient reason and efficient cause of that which we call nature, *Hutugara* in Yanomami (Viveiros de Castro 2015: 13). The *xapiri* move by floating in the air from their mirrors to protect the forest. They work tirelessly to prevent chaos.

According to the renowned Yanomami shaman and spokesman Davi Kopenawa, for them – and for other inhabitants of the Amazon – the forest is composed of an ecology that includes us (as humans) as well as the *xapiri*, the animals, the trees, the rivers, the fish, the sky, the rain, the sun, and the wind. “It’s everything that was born in the forest, far from the whites; everything that still has no fences” (Kopenawa and Bruce 2015: 480).

This multiplicity of corporeal and spiritual beings that intra-act to make up the forest appears, I argue, in several of Andujar’s photographs. The concept of “intra-action” differs from the notion of “interaction”; while the latter presumes the prior existence of independent entities, the latter does not, and thus reconfigures the fundamental ideas of classical ontology such as causality, agency, space, time, matter, discourse, responsibility, and accountability (Barad 2012: 32). Many examples from Andujar’s work could be mentioned, but there is one that is particularly interesting: *Amazônia*, the book of photographs that Andujar published with the Praxis publishing house together with George Love in 1978, and whose texts were censored by the Brazilian civic-military dictatorship. The images, largely abstract (or almost), lead us to a certain Amazonian “atmosphere”. Many of the photographs in the book are reproduced more than once in the same way or with certain alterations: mirrors, rotations, new framing and light interventions, etc. Some are aerial shots in which

clouds, water, rocks, soil, and treetops appear. In others, perhaps more interestingly, the camera is immersed in the jungle as if it were one more existing being – as, strictly speaking, it is. The horizontal point of view permits the appearance of a micro scale that also includes humans.

The intensity, the light, and the vision of absolute clarity that is seen in many of the images in this book would seem to be related to the closeness of the spirits. In her study of photographic books of the Amazon, Albuquerque de Moraes (2022) argues that the lines of white light assume such density and thickness that they become true luminescent masses that voraciously invade and cut through the composition, such that the people portrayed are barely distinguishable. The *xapiris* seem to assume, in many of the photographs of *Amazônia*, a quality of super-visibility, something that the Yanomami are convinced of and that the white, Western worldview denies (Viveiros de Castro 2006).

The Garimpeiros

The forest is alive, but it is also in danger.

It will only die if the whites insist on destroying it. If they succeed, the rivers will disappear underground, the soil will fall apart, the trees will wither, and the rocks will crack from the heat. The parched earth will be empty and silent. Spirits *xapiri*, who descend from the mountains to play in the forest in their mirrors, will flee far away. Their parents, the shamans, will no longer be able to call them and make them dance to protect us. They will not be able to conjure up the epidemic smoke that devours us. They will no longer be able to contain evil beings, who will turn the forest into chaos. Then we will die, one after the other, both the whites and us. All shamans will eventually die. When none of them are left alive to support the sky, it will collapse. (Kopenawa and Bruce 2015: 6)

The forest will be dark and cold forever. We humans will become its enemies and giant wasps will attack us. Both the fragility of forest life and the destruction caused by the whites appear in Andujar's photographs. In this case, *Illegal Dredges in the Yanomami Area* puts the spotlight on the issue of gold extractivism.

Towards the end of the 1980s, a date that not coincidentally coincides with that of the images of Andujar, the lands of the Yanomami were invaded by garimpeiros who, in Kopenawa's words, "frantically searched for an evil thing that we had never heard of and whose name they repeated endlessly: gold" (2015: 335). The invasion had serious consequences: epidemics of diseases hitherto unknown to the community that caused the death of a significant part of its population, rapes, murders, poisoning of rivers, exhaustion of hunting, and destruction of the material and moral bases of

the Indigenous economy. The gold extraction system, as Viveiros de Castro points out (2015: 22), is inscribed within the geopolitical tactics of colonialism and has all its characteristics. The dirty work is done by desperate and violent men, but those who finance, control, and, of course, profit, are far away and protected by numerous and diverse immunities.

“The garimpeiros have really soiled the forest. It became impregnated with epidemic smoke and we were caught in a death frenzy,” explains Kopenawa (2015: 224–225) in the first person. They dig everywhere, turning rivers into mud puddles filled with motor oil, mercury and garbage. Malaria, tuberculosis, measles were not the only consequences; the forest also lost its silence, and was filled with unnecessary words from the whites. Thought became entangled with the words of the colonizers. The forest and rivers suffered and got sick. The *xapiri* observe what happens. They return from their distant flights crying their wounds in their songs. Often, says the shaman, “I have heard their voices wailing as they carried my image far and wide to show me the devastation.” (Kopenawa and Bruce 2015: 328). These spirits are, in turn, those who fill the Yanomami with courage to fight against the whites who want to turn the forest into cities, who do not know that the real owners of the water are the spirits of rays, electric eels, anacondas, caimans and porpoises.

The garimpeiros are true earth eaters; they are ready to devour the forest. They think they are all-powerful, but their thoughts are full of darkness.

All of them will die bitten by snakes fallen from the sky or devoured by jaguars, which will appear everywhere in the forest. Their planes will crash into the big trees. The soil will be absorbed and begin to rot. Then it will gradually be covered by the waters, and humans will become others, as happened in the beginning. (Kopenawa and Bruce 2015: 493)

Imagining the Amazon

At the origin of extractivism in the Amazon there are images. In fact, images were its condition of possibility. Between 1970 and 1985, the Ministry of Mining and Energy developed the Radar in the Amazon (RADAM) Brazil Project, which consisted of obtaining radar images captured from airplanes. These photographs allowed for a broad study of the forest and its possible extractivist uses.

Unlike the RADAM Project’s photos, Andujar’s *Illegal Dredges in the Yanomami Area* does not make the territory available; it is not a map whose accuracy enables strategies of devastation. On the contrary, it is a photograph that resists the fall of the sky, the darkening and the cooling of the forest. According to Kopenawa, “white people don’t know how to dream, that’s why they destroy the forest in this way.” (2015: 531).

Perhaps this image is a counterexample or, better, an observation of the *xapiri* that serves to fill the Yanomami and their allies with courage.

Translated by Omar Sierra Cháves and revised by Elissa Rashkin.

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Visual Representations in Mesoamerica from 1950 to the Present

Mural with Graffiti at the Miguel Alemán Dam

Elissa Rashkin and Homero Ávila Landa



Homero Ávila Landa, Graffiti on *La vida primitiva en la cuenca del Papaloapan*, Miguel Alemán Dam, Temascal, Oaxaca, Mexico (2010). Mural by the Taller de Integración Plástica (1955).
Source: authors' collection.

The Papaloapan watershed is a fluvial system that crosses a vast region located in the present-day states of Oaxaca, Puebla, and Veracruz before flowing into the Gulf of Mexico. Its principal river is the Papaloapan (“River of Butterflies”), but as a hydrological zone, it includes various tributaries and intersects diverse microregions and ecosystems (Arriola Molina 1992; Montero García, Osorio, and Toro 2011). Historically subject to flood cycles due to hurricanes and abundant rainfall, the upper Papaloapan was the site of one of the largest national public works projects of the twentieth century: the Miguel Alemán Dam built under the direction of the

Papaloapan Commission, an entity organized in 1947 to promote development in the region. With this project, President Miguel Alemán Valdés, a native of the area, sought to bring progress and prosperity to the “backward” communities of this part of southeastern Mexico. However, in displacing entire populations and promoting monocrop agriculture, ranching, and industry as substitutes for traditional forms of production, the Commission embodied a vision of modernity based on the vertical imposition of knowledge, values, and intervention on social and ecosystemic levels that, as a whole, make up part of what we know as the Anthropocene.

Work on the dam finished in 1955 and was celebrated with a monument that still exists at one extreme of the town of Temascal (sometimes spelled *Temazcal*), a launching point for rowboats engaged in transportation and recreation in the dam’s reservoir. On a pyramidal structure that resembles a lookout stands a huge statue of President Alemán, portrayed heroically as a benefactor of the people. The decoration of the interior of the monument’s base was commissioned to a group of painters from the Taller de Integración Plástica (Workshop of Plastic Integration, TIP), a Mexico City organization: Héctor Cruz García, Guillermo Monroy Becerril, Héctor Ayala, Héctor Martínez Arteché, Fermín Rojas and Javier Íñiguez. On a surface of more than 200 square meters, they painted *La vida primitiva en la cuenca del Papaloapan* (*Primitive Life in the Papaloapan Basin*), using a narrative format characteristic of Mexican muralism to tell the story of the region’s peoples in their evolution from the remote past to the present-day moment of modernizing redemption.

Of high artistic quality, the mural group communicates in images the ideological vision that the Papaloapan Commission promoted in numerous reports and documents, including an extensive photographic register. Yet, unlike many twentieth-century murals located in cities such as Mexico City or Guadalajara – where names such as Diego Rivera and José Clemente Orozco carry enough weight to ensure the conservation of their work as cultural heritage – those adorning the monument in Temascal exhibit neither maintenance nor information for potentially curious visitors. A commemorative plaque omits the authorship of both mural and statue, thus reinforcing the idea of Alemán as author and architect of the project (cf. Secretaría de Recursos Hidráulicos 1949). Set in a landscape that embodies the mid-twentieth century notion of development, the dam, the monument and the mural, along with roads, industry and residential construction, formed a whole: the style and substance of a profound regional modernization.

In 2017, in the regional newspaper *El Piñero de la Cuenca*, Roberto Polo Hernández lamented that “neglect of the monument and civil indiscipline have led to graffiti that decomposes the murals, to the point that, in some of the illustrations, it is impossible to make out the [original] pictorial narrative.” Here, rather than characterize the graffiti as vandalism – an undisciplined assault on art understood as to be intrinsically valuable –, we propose that it can be read as a *counter-discourse*, one that is unofficial and that lacks an ideological impetus like that which inspired

the original paintings. The photograph taken by Homero Ávila Landa in 2010, showing the mural as a site appropriated by graffiti artists, functions as a palimpsest: a pictorial document that retains traces of earlier inscriptions, whose layers reveal a complicated panorama of the Anthropocene in the Mesoamerican region from the mid-twentieth century to the present. The image interrogates the immobility and legitimacy of discourses imposed from above, designed to transmit a single meaning. It also brings into play the global language of graffiti and its appropriation of any available surface to bring itself into being.

The Papaloapan Commission

The Papaloapan hydraulic system is made up of multiple fluvial bodies – the San Juan, Obispo, Tesechoacán, Lalana, Santo Domingo and Tonto – that converge in the River of Butterflies. Construction of the dam took place on the Tonto tributary, amid growing concern regarding effects of the flooding that has historically characterized the Papaloapan basin. As José Velasco Toro and Gustavo Ramos Pérez (2011) observe, for centuries, the region's inhabitants had maintained a worldview based on a balance between humans and nature; the elevated design of their homes, for example, reflected precautions against flooding, which itself was important for agriculture due to the rich silt deposited on farmland (25; cf. García Acosta 2019: 244). The force of water, although fearsome, did not take the people by surprise, but rather was part of a cycle that conditioned their material and spiritual lifeways. However, with changes in land use, especially the introduction of sugar cane and all that it implied in terms of population growth and infrastructure, flooding became harmful. Successive records of disasters mark the advance of the Anthropocene and its vision of the river as an enemy to be defeated and controlled (Velasco Toro and Ramos Pérez 2011: 38).

The nineteenth century saw the arrival of the railroad, the expansion of cattle ranching, and the rise of agro-industrial farming (cotton, bananas, and pineapple) in the region (Thiébaud 2013; Vargas Montero 2005). By the 1940s, accelerated urbanization and a national push toward industrialization created a need for electricity on a much larger scale than had existed until then. Hydroelectric projects emerged as an ideal solution; their construction would address the developmental needs of regions seen as backward, saving rural populations from their ancestral impotence before the forces of nature and providing them with the benefits of modernization. The great flood of 1944, caused by a hurricane, provided the occasion to put this type of policy into practice. The Papaloapan Commission was thus established, with various objectives: centrally, to study the zone and to carry out public works (CODEPAP 2003). Construction on the dam began in 1949 and concluded in 1955, resulting in

“a great reservoir of 50,000 hectares with a capacity of nine billion cubic meters of water” (González Soriano 2012: 399).

One of the project’s consequences was the displacement of local villages, inhabited by Indigenous people of diverse ethnicities, speakers of nine different languages. For the Commission, these population groups, far from being bearers of linguistic and cultural wealth, represented a problem to be solved. A report entitled *Planificación integral de la Cuenca del Papaloapan* (Integral Planning of the Papaloapan Basin, Secretaría de Recursos Hidráulicos 1962) illustrates this perspective. In its first pages its authors identify a need to put an end to the isolation produced by, in their words, a “cultural lag” evidenced in the lack of knowledge of Spanish and the persistence of “primitive” agricultural techniques, economies, and lifeways, as well as a “lack of hygienic habits” that exacerbated the unsanitary conditions endemic in tropical zones (Secretaría de Recursos Hidráulicos 1962: 5). One of the Commission’s goals was thus “Improvement in sanitation and education, permitting the most backward inhabitants in particular to evolve” (5). The report discusses the need to integrate these inhabitants into national life, and points to “the tribal localism produced by the diversity of languages” as “a serious impediment to access to Western culture” (15). Such observations clearly reflect a longstanding colonial and paternalistic vision. At the same time, they serve to justify the development that the report upholds, including industrialization and settlement of the zone by mestizos from other parts of the republic, all based on rational use of resources and national economic integration.

From the Commission’s perspective, the problems faced by local communities, from caciquism and land hoarding to epidemics associated with inadequate sanitation and lack of access to potable water, would be solved by the new construction. This developmentalist ideology was the rationale for the *relocation* of the population: in reality, a euphemism for ethnocidal displacement.

The lower Mazatec region was the most affected by these projects, as 55,000 hectares were flooded and 22,000 Mazatec villagers relocated. A third of this population remained in the sites to which they had been sent, while the rest preferred to return to the dam zone and begin a difficult process of readaptation to the new ecological, economic, and social conditions of their ancient habitat. (Villagómez Velázquez 2011: 167–168)

Beyond its perceived benefits such as the mitigation of flood danger, irrigation of arable lands, and the production of electricity, the dam emerged as a symbol of modernity, comparable in its didactic function to another project of the Alemán regime: the giant *Ciudad Universitaria* (University City) campus, then under construction in the nation’s capital. The Alemán monument in Temascal reinforces this vision. The statue exalts the presidential figure via an aesthetic of the oversized

that recalls the socialist realism of Stalin's USSR, while underneath, the murals represent the region's history as a movement from primitive darkness to the light conferred by the largesse of the State.

La vida primitiva and the Anthropocene as Redeemer

El Taller de Integración Plástica, founded in 1948 by José Chávez Morado and supported by the National Institute of Fine Arts, was a project that reflected changes in Mexican muralism at mid-century. When the mural movement began in the 1920s, the first spaces to be painted were repurposed colonial buildings. The muralists used techniques such as fresco and encaustic and found inspiration in pre-Hispanic painting and the legacy of European religious art. However, the new structures built by postrevolutionary governments required painting techniques suitable to exteriors that would resist exposure to the elements. David Alfaro Siqueiros had already experimented with industrial materials since the 1930s in his work abroad (1977: 303–316); the murals of the TIP would further this experimentation.

The TIP's ideal, as its name suggests, was to unify architecture, sculpture and painting from the beginning. In Mexico City, this vision was implemented in the building of the Ministry of Communications and Public Works and in the Ciudad Universitaria, both powerful symbols of the Alemán government's modernizing project. Taller members created mosaics of glass and stone, and in painting, utilized substances such as pyroxylin, vinylite, polystyrene, and acrylic (Guadarrama 2001–2002). According to Héctor Cruz García's website, synthetic acrylic resin was first used in *La vida primitiva* (Muralism n.d.). It is worth noting that the introduction of chemical formulas mirrored the industrial dynamism celebrated in the mural, which, at the same time, relied on narrative strategies already prepared in the work of Rivera and other artists.

In the immense literature dedicated to the Papaloapan Commission in fields such as anthropology, engineering, agronomy, and medicine, the Temascal murals have received little attention. In a 2012 presentation, researcher Fabricio González Soriano shared valuable excerpts of his conversations with the painter Cruz García regarding the project. The interview emphasizes the artists' intention to contrast past and present, wild nature and that dominated by technology; it also confirms the role of scientists in advising the artists and introducing them to local communities. The population's histories were translated into images; the visual narrative "emerged from what they told us about the tragedies, the floods, the deaths, of the cattle that are seen here, no?" (González Soriano 2012: 405). Cruz García recalled that residents observed the mural's creation with interest. He also highlighted the leadership of engineer Raúl Sandoval, a Commission official who promoted such cultural activities as a means of connecting the engineering projects and the population (406).

The mural represents the benefits of modernization in various aspects of collective life. Its overarching theme is the transition from the chaotic jungle, storms, and flooding to the rational use of water as energy and for the irrigation of orderly and abundant crops. But this transition is also shown as a transition from semi-nakedness to the use of contemporary clothing associated with clearly delineated workplace functions (such as those of industrial worker, farmer or scientist); from “primitive” religion to modern education, science, and medicine; from chaos to order, from obscurantism to enlightenment. Importantly, in the “before” section of the mural, the vegetation is not endemic, but rather includes bananas and sugar cane, crops cultivated by the population. Which is to say, the “primitive” landscape is clearly anthropogenic. However, an agglomeration of leaves, trunks, and roots fills every space and suggests a dark and uncontrolled jungle environment, evidenced by the chaos of the swollen river that sweeps away horses and spits out the cadavers of humans and other animals. In contrast, in the “after” section, sugar cane still predominates, but is now orderly. Its proximity to the dam suggests improvements in terms of irrigation, while the presence of factories, towers, tanks, and even a train in motion supports the idea of comprehensive territorial planning. Progress (productive, sanitary, cultural) is thus represented in the murals as the result of order and of technology applied to development.

It is relevant to note that this postrevolutionary work does not depict social conflict, but rather, and exclusively, the drama of man against nature. From our present-day perspective, imbued by a consciousness of the Anthropocene as a transformation that has been devastating in many ways, it is easy enough to identify the exaggerated faith in science and the racism and colonialism – latent and overt – of a project that sought to carry out social as well as mechanical and environmental engineering. Today, the cult of the State appears out of place in a region battered by poverty, by violence exacerbated by the drug war proclaimed by former president Felipe Calderón (2006–2012, the period in which the photo was taken), and by large scale migration of people under conditions of extreme vulnerability. Soil exhaustion and dependence on international markets for products like sugar and coffee – with their cycles of boom and crisis – are part of a scenario that little resembles the Commission’s vision of a region harmoniously integrated into a prosperous nation.

Despite the later construction of a second dam (the Miguel de la Madrid or Cerro de Oro, inaugurated in 1988) and similar attentions from the government, the Papaloapan basin, like many other regions, suffers from droughts, floods, and the growing problem of pollution. Official studies have found in the Papaloapan river “generalized pollution [...] as the principal problem, the presence of agrochemicals, heavy metals and coliform bacteria,” along with urban growth and a concomitant rise in waste of all kinds, including raw sewage (Yolanda 2023). For the reporter who goes by Yolanda in *El Piñero de la Cuenca*, the intensification of industry, government indifference or complicity, and the fact that society sees the river as “an

enormous garbage dump” (2023) have produced an environmental crisis with grave implications for human health and that of the territory.

The Graffiti Counter-Discourse

Another local media outlet, El Blog Chinaco, associates the monument and its murals with “the broken promises of the Revolution”; its author Peña Castro, asks, “What happened to the revolutionary dream of the High Temple of Temazcal’s altars? They [sic] fell apart with the lack of schools and training; they evaporated in the light of the zero benefits received by the Indians from the generation of electricity” (Peña Castro 2014). The writer lays the blame with neoliberal governments and their “lack of commitment to the nature that generates wealth or to the people that live there” (2014). However, the problem is by no means specific to the Mexican government. Rather, the case of the Papaloapan basin exemplifies development as promoted under the capitalist world-system, with its utilitarian vision of the relation between human beings and nature, presently experienced as a situation at the breaking point.

Regarding this crisis, what thoughts might have run through the minds of those individuals who, in the twenty-first century, painted their “tags” over the walls decorated by the TIP seven decades earlier? Due to the anonymous nature of graffiti, their voices are an absent presence in this story. Their messages, visible in the photograph, are not those of protest as such; they do not offer critiques of the modernizing project of yesteryear, nor of the contemporary disaster, nor of the artistic style that, by the 1960s, was already in decline due to the emerging aesthetic and political interests of new postrevolutionary generations. Indeed, in June 1966, in the Ciudad Universitaria, another monumental statue of Alemán Valdés was blown up, breaking off its head (Palacios 2020). This iconoclastic act is revived, in part, by the graffiti at Temascal.

The graffiti’s counter-discourse is not in its content, or rather, its form is its content: the appropriation of a *site of memory* (Nora 1989) for other ends, perhaps for a moment of leisure, certainly for self-expression. It speaks, no doubt, to the insufficiency of nationalist myth and ideology; but also, to the rejection of the vision of socio-environmental control promoted in the murals, given that the promised prosperity never came to the region. While its detractors see graffiti as *visual pollution*, the pollution of the water, its chronic shortages, and its infrequent but disastrous excesses are large-scale problems that infiltrate the landscape without disturbing the view. Moreover, although graffiti is usually considered an urban cultural phenomenon, its presence in rural zones demonstrates the continuous expansion of materials, aesthetics, and cultural discourses conditioned by markets and by borders, but, at the same time, irreducible to these factors. In this regard, without con-

stituting ecocriticism as such, its practice exemplifies the Anthropocene's reach as a symbolic system.

In the palimpsest of the Miguel Alemán dam, which first disguises displacement, ethnocide, and interventionism as progress, and later interrupts this discourse with codified figures created with cans of industrial spray paint, we can observe its saturation, but also its limits. While the TIP mural is the residue of a nation-state that sought to perpetuate itself in time and symbolically ratify its achievements, the graffiti is the trace of an emergent sensibility that, without crafting a direct critique, nonetheless warns of other ends. The insolvency of falsely unifying discourses opens the way to the global and generational form of cultural expression that encounters, on these once-sacred surfaces, the opportunity to inscribe its existence outside of any official master narrative. Instead, it affirms itself through the play of anonymity and the disguised signature of the graffiti artist, whose "scribblings" produce another presence, one that questions (however indirectly) history, memory, ritual. Here, the Anthropocene reveals itself as multiscale: a system within which may emerge voices, acts, works, and gestures that suggest, without concretion, a critique of the environmental violence (Picado-Umaña, Urquijo Torres, and Méndez Rojas 2024: 387) implied in the megaprojects of the nationalist and industrial past.

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View of the Yuhualixqui Volcano

Peter Krieger



Alejandra Trujillo, *View of the Yuhualixqui volcano* (2017). Photograph. Source: Private collection.

This amateur photograph depicts the accelerated erosion of the monogenetic volcano Yuhualixqui (which had only one eruption and is now extinct), in the Iztapalapa municipality (now borough) of Mexico City. Taken by Alejandra Trujillo in 2017, the photo allows us to reflect on the geological force exerted by humans in the Anthropocene era. From a terrestrial perspective, the view of the volcano is framed by informally constructed, unfinished and partially graffitied structures. The only sign of human life in this scene of abandonment are two small figures: a worker on a ladder fixing a cable and a collaborator serving as spectator. The road leading to the volcano exhibits an irregular, dusty surface; on its banks there are discarded tires, garbage, and wild vegetation. Other constructions, as well as piles of ground ma-

terial such as gravel and sand, can be seen in the middle of the road. These, typical of informal construction zones, serve as contrasting scenery elements that capture the monumental and sublime scale of the volcano, which rises to a height of 2,420 meters above sea level amid the megalopolitan landscape.

The photograph centers on the volcano's geological substance from the Cenozoic era some 66 million years ago, framed by and contrasting with the anthropogenic traces from the twentieth century to the present. Thus, two temporalities collide: an archaic time, that of the Earth's history, determined by volcanic eruptions; and the recent period of hyper-urbanization. Moreover, it is also a snapshot of a gigantic process by which terrestrial elements are transformed into building materials. Both the production of building materials and their widespread and excessive use for habitat configuration are undeniable signs of the Anthropocene, manifesting themselves as deep physical alterations of the Earth's crust.

This photograph opens a space for introspection – what Aby Warburg calls, in German, *Denkraum* (1932: 491) – regarding the unsustainable management of planet Earth in the twenty-first century. It is one among countless images, in many different formats and media, that demonstrate the new geological era of the Anthropocene, introduced by Paul Crutzen in 2002. Although the International Commission on Stratigraphy, after two decades of controversial debates, does not recognize this new era – formally, we are still living in the Holocene –, the scientific definition of the Anthropocene (Zalasiewicz, Waters, and Williams 2019) has been conceptually supported by philosophy and the humanities in general (Latour 2017; Scherer and Renn 2015), and especially by the so-called “visual studies” (*Bildwissenschaft*) that explore the epistemic, discursive, illustrative and manipulative potential of images (Krieger 2022). The analysis of the Anthropocene's visibility is part of the “geological turn” (Ellsworth and Kruse 2013), proclaimed in 2013, which posits that the understanding of geological phenomena is not reducible to geological research per se, but is a subject matter for the humanities, the arts, and (landscape) architecture among other disciplines.

The photographic image of Yuhualixqui reveals the critical management of geo-landscapes in the Anthropocene, in a representative area, the Basin of Mexico, where some of the 10,000 volcanoes of the transvolcanic belt between the Pacific and Atlantic oceans are located. The Basin of Mexico featured a very high degree of bio- and geodiversity, portrayed, for example, by nineteenth-century landscape painters Eugenio Landesio and José María Velasco (Ramírez 2017; Brownlee, Piccoli, and Uhlyarik 2015; Krieger 2012). However, with exponential population growth from the 1960s onwards, this watershed has suffered drastic soil alteration, sealed by a technomass of infrastructure, urbanization and industrialization. Extractivism continues to aggravate destructive development throughout the area.

The Yuhualixqui volcano, whose name means “round place,” is the most extreme case of deterioration at the Sierra de Santa Catarina (formerly called Sierra de

Ahuizotl) in the eastern part of Mexico City, legally declared an ecological conservation area in 1998. It is one of the seven monogenetic volcanoes of the Sierra that have suffered an overexploitation of *tezontle*, a volcanic tuff stone commonly used as construction material, as well as basalt and sand, mainly from the 1970s onwards. It is worth mentioning that the neighboring volcano of Xaltepec has also served as a supplier of *tezontle*. However, with the Great Acceleration of the mid-twentieth century, the impact of extractivism has generated more drastic morphological changes in the geo-landscapes, such as the loss of approximately 60 percent of the rocky substance of Yuhualixqui.

The extreme yet representative case of hyper-urbanization of the Mexico Basin provides visual evidence of unsustainable management of soil resources and, in particular, of the rocky substance (Krieger 2022). The accelerated erosion of the geomorphological configuration of a watershed, once praised by Alexander von Humboldt, is emerging as physical and visual evidence of the Anthropocene. The reference to Humboldt's work invokes the beginnings of "geo-aesthetics" (Krieger 2018): a conceptual heritage that links scientific investigations on geo-landscapes with aesthetic inquiry through the image, which serves as a catalyst for critical environmental knowledge (Humboldt 2019: 243), as exemplified here in the paradigmatic photograph of the Yuhualixqui volcano.

Through its composition, this amateur photograph highlights the use of the land for urban and industrial development, as the *de jure* preservation of the volcano's natural environment is challenged with a *de facto* destruction at an accelerated pace. Both the informal construction in the immediate surroundings and the macro-scale of the Mexican megalopolis embody the physical delimitation of the outstanding bio- and geo-diversity of the basin. The uncontrolled dynamics of development, both planned and informal, not only seal the volcanic rock soils, but also erode their three-dimensional articulation in the urban landscape. Considering the aforementioned figure regarding the loss of 60 percent of the Yuhualixqui's substance, a simple mathematical calculation allows us to foresee when this monument of geologic times will disappear forever.

The impact of mining and the irresponsible concept of energy are also present in this image. Although the importance of mining for human civilization since its beginnings is unquestionable, it is essential to note that the erosive, toxic, and thus destructive effects of extractivism have had a greater impact since the Great Acceleration – even when it is a "natural" earth material such as *tezontle* that is being extracted, and not a mineralogical one such as gold, silver, and other "rare earths" that are indispensable for the production of cell phones and screens. Although *tezontle* does not produce highly toxic effects, it is worth noting that the social energy to build a habitat in this area of the Sierra de Santa Catarina is nourished by a concept of energy and territorial resource exploitation that is anachronistic and even self-destructive: extractivism.

The case of Yuhualixqui shows, in a brutal way, the denial of bio- and geo-diversity in the overwhelming urban development of the Basin of Mexico. Such development is determined by the construction industry and the real estate speculation business, which includes the expansion of the ring of informal working-class *colonias* (urban neighborhoods). The encroachment of geophysical cores in the basin by seemingly haphazard construction, as recorded in the selected photograph, is a systemic routine with destructive effects, representing the Earth's irreversible damage in the Anthropocene era.

This type of unregulated development, visible in the photograph and omnipresent throughout Mexico City and adjacent urbanized areas, also increases local and global temperatures, as it generates heat bubbles that exacerbate the transformation of the Mexican *acuápolis* into a megalopolitan desert (Krieger 2021). Thus, the temperatures of this urban landscape vary between the environmental memory of the single eruption of the Yuhualixqui volcano – which at the time generated extreme heat waves in the micro-location –, the post-eruptive climatic readjustment, and the gradual warming towards the extreme of the closed megacity, with a rise in average temperatures.

A key factor in this process of erosion and self-destruction in a paradigmatic scenario of the Anthropocene like the Basin of Mexico is the irresponsible management of water from the time of the Spanish colonization, that is, for more than half a millennium (Zambrano 2019) and, unfortunately, to this day. The previous name of the zone, “Sierra de Ahuizotl,” referred to the amphibious animals of the former Iztapalapa peninsula; colonized and christianized as “Sierra de Santa Catarina,” it is the terrestrial materialization of this environmental process visible in the geological micro-location of the Yuhualixqui volcano.

The photograph in question is the representation of an environmental crime that is not only a local event, but in fact encompasses the global dimension of the Anthropocene. The image is a trace, a *pars pro toto* of many regions of the world where the negative impacts of the Anthropocene materialize. It is a crime scene whose visual configuration requires careful analysis.

Earlier in this text, I mentioned that, in the photo, the zone appears to be abandoned. The apparent abandonment is not accidental: the settlers who live at the foot of this volcano are involved in illegal enterprises and want to avoid public exposure, to the extent that they even threatened photographer Alejandra Trujillo when she began to document the site. The circumstances are as follows: In the mid-1980s, a company purchased the land from the government of Mexico City for tezontle extraction. After the ecological protection of the Sierra in 1998, this commercial exploitation turned into a lawsuit. To date there have been no consequences to this situation; an article published almost twenty years ago in the magazine *Teorema Ambiental* asserted that up to 100 trucks arrived every day to transport ground tezontle from the volcano to construction sites (Machorro 2006). A considerable part was taken to the

site of a new international airport in nearby Texcoco. Although the project was cancelled in 2019, its building materials were used in the construction of the runways of the Felipe Angeles International Airport, inaugurated in 2022. The transformation of volcanic matter and its transfer to different sites is an economic and political problem of the Anthropocene, thus its representation in this photo contains an inherent political iconography (Warnke 2013): from the alteration of the Earth in the Neolithic Revolution to the present day of the ongoing Great Acceleration, the anthropogenic erosion of soils and stony substance is a political issue, as Bruno Latour explains in his terrestrial manifesto (Latour 2017). Herein lies the relevance of aesthetic research in the debates on the Anthropocene: the image is not a mere illustration, but a means of sensory cognition (in aesthetics understood in the Aristotelian sense as *αἰσθησις* or *aisthesis*), a catalyst for geo-aesthetic research, and an instrument of environmental critique.

Translated by Luisa Raquel Ellermeier and revised by Elissa Rashkin.

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Dystopias

Mara Polgovsky Ezcurra



Photograph of the performance *Distopías* by Péndulo Cero (2020).

I.

At the foot of the beach, on the coast of Tijuana, Mexico, a tense, almost naked female body is turned towards the open sky, hips rising in an arc from head to toe, barely supported by unstable hands and a neck which seems to be strangled by her hair. The woman is the dancer Miroslava Wilson. She is dancing *Dystopias* (2020), a creation

of the Tijuana dance company *Péndulo Cero*. Wilson's tongue projects outward from two mute lips and an upturned face gazing into the distance at Tijuana, a city on the U.S.-Mexico border that one of its own natives, theorist Sayak Valencia, describes as the paradigm of "gore capitalism": "The joyful world of disenchantment," she writes. "The boundary, the perimeter. The edge of the world [...] Narcos. Machismo. The land of silicone. A factory of prostitute Barbies. High caliber weapons, laughter, cackling. *This is Tijuana*" (Valencia 2018). Wilson dances on the sand and is covered in it. The sea surrounds and frames the dance. It is a calm sea, but it spits out garbage. Its waves advance generously over the surface, leaving residues not of algae or shells but of plastic bottle caps, cables, cell phone chargers, and electronic waste. One of these cables has coiled around Wilson, like a cybernetic mollusk wishing to climb her. Once spliced into the living body, it cannot breathe, it does not move, it limits the possibilities of the dance.

In this dystopian scene, the garbage gives the image some color, the same color that motivated the initial consumption of the products that constitute it but did not stop their rapid disposal. They prolong the mercantilist illusion, but, already in pieces, they also reveal its fragility. Among them are leftover lids of plastic water bottles, ethernet cables that no longer transmit data at high speed, expired batteries. This is the matter and these are remains of a technological condition that does not stop renewing itself and does not stop dying, passing from usefulness to toxicity, from novelty to obsolescence. In their zombie, undead state, as researcher Jussi Parikka suggests (2015: 48), these waste materials are the new permanent inhabitants of the Tijuana beaches on the Pacific Ocean, a place where Wilson offers her body as a vector of a broader social malaise.

For decades Tijuana's beaches have been considered "unsanitary and highly polluted" (Estrada Milán and Escala Rabadán 2021: 227). The ethnographic work of Jesús Estrada Milán and Luis Escala Rabadán describes an environmental deterioration generated not only by urban tourism that regularly discards beer cans, plastic bottles, food, and other pollutants on the beach but also, on a larger scale, through the routine and unregulated discharge of untreated sewage into the sea. Water pollution in this border area has historical roots in rapid urbanization since the 1940s and the lack of basic infrastructure for environmental protection, especially in economically disadvantaged areas. While similar situations occur throughout Mexico, environmental degradation is exacerbated along the border by the challenges that binational cooperation can entail.

In 1990, the American Medical Association characterized the U.S.-Mexico border area as a "virtual cesspool and breeding ground for infectious diseases" largely due to the lack of systems to collect and treat wastewater in a context of intense activity by the maquiladora industry (cited by Allen 2020: 1). The Free Trade Agreement between Mexico, the United States and Canada (NAFTA), which came into force in 1994, led to the creation of a number of institutions that have addressed the issue, such as

the Border Environment Cooperation Commission (BECC) and the North American Commission for Environmental Cooperation (CEC). However, environmental improvement has not been substantial. Instead, repeated crises have shown, as Estrada and Escala write, that “even though geopolitical borders can control the crossing of people and goods, they cannot prevent the free flow of the sea” (2021: 227; see also Tapia Landeros and Garduño 2005). The increasingly perceptible environmental imbalances in the Anthropocene thus lead to a querying of the very foundations of the nation state: sovereignty and territory. As theorist Thom Kuelhs (1996: 44) posits, the repositioning of the human being in relation to nature implies rethinking the fundamental categories of politics, beginning with a reimagining of sovereignty based on the interaction between the human and the more-than-human, and continuing with the need to articulate a notion of territory capable of incorporating movements not regulated by the state. Movement as an ontology of human and more-than-human bodies is for Kuelhs an ecopolitical principle with enormous disruptive force; hence the importance of dance in reflecting upon our present.

II.

Let’s return to the image. The sky is plagued by clouds, projecting a murky, homogeneous light. Among the shades of blue, white, and gray that cover the scene, we see two more beings walking towards Wilson with their bodies completely covered by so-called “personal protective equipment”: blue gloves, a white overall that goes from head to ankles, and a mask. These faceless, genderless bodies, with barely a human form, contrast with Wilson’s nakedness and vulnerability: their gait is heavy, mechanical, and with their hands they articulate symbols that suggest the loss of speech, the mechanization of language into commands and signs. They are frontier-beings, as even the biochemistry of their bodies is defined by a geopolitical logic of exclusion, segregation, otherness, and distance. They yearn to stay apart from air, water, and land that have become toxic. Their own skin is not sufficient for survival, so they have erected a wall around it. The environment that gives them life, to which they belong, carries a deadly poison. The shell that protects them is made of the same plastic that torments Wilson, turning garbage not only into a threat but also into a possible refuge. In describing the biopolitics that these beings – and in fact all of us since the Covid pandemic – embody, Paul B. Preciado (2020) writes:

The body, your individual body, as a life space and as a network of power, as a center of production and of energy consumption, has become the new territory where the violent border politics that we have been designing and testing for years on “others” are now expressed, now taking the form of containment measures and

of a war against the virus. [...] And the border is forever tightening around you, pushing you ever closer to your body. [...] The new frontier is your epidermis.

The frontier-beings look at Wilson without seeing her. Lacking expression, they are the indifferent witnesses of her agonizing dance. They seem to embody everything that the dancer rejects with the viscerality of her movements. The symbols the frontier-beings articulate with their hands participate in a narrative incapable of being encoded by the convulsive female body. However, these frontier-beings are themselves barefoot; with every step their naked feet trail over the toxic sand. The relationship between these two apparently opposing subjectivities is thus exceeded by the air, the sea, and the polluted sand that envelop and penetrate them. Either exposed or covered, both share an affect of unease and convey with their appearance apocalyptic possibility. Regardless of the gestures of either body, their mere humanity implies an “environmental social debt” (Woolaston 2022: 36). The anthropocenic character of the image is marked by the legibility of the relationship between these beings, on the one hand, and the earth system in which their *pathos* is inscribed, on the other.

It is worth mentioning that the theatricalized, danced, and framed image is not postulated as impossible on the plane of the real. The virtuality of impending environmental decay is now indistinguishable from the most sober realism, as suggested by writer Kim Stanley Robinson (2018). Likewise, and perhaps contradictorily, staging disaster as a form of environmental denunciation rather than strict documentation questions a regime of truth that over the years has instrumentalized nature to the point of bringing it to its current state of crisis. Let us recall that realism, as an aesthetic and philosophical tradition, proposes that the objects one perceives, represents, or describes, with their observed characteristics, exist beyond our perceptions and beyond the strategies we use to approach them. In the Anthropocene, the foundational distinction of realism between subject and object, nature and culture loses validity – if it ever had any – to the extent that the human being becomes the transforming agent of the object/natural world s/he inhabits (Latour 2014: 14; see also Herrnstein Smith 2018: 107).

Perhaps unsurprisingly, *Dystopias* was created in 2020, in the midst of the Covid pandemic. As part of a series of works seeking to think the future from the perspective of movement and taking Tijuana as a historical laboratory, it postulates the Anthropocene not only as a theme but as a somatic charge, a spatial scale, and a set of ecological processes that, in addition to metaphorizing social transformations, are intrinsically linked to them. The work concludes with words of George Orwell (1949), from his novel 1984: “If you want a picture of the future, imagine a boot stamping on a human face – for ever.”

Translated by Eric Rummelhoff and revised by Omar Sierra Cháves.

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Chinampa Zone

Lizzet Luna Gamboa



Lizzet Luna Gamboa, *Zona chinampera, Xochimilco*, photograph of student collective intervention (2022). Source: Photograph by the Author.

Lake Xochimilco, located in the south of Mexico City, is a zone that features unique biological and cultural wealth. Its inhabitants utilize an ancient system of eco-agricultural cultivation called *chinampas*, which depend directly on wetlands. This important ecosystem faces severe pollution problems derived from human activity; today, collective, interdisciplinary restoration efforts are urgently needed to reverse its degradation.

The image presented here is part of a project that emerged at the crossroads of education, art, and science. Its aim was to use art to visibilize bioremediation techniques for the recovery of water and soil in Xochimilco, in the form of a visual intervention. The photographs seen within the image were taken in 2022 by high school students from campuses 1 and 6 of the National Preparatory School of the National Autonomous University of Mexico, under the direction of Lizzet Luna Gamboa, in the context of the Covid pandemic.

The intervention was carried out with photographs placed on a chinampa, a pre-Hispanic eco-agricultural cultivation method that does not depend on artificial irrigation or rainwater. Its structure is an islet built in a wetland and supported by the roots of the *ahuejotes* (*Salix bonplandiana*), creating a symbiotic balance between the weeds and the mud used in its construction. The photos depict ice spheres that each contain a piece of citrus fruit, a symbolic element that references the role of accelerated composting processes in the recovery of saline soils. The images were printed on edible sugar paper that dissolves on contact with water.

Interdependence

The power of the image comes from the collective; it emerges from a process of interrelation between generations and diverse areas of knowledge that intertwine to generate work that seeks to activate the imagination as a political act, to think and reinvent the horizon from another perspective. The catastrophic approach to the environment shown by the mass media offers a narrow scenario that suffocates future horizons and prevents us from developing other scenarios of action in the face of this emergency. The image derived from this project, in contrast, serves as a symbolic catalyst, proposing an alternative way of addressing the students' immediate environment and that of the community of Xochimilco, allowing them to be active agents of a change of perspectives, in response to environmental crises.

Water, as an element of the image, works to create an ephemeral sphere. The ice sculpture goes through different states until it becomes a compact, frozen body with a citrus fruit in its innards. The translucent material allows light rays to pass through the shape, generating various sensations in these aqueous bodies whose specific form depends on the freezing process, the type of water used and the citrus inside, as well as the selection of orange, lemon, or grapefruit segments or peels.

The sphere created with water is also a process of interaction with this crucial element for life and ecosystems. Its shape suggests a planet, a raindrop, a molecule, or an atom. This geometric figure, in which all directions are balanced without privileging anyone over the others, is made up of forces that are evenly distributed in a stable manner.

The ice spheres were photographed by each student and printed on water soluble, biodegradable paper. During the intervention, children and adult inhabitants of Xochimilco prepared the chinampa, using a cultivation method known as *chapín*, or small squares traced in the mud, in each of which a hole is made to manually and carefully deposit each seed (Representación AGRICULTURA Ciudad de México 2022). In this case, the planting was done with bioremediation techniques for soil rehabilitation and accelerated composting proposed by Dr. Refugio Rodríguez Vázquez, of the *Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional* (Center for Research and Advanced Studies of the National Polytechnic Institute, Cinvestav), who heads the *Centro de Educación Chinampera* (Chinampera Education Center, CEDUCHI). Next, the children placed a photograph on the surface of each *chapín*-square. The result was a collaborative and awareness-raising process, as well as a symbolic action visibilizing bioremediation technique in Xochimilco.

In the Flower Garden

Xochimilco is a lake area whose name in Nahuatl means “in the flower garden.” It is a complex and interdependent socio-ecosystem, a place of historical tradition, with an extensive network of canals. Since pre-Hispanic times, when the Xochimilcas used the chinampa method of cultivation, it has been known for providing food resources to its inhabitants and surrounding populations (Alatríste 2005). In 1987, UNESCO declared Xochimilco a natural and cultural World Heritage site (Mendoza Correa 2018).

Living soil and lakes are systemic worlds of self-regulating living processes. They contain organisms that interact, nourish, fortify, or sicken them, as an active medium of coexistence. In Xochimilco, water and land work symbiotically. However, the chinampas have been impacted by the continuous degradation of the wetland, while crops are affected by high levels of salinization in the soil, which causes major deterioration in the fragile ecosystem stressed and violated by the activities it must sustain.

The changes are drastic due to the desiccation accelerated by the irrational exploitation of hydraulic resources, in addition to environmental deterioration in water, soils, and sediments caused by inadequate agricultural practices, as well as by the conversion of land to housing, industrial, commercial, and public service use, whose poor management of liquid and solid waste directly affects the channel (2018). Irri-

gation water is contaminated with organic compounds: endocrine disruptors, pesticides, hormones, plasticizers (Díaz-Torres et al. 2013, cited in CEDUCHI n.d.) and pathogenic microorganisms such as *Escherichia coli*, fecal coliforms, helminth eggs, *Cyclospora cayetanensis*, etc. (Rodríguez-Vázquez 2018, cited in CEDUCHI n.d.).

Bioremediation

This visual intervention used images to generate a symbolic reinvention based on interaction with the ecosystem in Xochimilco. The exercise involved a process of conscious self-subjectivation that also connected participants to bioremediation processes. As part of a high school photography class, the project included activities designed to raise awareness of the current ecological crisis, generating bridges between the environment, art, and science. It was divided into four phases: the first three focused on creating visibility, familiarization, and awareness of water at a general, city-wide level, while the fourth phase took place in Xochimilco.

The class also included guest lectures. The idea of visually intervening the chinampa came from the lecture by researcher Refugio Rodríguez Vázquez, who works with bioremediation techniques that use microorganisms and plants to reduce the concentration or toxicity of a pollutant in an ecosystem, thus recovering and restoring its conditions as close to their original state as possible.

The sustainable technologies developed by Rodríguez include the treatment of water and soil for the chinampera zone or other agricultural soils, the rehabilitation of agricultural soil with citrus residues as one of the pesticide-removal materials, materials to decrease salinity and alkalinity of the soil, and accelerated composting with eolic aeration using orange peel as a component. “With the application of this technology, organochlorine pesticides and pathogenic microorganisms have also been reduced” (Rodríguez-Vázquez 2018, cited in CEDUCHI n.d.). The report further explains:

The composting time is 2 months, no leachates are produced, the temperature does not increase to values of 65 C, but it is sanitized with the organic acids produced during composting due to the microorganisms that grow on the orange peels; continuous turning is not required since it is aerated with an eolic system. In 2 months, the compost is ready for use without microbial count, with a carbon-nitrogen count of less than 15. (CEDUCHI n.d.)

Inspired by these ideas, citrus fruits were used as a binding element for the artistic activation that was carried out in a chinampa located in front of the Urrutia Bridge pier in Xochimilco. On this site, belonging to the farmer Pompilio Guerra, accelerated composting was applied as a bioremediation process. The *chapín* technique

was also used, starting from a seedbed built directly on the ground in a rectangular shape, over which a layer of mud from the canal was spread to form the *chapines*. A photo of one of the spheres was placed on each box, with a small hole in the center to accommodate the future germination of the seedling. The image was absorbed into the earth over the following days due to its biodegradable materiality.

As this brief description demonstrates, the project that emerged from a high school art class served as a detonator of ideas and ways of fomenting sensitivity and connection with the environment, art, science, ecosystems, and also subjectivity, in the hopes of increasing ecological awareness and generating change in patterns of coexistence.

Inclusions

In his book *Inclusiones. Estética del Capitaloceno* (2021), Nicolas Borriaud interrogates the opaque and always problematic core of issues that we sometimes summarize with the word “contemporaneity,” amid ecological catastrophe and, recently, pandemic. To this end, he focuses on the aesthetic and ethical-political dimensions of artistic practices that he calls inclusive, open to plurivalent exchanges between humans and non-humans (Stegmayer 2021). In the face of the challenges and paradoxes imposed by the Anthropocene, it is necessary to question knowledge, in order to link different types of knowledge and produce a coactive system that will, in turn, provide new generations with tools for thinking. Another aim is to generate change in our ways of thinking and acting with ecosystems, with relationships in the visible world, the molecular world, the computer world, so that these changes may spread through and permeate their surroundings.

Imagining an aesthetics of the Anthropocene implies being outside the logic of binarisms, where figure and background are diluted in a more complex metamorphosis of thoughts and formations. Such a process can make visible what is not perceptible to the human eye; the manifestations of the invisible arise in correlations generated from the complexity of interactions between areas and forms that do not solidify in their own specialized realm of knowledge but rather expand to create bridges and converge in diverse areas of expanded fields, generating new consciousness.

Félix Guattari, in his essay *The Three Ecologies* (1996), warns about ecological imbalance as a self-destructive catastrophe and compares it to the progressive deterioration of human lifestyles, both individual and collective. As a response to this crisis, he proposes a political, social, and cultural revolution that reorients the objectives of material and immaterial production, where the relations between forces manifest from the perceptible to the molecular. Guattari also introduces the concept of “ecosophy,” an ethical-political articulation with three ecological turns: that

of the environment, that of social relations and that of human subjectivity. He proposes the fashioning of practices that reinvent individual and group ways of being, in which existential mutations aim at the essence of subjectivity. This reinvention must be sustained by a profound and responsible change on the part of every human being who inhabits the planet, creating processes of interrelation between different geographical areas, generations and contexts.

One of the challenges of the Anthropocene is to mitigate the catastrophe to which the planet has been subjected. The paradox is that we continue to rely on means derived from capitalism, which reduce human thought to the brutal consumerism, generating a voracious extractivism that is indifferent to all forms of non-human life. Meanwhile, young people, mentally molded by mass media's production of collective subjectivity, also strive to develop their own uniqueness. In this context, the artistic process can serve as a vehicle with which to generate new subjectivities in tandem with the mapping of existential territories.

Young people must be provided with tools that allow them to become aware of the profound change in the structures of their own subjectivities, in confrontation with the challenging world that they have inherited. They themselves must learn to revalue the subjugation of the image and of ideas to which they are exposed through their technological devices. Indeed, all of us must create new mental, visual, ecological, and knowledge ecosystems, to respect our own ways of inhabiting, to understand symbiosis, and to appreciate the convergences that are generated, from this reading to the molecules that remediate ecosystems. Visible and non-visible, tangible and non-tangible worlds must be reinvented.

Translated by Omar Sierra Cháves and revised by Elissa Rashkin.

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Visual Representations in the Caribbean from 1950 to the Present

The Oil Christ

Lukas Becker



El Cristo Petrolero, Barrancabermeja, Colombia (1995). Source: Author's collection.

A rebirth accompanied by fire and smoke. A statue of Jesus made of metal tubes rises out of a lagoon, framed in the background by an imposing oil refinery. This is the *Cristo Petrolero*, the Oil Christ of Barrancabermeja, Colombia's major oil city and refining center and a key site in the country's modern history. Visually striking, it stands as a symbol of this town's industry, religion, environment, and culture.

When the monument was inaugurated in 1995, it promised to be a sight of splendor. Twenty-six meters tall and weighing 46 tons, the statue was built under the supervision of Fernando Fernández, an employee of Colombia's state oil company, Ecopetrol, with the help of a variety of skilled laborers, all pitching in without receiving any additional compensation. At night, the monument was lit up in bright colors while from its arms, through twelve tubes representing the number of Christ's apostles, water rushed out from the lagoon below, providing both a visual spectacle and

an important service of cycling and oxygenating this body of water devastated by the nearby refinery. The statue was the brainchild of Gabriel Ojeda, a catholic priest and an important figure in the local parish, an institution that served as a powerful force of progressive social action. In times of political turmoil, this monument to the reincarnation of Christ seemed to be a symbol of union between industry and faith, between progress and tradition (Cadena 2011; Suárez Salazar 2012; Relatos 2022).

However, these aspirations stand in stark contrast to the harsh reality of its current condition and the region's history, for what it also represents is a landscape radically undone by the extraction of raw materials – above all petroleum – and built on the extermination of the region's Indigenous inhabitants. Fierce power struggles ensued as the supposed fuel of prosperity and development often brought violence, pollution, and misery. The statue is thus a contested symbol, representing the oil industry's visible impact on the environment and a society shaped by petro-modernity. It stands as a reminder of the complicated and intermingled circumstances that gave rise to the era now called the Anthropocene.

Within the global system of trade and energy production that arose through the dynamics of imperialism and global capitalism in the nineteenth century, the region surrounding Barrancabermeja was transformed into a sacrifice zone, an area exploited for the benefit of far-off places, primarily in the Global North. Indeed, the imposition of petroleum extraction would bring with it the wholesale transformation of human-nature relations and radically change the present ecosystem in a process Santiago calls an “ecology of oil” (2006).

The oil industry, however, emerged on prepared ground. Throughout the nineteenth century, trails had been opened for the extraction of materials such as quinine or rubber. This was backed by the military might of the Colombian state which sought to incorporate the forest-covered lowlands along the crucial Magdalena River, seen as an impediment to industrial civilization of temperate land. The state-sanctioned campaigns of violence and territorial appropriation would, in a matter of decades, exterminate the local Yarequíes Indigenous population, who had for centuries resisted Spanish colonial rule (Delgado Gaona 2022; Vega Cantor, Nuñez Espinel, and Pereira Fernández 2009).

The town of Barrancabermeja, or Barranca, properly came into being when a large area of oil-rich land was granted as a concession to Standard Oil of New Jersey, which ran this territory through a company called Tropical Oil from 1922–1951, after which operations passed to Ecopetrol. The imposition of this new extractive order was not only motivated by the immense profits that oil seemed to promise, but also due to its particular allure as a symbol of modernity and development. To the lawmakers of central Colombia, the exploitation of fossil fuel promised to speed up the nation's progress and overcome the environments of the tropical lowlands, perceived as being filled with dangerous diseases, lazy peasants, and a slow lifestyle

not apt for the civilization represented by industrial modernity (Vega Cantor, Nuñez Espinel, and Pereira Fernández 2009: 28–40).

Thus Barranca became an oil town, a place at the origins of the natural resource powering the great acceleration of industrial power that has made humanity into the decisive geological actor at the heart of the Anthropocene (McNeill and Engelke 2016). Within this framework, the oil town plays a key part. It sits at the site of tangible materiality, where oil is transformed from a natural resource into the symbolically loaded commodity powering all aspects of modern life. It is here that the power dynamics of oil extraction first intermingle with human social relations to produce the cultural and economic entanglements that, in turn, sit at the heart of the radical transformation of our planet that the extraction, consumption, and emission of this ubiquitous fossil fuel bring with them.

Places like Barrancabermeja became sites of a strict territorial governance. The globalized modernity entailed by oil extraction is often locked away behind fences protected by armed guards. The authority to radically transform nature and the supposed control over the environment was initially reserved for the foreign manager class, who lived in U.S.-style bungalows surrounded by English lawns, while on the other side of the fence, local workers lived in ramshackle huts at the mercy of the hot and humid environment, plagued by pollution and diseases such as malaria (Santiago 2006; Vega Cantor, Nuñez Espinel, and Pereira Fernández 2009a).

But the exposure to this harsh regime of energy production would also engender a particular kind of resistance. Using the materiality of oil to their advantage, the affected sectors of the region – from oil workers to prostitutes, farmers, and the impoverished multitudes that had come to Barranca in search of a better life – disputed the control over petroleum and the wealth and damages it created, in a series of strikes and disruptions. These social actors used their power over the flow of this vital energy source to enact their own demands, even taking complete political control over the city for a few days following a massive strike in 1948. This action would prove crucial to the end of Tropical Oil's activity in the region and the creation of the state oil company Ecopetrol, leaving behind a legacy of popular struggle for energy sovereignty (Vega Cantor, Nuñez Espinel, and Pereira Fernández 2009a: 308–329).

This was part of a larger movement across Latin America and, indeed, the Global South, that projected onto a national oil industry the ambitions of sovereignty and independence. Across the world, oil infrastructure became synonymous with progress and development and, particularly in Latin America, the triumphant associations with oil became engrained in popular culture. Striking murals and an official holiday marked the nationalization of oil in Mexico in 1938, while pageants in Brazil, Colombia, and Argentina, elected “oil queens”, showcasing the popular appeal of this fossil resource (Benavides and Durán 2017: 70; Crespo 2005).

Though a lofty ideal, the reality of popular sovereignty over energy often fell short, the problems of unequal access to the prosperity created and the destructive

nature as the sacrifice zone remained unchanged. In Barranca, throughout the second half of the twentieth century, this proved to be a continuous point of contention, providing a rallying ground for a diversity of social movements ranging from the traditional labor unions to women's rights groups and peasant organizations, all staking their claim to the benefits that oil was supposed to bring (Van Isschot 2015).

Within this network of popular struggle, the Catholic church came to play an important role. The church had been a marginal force in the establishment of the city and later, around the strike of 1948, had played a repressive role in cracking down on labor activity and sponsoring a form of highly conservative and clerical unionism, the second half of the twentieth century saw it pursue increasingly progressive action. Highly influenced by liberation theology and the nascent human rights movement, the church became a key actor in the network of civil activism, giving room for important women's organizations such as the crucial *Organización Femenina Popular* to emerge and spearheading a variety of peace initiatives in a region increasingly battered by Colombia's vicious armed conflict. As the fierce labor struggles in Barranca were overtaken by a wave of paramilitary violence from the early 1990s onwards, the Cristo Petrolero came to stand as a hopeful sign of peace, while also showcasing the legacy of cultural entanglements within the city and honoring the wide-reaching alliances forged through the extraction of oil (Gill 2016).

The statue of the petroleum Christ arose within a contentious social landscape, a constant field of tension between oil's supposed development promise and the reality on the ground, and its current state seems to speak to this. In a recent visit to the site, the monument's builder decried the lamentable state of his creation, whose splendid light and water installations no longer work due to the equipment having been stolen (Relatos 2022).

This dire state seems quite apt when consider the statue's physical environment. The Ciénaga Miramar, the body of water surrounding the statue, has, like all of the region's crucial aquifers, experienced radical changes to its natural state due to pollution and the drastic reduction of local animal species that was unable to cope with the toxicity surrounding oil extraction. Water has, throughout the city's history, always been a crucial point of contention, powering many major civil strikes such as one in 1975 (Vega Cantor, Nuñez Espinel, and Pereira Fernández 2009b: 316–324; Garzón and Gutiérrez 2013). While on the ground prepared by oil extraction new industries such as cattle ranching and palm oil plantations take hold, pushed by the violence and dispossession imposed by paramilitary groups, the region continues to follow the conflictive and destructive path set by fossil developmentalism (CREDHOS 2021).

With all of this in mind, the monument also raises the question of the legacy of places like Barranca: the legacy of oil. Though currently, across the globe, petroleum remains at the forefront of national and private development agendas, eventually this activity will stop as the world develops and converts to new energy sources to

satisfy the endless demand created by the fossil age of the Great Acceleration. While the statue was consciously conceived to serve as a monument different from the old oil machinery slowly rusting away in the nearby oil museum run by Ecopetrol, its current state seems to have condemned it to suffer the same fate (Cadena 2011). This decay speaks to the reality of the Anthropocene, to an environment irrevocably changed, poisoned, and destroyed by the practices of humanity seeking mastery over nature.

However, as the statue seems poised to become nothing more than a relic of a bygone age, it is worth remembering that it arose, too, out of the legacy of social dispute over the management of oil resources, a legacy of a movement of popular sovereignty that sought more democratic control over energy. Just as it represents the profoundly intermingled relationship between humanity and oil, it also speaks to the contentious nature of this relationship and humanity's connection to the natural world. It is a worthwhile symbol to remember that the road to the Anthropocene was a result of human decisions and agency, both to bring about this age of disastrous natural change, but also to challenge it and consider alternative pathways. What the *Cristo Petrolero* statue reminds us is that there is always a social and cultural component to our relationship to energy sources and the natural world, one that needs to be kept in mind if we are to understand these places shaped so drastically by the extraction of oil.

What the legacy of oil will be in this place remains to be seen. For now, the relationship with oil seems to remain strongly embedded in the environment, social relations, and the lived reality of the inhabitants of Barrancabermeja, even if the place itself is in danger of being forgotten, left with the lasting damages of an environment remade at humanity's command while its interests have moved on to the next energy source. Perhaps the proud and combative social traditions of this city will endure the end of the resource that forged them, perhaps one day the statue of Christ will become the symbol of a new relationship between Barranca and its natural surroundings; perhaps even a return of the slow, low-energy lifestyle once so decried by Colombia's elites. Whatever this legacy may be, what is certain is that it will be decided on the ground by the people that make and inhabit this environment of the modern age.

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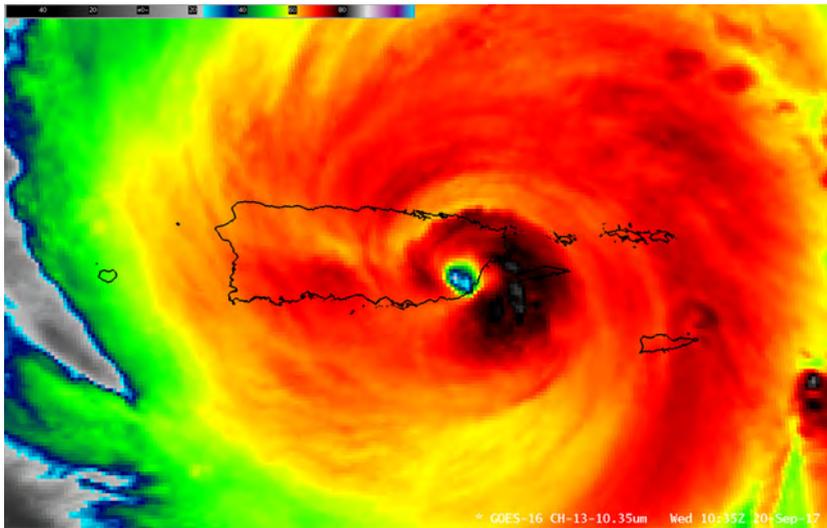
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GOES16 Satellite Colorized-Infrared Image of Hurricane Maria over Puerto Rico

Eduardo Santana Castellón and Ariel E. Lugo



GOES-16 Clean Window Infrared (10.3 μm) Color Enhanced Imagery of Puerto Rico taken on September 20, 2017, by the Suomi NPP Geostationary Operational Environmental Satellite.

Source: Cooperative Institute for Meteorological Satellite Studies (CIMSS) (2017).

The impressive satellite “photograph” shows the distinct eye of hurricane María making landfall in 2017 in southeastern Puerto Rico. It depicts one of the major Caribbean “natural” disasters since the 1950s, and is an example of a technological “God’s-eye view” of a planetary meteorological-ecological phenomenon. It shows hurricane María over the Caribbean islands of Puerto Rico, Vieques, Culebra, Mona, the U.S. Virgin Islands, and the British Virgin Islands. The hurricane’s eye – just 16 to 18 km across – is ringed by a black and red eyewall where sustained winds peaked at near 250 km per hour (155 mph), while progressively warmer orange-to-green bands mark decreasing wind speeds in the outer circulation. Beyond the eyewall the

storm's hurricane-force wind diameter was roughly 150 km, expanding to approximately 500 km for tropical-storm conditions that enveloped Puerto Rico and the Virgin-Leeward Island arc.

In the Anthropocene machine-mediated satellite images have increased the scale of our understanding of reality and the speed/distance/volume of our communication and transfer of information. This has profoundly reshaped and accelerated social, political, military, and scientific processes by collapsing previously existing physical, temporal, and perceptual distances. As an agent of political and epistemological transformations, machine-mediated reality is also a dangerous tool. AI-assisted imaging has led to the automation of decision-making, distancing human ethical judgement involving war, surveillance, and data interpretation (Virilio 1998). It has eliminated the distinction between the visible and invisible by revealing reality beyond what the human senses can perceive, taking us deeper into the realms of subatomic particles, beyond our solar system, further into the past and further into the future. Moreover, it has allowed us to study and understand our planet from the point of view of social-ecological-technological systems (SETS), which is the viewpoint we use in this contribution (Redman and Miller 2015). SETS encompasses ecosystems defined by the flow and accumulation of energy through the medium of organisms, built infrastructure, institutions, and their environment (Lugo 2020).

As biologists born and raised in the Caribbean, our analysis includes a local perspective as well as a long-term evolutionary context. The Caribbean region has witnessed at least three massive life-changing anthropogenic transformations. The gigantic Chicxulub meteorite smashed into what is today the Yucatan peninsula some 66 million years ago, changing the world's climate and causing the extinction of most dinosaurs (only the dinosaurs we now call birds survived). The tectonic closing of the Central American land bridge some 3 to 6 million years ago caused "The Great American Interchange" that triggered the extinction of almost all species of marsupial mammals in the Neotropical Biogeographic Region (South America) due to the invasion of placental mammals from the Nearctic (North America). The third major transformation began in the fifteenth and sixteenth centuries when the Spaniards (Columbus, Urdaneta, and López de Legaspi) found the way for western Europeans to reach the Americas and Asia by sailing west, and found the return route to Mexico from the Philippines by way of the coriolis-induced Japanese Kuroshio Current. Land, climate, and gold in the Caribbean, sugarcane from Asia, enslaved people from Africa, colonial enslavers from Europe, and sailing-ship technologies were primary components of the birth of economic globalization that grew out of the demand for labor-intensive cash crops and minerals. This sparked the "Great Columbian Exchange" of plants, animals, and diseases that progressively homogenized worldwide species composition and killed by way of epidemics over half of the Indigenous population in the Americas. Although the arrival of non-

European humans to Caribbean Islands about 10 thousand years ago also caused the extinctions of wild species, it was not at the scale in which modern humans are causing them in the Anthropocene.

The Caribbean archipelago comprises over 7,000 islands and cays covering 230,000 km² of land within 4 million km² of ocean water. It has a total population of over 43 million people, of which 60 to 70 percent is urban, approaching 100 percent in some islands (CEPAL 2024; Worldometer 2024). The socio-political processes that create the conditions of the Anthropocene, and the way societies respond to the stressors produced by it, depend on various factors, including each country's ecological context and its mechanisms of decision-making and social participation based on politics and science. It is thus relevant to recognize that the Caribbean region has the highest number (twenty) of "non-self-governing" or "dependent territories" in the world, a product of European colonialism (United Nations 2024b). Depending on the colonial power that possesses them, these territories or colonies with official names like "associated free state," "special municipality," "country within a kingdom," "overseas department," and "overseas collectivity" have different levels of self-government or freedom to make decisions. The size, isolation, and colonial status of the island-states of the Caribbean create vulnerabilities and impose limitations on aspirations and on how to respond to newly emergent conditions of the Anthropocene (United Nations 2024a). These social, political, and ecological characteristics make the Caribbean an ideal region to assess the interplay between anthropogenic disturbance and socio-political and ecological responses of the emerging ecosystems. These Caribbean ecosystems have experienced multiple cycles of non-anthropogenic and anthropogenic deforestation and recovery at various landscape scales (Lugo and Helmer 2004).

The Caribbean is one of the thirty-six biodiversity hotspots on the planet. It is one of the world's centers of endemic biodiversity and harbors one of the highest numbers (1,618) of plant and animal species considered at global risk of extinction (CANARI 2019; Class Earth 2024). Endemic animal species on islands tend to be more vulnerable to extinction due to their small and restricted populations, specialized habitat needs, limited genetic diversity, and low defenses against predators and competitors (almost half of world island-endemic birds extant in 1500 CE are extinct or threatened with extinction). Islands cover only 5.3 percent of the Earth's surface; but they contribute 61 percent of all extinct species and 37 percent of all critically endangered species in the world (Tershy et al. 2015; Matthews et al. 2022). It is also an important region in the ecology and survival of terrestrial and oceanic migratory animals (CANARI 2019).

Having one of the highest concentrations of converging tectonic plates in the world, earthquakes and volcanic eruptions are common in the Caribbean. The moisture-carrying northeast trade winds create wet and dry seasons, and by interacting with the insular mountains, produce rainfall gradients as well as rain-shadow dry

zones. Cold fronts create storm surges and warm oceans create hurricanes, making the Caribbean one of the three regions of the world with the highest frequency of hurricanes. Its biota has evolved and adapted to respond to these recurring, powerful, and common non-anthropogenic stressors.

Although the Caribbean's contribution to worldwide greenhouse gas emissions is minuscule, its nations will unjustly suffer a plethora of negative effects such as loss of coastal areas with sea level rises, droughts affecting agricultural and livestock production, and increasing human mortality due to heat (particularly nocturnal high temperatures) and other related factors. Hurricanes are by far the most common environmental disturbance that can become more harmful due to climate change. An increase in hurricane size and frequency due to climate change is uncertain. However, there is a high to medium probability of an increase in hurricane rainfall rates and floods, in the proportion and intensification speed of storms that reach very intense levels (Category 4 and 5), and in their destructive potential. (Knutson 2024; IPCC 2022; Valdivia and Antle 2023; WMO 2022)

Caribbean islands like Puerto Rico can play the role of the proverbial “canary in the coal mine” to study resilience and adaptability to large-scale disturbances and, moreover, to detect power imbalances which underlie the historic and current socio-political roots of the double Caribbean climate injustice: being significantly affected without bearing responsibility for causing climate change and for being maladapted to respond resiliently to the acceleration of the Anthropocene. Such was the case with hurricane María, which left no doubt that these Caribbean islands are SETS and that it is impossible to analyze its effects from the perspective of a single discipline. (Lugo 2019)

Following the hurricane, for example, water quality in estuaries declined because of technological failures in the social sector. When power was lost because of wind effects on the electric grid, water pumps failed, and the capacity to deal with sanitary and runoff waters was lost, resulting in the pollution of various aquatic systems. Similarly, technological failures associated with the power outages affected the social systems, which were unable to provide basic health services. This resulted in more deaths in the weeks following the hurricane than during the twenty-four hours in which hurricane-force winds and extreme rains affected the island.

The Puerto Rican government reported sixty-four deaths occurring during the hurricane. A more accurate estimate is that of the report made by George Washington University which documented 2,975 deaths, including those resulting from post-hurricane SETS effects. This represents over 60 per cent more deaths than those of Hurricane Katrina in the U.S. and is similar to those killed in New York City after the terrorist attack of September 11, 2001. Due to decades of dysfunctional institutional arrangements and corruption, the government lost the capacity to govern because it was isolated from most of the population. It had no communications or response capacities and no ability to monitor the toxic environment that resulted

from the power failures and the mixing of sanitary and runoff waters. In some instances, towns were isolated for months, and power generation was slow to recover.

While urban environments were paralyzed due to the loss of technology and interrupted transportation and communication, forests and other non-anthropogenic ecosystems quickly recovered. The island was initially dark at night and brown during the day, due to the defoliation and stem breakage caused by hurricane winds. People thought the island had been “deforested” and that “millions of trees had died.” The USDA Forest Service assessment found that there was no extensive deforestation; on average only ten percent of trees died. Soon the island vegetation was green again while many families still lacked power. In four years, forests had recovered from post-hurricane mortality. This does not imply that specific species were not affected; the negative effects of hurricanes on birds are well known. The final blow that caused the extinction of the Bahama Nuthatch was probably a hurricane (Gardner et al. 2024), and hurricanes Irma and Maria (2017) caused the local extinction of two wild populations of Puerto Rican Parrots. The species survives only thanks to the implementation of an expensive and long-term captive breeding and reintroduction program (Faust et al. 2024).

The lessons were obvious. The forests were and are adapted to recover rapidly from the effects of hurricanes. The cities and their technology were not resilient and collapsed after the hurricane. The social component of the SETS was the victim (not the forest); the policies that it had adopted in promoting growth and development had failed. Facing the challenges left by hurricane María, Puerto Ricans found local solutions in the strength of the isolated communities – humans helping humans – and in long-held traditions that had been nearly forgotten. The island was set back half a century and people found themselves washing clothes by hand in rivers, practicing traditional medicine as in the 1970s, using fuelwood for cooking, using a cash or barter economy, living without air conditioning or hot water, listening to analog radio stations, and many other low-energy solutions to daily challenges.

Because of the relatively fast recovery of forests and other ecological systems and the failures of the grey infrastructure, the notion of green and blue infrastructure has taken hold in Puerto Rico (Soderberg 2021; Lugo 2019). Extreme events represent opportunities for the Caribbean to rethink its relationship with other elements of the non-human natural world and recognize that all members of society have a role in sustaining that relationship. A SETS approach provides an opportunity to find holistic and sustainable solutions to the uncertainties of the Anthropocene.

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Río Playa Ecological Reserve

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Eber Eduardo Hernández Ramírez and Hans Van der Wal*



Gabriela Vera Cortés, Don Remedios Hernández, Río Playa Ecological Reserve, Comalcalco, Tabasco (2017). Photograph.

In the foreground of the photograph, Don Remedios, a man weathered by the sun, wears the calm expression and poise of someone who has faced frequent adversity and acquired wisdom in the process. He is seated in a *cayuco* (a flat-bottomed canoe built by hollowing out a tree trunk) and holds a long pole that occupies the entire lower part of the image, which he uses as a tool to propel himself by moving it along with the lower parts of the surface where the salt water has penetrated. Behind him, and on the upper right side of the image, the morning sun shines on a sky dotted with dense clouds that reflect on the water. The sky is gray, and both the man and the vegetation on the right side are backlit. The scene evokes the hard years of labor undertaken by Don Remedios, together with a group of eighteen farmers, in this very place, which in 1980 became the Río Playa *ejido* (collectively-administrated property) and in 2004 was converted into the Río Playa Ecological Reserve.

The image of the Anthropocene presented here is complex and comprehensive. The gray tone of the sky, its reflection in the water, the chiaroscuro of the vegetation, and the man's face against the light are a synthesis of what cannot be seen: his past, his present, and his future prospects. The context of the image is the visible and invisible connections with different processes that unfolded in the Comalcalco municipality, a territorialized space that has been coveted and fought over for its enormous abundance of resources. Such abundance contrasts with its vulnerability to the extreme expressions of nature such as those associated with hydrometeorological phenomena, and currently with a gradual intrusion of saline waters, possibly as a result of climate change. Comalcalco has undergone various territorial changes throughout its history and has been recognized as an important cocoa producer since pre-Hispanic times.

One of the goals of the Grijalva River Commission (CRG), which operated from 1951 to 1986, was to mitigate river flooding. To this end, it constructed canals, cleared vegetation to drain wetlands, and promoted the distribution of communal land among landless peasants already living in the municipality, while also addressing migration to coastal municipalities. Beginning in 1976, national policy was reoriented toward oil exploitation, which turned Tabasco into a state of major relevance in this sector. In this context, the Comalcalco district gained strength and consolidated its position while, together with Cantarell in Campeche, it transformed the southeast into Mexico's energy heartland.

The reflections of the clouds in the water are a metaphor of the intrusion of saline waters that since 1999 continues to slowly advance towards other ejidos. They are also a reflection of a past in which neighbors organized among themselves to deal with floods, a frequent issue in the history of Tabasco, given its geographic location as part of two of the country's most important hydrological basins: Grijalva and Usumacinta. Added to this is the presence of wetlands that have long been part of the lives of its inhabitants. In sum, a man sitting, backlit, with light and shadow reflecting a history of work and effort, of quest and reinvention, in the face of a continuously transformed and territorialized space. A space containing different expressions of vulnerability for a population threatened both by potentially disastrous natural phenomena and by political and economic decisions and interests foreign to the town, and in which resource extraction and production have been constant.

Beneath the visible waters lie what used to be cultivated parcels, as well as the roads built by a group of communal landholders, with their fences, electric lighting installation, and their cornfields, that, if only for a few years, produced in abundance. The memory of that effort and fulfillment remains only in their minds and in those of observers who marvel at the results of human endeavor and creativity, for the common good. Reinvention after the flooding involved measures such as planting white mangroves, building a pier, and purchasing canoes and life jackets to offer tourist excursions. The tool held by the man in the image replaced those used

for planting corn. In his process, time has been an ally: the growth of the mangrove swamp has brought about the return of birds that had left the area, as well as the arrival of new species and mangrove bees. In general, the landscape has been completely transformed in just over three decades, following the substantial transformations experienced throughout the twentieth century. In this case, the change began with the flooding of the northern side of the ejido, affecting the plots of these eighteen peasants who mostly reside in the northwest zone known as Zapotal 2nd Section.

The image is clearly an expression of the Anthropocene, an era in which humans have profoundly intervened in nature, with significant consequences for everyone. In this space, located in Comalcalco, Tabasco, the same thing has happened as in so many other areas of Latin America and the world: extractivist practices – a product of neoliberalism – which, as Ulloa (2017) points out, involve socio-territorial conflicts often linked to conquest and colonialism, to which are now added new practices involving technological innovations in the extraction of minerals, hydrocarbons, water and/or agribusiness.

Valtonen and Rantala (2020) and Clingerman (2020) reflect on populations with a wide variety of comprehensive relationships with the environment, going beyond the society-nature dualism of the Western paradigm. They show that it is critical to consider different narratives that go beyond the dominant view, those of the diversity of social groups that experience inequality based on race, ethnicity, and class. The photograph presented here is an expression of this comprehensive view.

With regard to the concept of territory, we draw on the definition offered by Porto-Gonçalves (2009: 127), who describes it as an appropriated space, “instituted by subjects and social groups who affirm themselves through it.” What interests us is the territory as it is experienced, imagined, and lived by the people – that is, a space territorialized by themselves (Haesbaert 2020). Zibechi (2006) views territorialization and re-territorialization as a set of processes that permanently redefine and reconfigure a space by reinventing and constructing territoriality on the basis of communal and identity-based relationships among its inhabitants. It is, in other words, the reappropriation of a space that is simultaneously physical, symbolic, and relational. In such a space different territorializations with diverse and conflicting interests can coexist, in which, as Porto-Gonçalves points out, social and power relations tend to be naturalized, since it becomes “a refuge, a place where each person feels at home, even within a divided society” (2009: 127).

The image’s interplay of light and shadow represents the inhabitants’ struggle to remain in the space they inherited from their parents and grandparents, seeking the legal mechanisms to achieve this. In their collective historical memory and identity, they share a common recollection of how, throughout the twentieth century, their grandparents and parents lived together in small ranches where they grew cocoa, corn, beans, squash, cucumbers, chayote, rice, oranges, avocados, *chinín* (an avo-

cado relative), sweet potatoes, tomatoes, watermelons, melons, and peppers. Such is the case of the Zapotal 2nd Section ranch; although production was for subsistence, the surplus was sold in markets in nearby towns such as Comalcalco or Paraíso, and sometimes in Villahermosa or Cárdenas, where there was a chocolate factory. Family members and sometimes neighbors used to help each other tend their plots based on the principle that is locally known as “lending a hand” or “hand exchange”. In the case of families and even villages with little land, their members worked as day laborers and acquired non-farm specialities, for example, to the west, where carpentry developed as a trade.

Another important factor is that the six-year presidential term seems to mark a different path, as was the case with the energy reform from 2012 to 2018 under Enrique Peña Nieto, when more oil wells were discovered and developed in the vicinity of the community and international oil companies were allowed to enter the market. More recently, between 2019 and 2024, the government of Andrés Manuel López Obrador decided to convert the Dos Bocas oil complex, located ten kilometers from the Río Playa Ecological Reserve, into a refinery, with the construction of more oil wells. Finally, the Covid-19 pandemic contributed to this situation, leading to the suspension of environmental services.

Since 2006, when the aforementioned eighteen ejidatarios began planting 150 hectares of mangroves, these have continued to grow and now cover approximately 250 hectares. Moreover, the mangroves have provided a protective shield against the effects of cyclones. The group of farmers is aware that this enormous effort has served to improve environmental conditions. All of the above has contributed to changes in the landscape, resulting from the different territorializations in the municipality. At the same time, it has allowed other communities to continue planting cacao or to try to commercialize other local crops, sometimes with government support and sometimes through group initiatives, in a process of reinvention focused on remaining in the space that has provided them with a livelihood.

There is clearly a close relation between the Anthropocene and the territorializations and re-territorializations that, in this case, involve the struggle of a group of rural people against government complicity with the economic interests of transnational companies and their extractive practices. Thus, there is a conflict between these governmental and commercial interests and those of the peasants who have lived in a space with which they share a territorial bond. Drawing on elements of identity and the historical memory of their parents and grandparents, they reinvent themselves in a continuous present, while living in conditions of social vulnerability, whose fragility is also often visible.

At the moment the picture was taken, Don Remedios was in his *cayuco*, while we, members of the research team, were sitting in front of him. He remained silent, allowing us to observe the beautiful landscape territorialized by his community. Memories quickly flooded our awareness, and the faces and stories of men and women

intermingled with the present. Certain images and events ran through our minds; for example, the negotiations between cocoa-producing landowners and migrant families in search of land, whose agreement was to provide a small portion of flood-prone land in Santiaguito or Sargento López in exchange for planting, growing, and caring for the cocoa for a period of approximately seven years. We also thought about the current ejido allocation, now that time has passed, and the families' struggle for survival, but also about their enjoyment of the religious festivals and community life that they experienced and still experience in the highlands and wetlands that they have now made their own.

The past, present, and future they have made intertwined when we saw a flock of birds approaching from the horizon and venturing inland. It was at that moment that the photographer raised her camera and captured this image: one of the birds can be seen perching on the tree on the right that stands out from the vegetation, offering it a brief rest and perhaps food. In the background, behind the tree, a halo of light appears in the sky – an image that could well symbolize hope, embodied in the urgent need for collective and supportive labor, alongside care for our environment for the well-being of all humanity, as the community of campesinos in Comalcalco has so compellingly demonstrated.

Translated by Luisa Raquel Ellermeier and revised by Omar Sierra Cháves.

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Sargassum

Nicolas Rey



Pierre-Paul Gosnave, *Fishing Boats surrounded by Sargassum on Marie-Galante Island* (2014). Photograph. Source: Private collection.

In this image, shared by its author Pierre-Paul Gosnave for this publication, we are confronted with recent transformations. First, when we think of the Caribbean, our thoughts may drift to its paradisiacal beaches, its shoreline hotels where tourist bodies bask in the sun, caressed by the warm waves of a romantic sunset, brimming with promises. This image shows a different reality: the blue sea is now submerged under sargassum accumulated in this port of Marie-Galante, the island where my grandfather was born.

The Caribbean also evokes its famous pirates, organized into egalitarian and libertarian societies yet bloodthirsty in battle, who raided European ships between the islands to seize treasures initially stolen from Indigenous peoples. Today the maritime scene is perhaps less epic. The fishing boats that remain hold little weight in

a context dominated by polluting cruise ships, whose business is stealthily disembarking their clientele into co-opted shops to buy cheap souvenirs. These visits do not allow tourists the time to savor local culinary and artisanal wealth, nor to get to know the inhabitants. The men we see in this image, struggling to escape the “sea of sargassum,” are Afrodescendant, like most islanders in the Lesser Antilles.

The Lesser Antilles, overlooked during the initial phase of conquest by major European powers that were focused on dividing continental America and the Greater Antilles, later became fiercely contested territories for the development of plantation economies. These were sustained by millions of Africans deported as enslaved people, forced to labor to death in the service of rampaging European capitalism. As Nobel Prize-winning author Vidiadhar Surajprasad Naipaul (1962; 1969), born in Trinidad and Tobago, asserts, this same Caribbean keeps its peoples under the diktat of a globalized leisure industry chasing a fantasy of pure blue water, sun, and tranquility, as if little had changed since the triangular slave trade launched to satisfy Western palates ravenous for cane sugar.

In the photo, we can discern multiple layers of meaning: a Caribbean Sea still turquoise on the horizon though for how much longer remains uncertain; a dock and port built to French standards, symbols of an enduring colonial domination; and in the foreground, a desperate struggle of fishing boats operated by Afrodescendant Antilleans, descendants of the enslaved, against the sargassum invasion. Researchers attribute the growth of this algae to the agribusiness industry driven by capitalist interests, which modify the landscape and ecosystem as we will see shortly. In the last ten years, record amounts of sargassum have consistently reached the Antilles, where they accumulate on the sand (Coto 2022), which directly threatens the lucrative “sun and beach” business (García Ávalos 2021). This phenomenon invites us to ask: where does such a quantity of sargassum come from, when did it begin to increase, and why? Besides destabilizing mass tourism, could sargassum bring some kind of public health risk? Finally, given this significant change in Caribbean beaches now submerged in algae, isn't it time to consider other alternative development models?

According to Samuel Eliot Morison (1942), Christopher Columbus's biographer, the navigator perceived an “exotic and magical beauty” upon discovering the Sargasso Sea during his first voyage. Carlos Villa Roiz (2019) also recounts that this shoreless sea has been a subject for various writers, including Horacio Quiroga in the short story “Los buques suicidantes” (The Suicidal Ships) (1917), Julio Cortázar in *Prosa del observatorio* (From the Observatory) (1974), Jean Rhys in *Wide Sargasso Sea* (1966), and Jules Verne in *Vingt mille lieues sous les mers* (Twenty Thousand Leagues Under the Sea) (1870). The threatening aspect of sargassum permeates these novels in a way that was perhaps exaggerated for the time, yet their prescient visions are striking when considering the current situation, as noted by Brian Lapointe and cited by Malaver:

Sargassum has transformed from a vital organism for certain marine fauna, a refuge for fish, shrimp, and turtles, into a toxic zone of dead nature composed of excessive nitrogen [...]. “It’s a huge problem,” explains Lapointe, one of the scientists who identified the Great Atlantic Sargassum Belt in 2019, stretching from Africa to America and dispersing with ocean currents. The study details that increased nitrogen availability from both natural and anthropogenic sources is contributing to its growth. “We need to reduce land-based nutrient pollution, both in Florida and in the major rivers flowing into the Atlantic basin” [...] including discharges from the Congo, Amazon and Mississippi rivers, Lapointe states. (2021)

Researchers from the Institute of Marine Sciences and Limnology at Mexico’s National University (UNAM) specify its reproduction speed: “Sargassum grows rapidly because organic waste of all types converts into nutrients that fertilize the macroalgae, causing its biomass to double every eighteen days, far exceeding ecological equilibrium” (Milenio Digital 2021). While some theories suggest that fertilization originates from the aforementioned rivers (Wang et al. 2019; Oviatt et al. 2019), other researchers favor the hypothesis that it occurs primarily in the Tropical Atlantic’s center (Johns et al. 2020), within the Intertropical Convergence Zone (ITCZ). As Laura Carrillo and Julio Sheinbaum Pardo argue: “Another source of fertilization is dust from the Sahara [...]. From July to September, these particles tend to travel westward, even reaching the Caribbean, while in winter they move toward the equator, reach the Amazon, and contribute to the region’s fertilization.” (2020: 24) The idealized vision of paradisiacal Caribbean beaches becomes increasingly stained by the invasive algae, with public health consequences. Toxic gases such as hydrogen sulfide, with its characteristic rotten-egg odor, harm persons with asthma. As the enormous sargassum biomasses decomposes, it releases methane, carbon dioxide, and nitrogen. As a University of South Florida study states:

In June 2022, the *Sargassum* amount continued to increase across the tropical Atlantic, the Caribbean Sea (CS), the Central West Atlantic (CWA, i.e., the region east of the Lesser Antilles in the maps below), the Central East Atlantic, and the Gulf of Mexico (GoM). In all regions combined, the total *Sargassum* amount increased from ~18.8 million tons in May 2022 to ~24.2 million tons in June 2022, thus setting a new historical record. This indicates significant beaching events around many nations/islands in the CS. (University of South Florida Optical Oceanography Lab 2022)

Mexico, with its exclusive hotel zone in Cancún – connected with direct flights to all continents – rose from seventh to third place in world tourism rankings during the first waves of Covid 19 (SinEmbargo 2021). By late 2021, it had recovered up to 83 percent of its 2019 pre-pandemic tourism levels (Cruz 2021). This achieve-

ment stemmed from political-economic decision to avoid imposing drastic entry restrictions during the pandemic, thereby facilitating international visitor flows. However, these gains were threatened by the exceptional resurgence of sargassum starting in 2022. Since 2014, a year that saw unprecedented accumulations of the algae along Quintana Roo's Caribbean coast (after the first recorded mass invasion episode in the Caribbean in 2011), the scientific community has tirelessly documented and warned about the phenomenon, its causes, and its ecological impacts. Notable examples include studies by Rodríguez-Martínez, Van Tussenbroek, and Jordán-Dahlgren (2016), and by Rodríguez-Martínez et al. (2019) from the Institute of Marine Sciences and Limnology (UNAM). Sargassum sample analyses have revealed the presence of lead, aluminum, chlorine, sulfur, copper, iron, and uranium, among other elements. The widespread detection of arsenic in all samples proved particularly alarming, with concentrations exceeding maximum permissible limits for human and animal consumption. Concurrently, researchers from the same institute warn that large-scale algae decomposition will degrade the sea's natural coloration during this decade, turning coastal waters darker.

The fishing port that we see in the image is submerged by sargassum, due to another human-aggravated factor: since the 2000s, Guadeloupe has expanded into a model combining maritime tourism, fishing, and gastronomy to boost local economies. Authorities opted for specific architectural designs: piers parallel to the coast but with one perpendicularly-angled extremity. This semi-open configuration has disrupted the natural flow of currents. The direct consequence emerged with the sargassum surge beginning in the early 2010s: when vessels enter these semi-enclosed ports, they become trapped without the possibility of exit. Without rapid sargassum removal, boats remain stranded. As containment measures, floating barriers have been installed offshore, but when sargassum arrives suddenly and massively, it overflows these barriers, creating secondary retention zones.

The other recurring issue is that French authorities fail to adequately support affected small municipalities, which must allocate up to 20 percent of their annual budgets to remove sargassum, as was the case for Capesterre de Marie-Galante in 2018. In contrast, tourist zones with large hotel chains possess sufficient private resources and receive more public pressure to evacuate sargassum promptly, ensuring that the peak vacation period remains unaffected (from Easter to summer, when tourism peaks alongside the largest sargassum waves). On "town beaches" outside hotel zones, authorities, lacking resources for rapid sargassum removal, have opted to relocate the algae inland. However, instead of maintaining the regulatory 10 cm thickness (allowing natural drying by sun and wind), they pile it into mounds up to 1.5 meters high. This excessive accumulation generates a contaminating "juice" (leachate) laden with arsenic and cadmium that seeps into the subsoil (Le Blob 2024). We thus face a dire inequality: while hotel zones prioritize sargassum removal to protect the vacation season, local communities endure year-round sargassum in-

vasion. Their beaches, schools, and outdoor sports facilities are compromised, and the stench of decomposition permeates their habitat, especially municipal centers, mostly located seaside. Guadeloupeans also suffer economic collateral damage: as growing public resources shift to uncompensated sargassum removal, investments in other infrastructure and services shrink.

What Solutions and Alternatives Could be Considered?

It is clear that there is an urgent need to reduce land-based nutrient pollution that fuels sargassum blooms, particularly in rivers impacted by soybean farming and livestock operations (Caruso 2005) in the Amazon region, whose waters drain into the Atlantic basin. In Guadeloupe, initiatives to recycle sargassum, such as the production of biochar construction blocks that absorb pesticides, have emerged as potential solutions to chlordecone groundwater contamination (Le Blob 2024). However, these projects still lack systematic implementation. Chlordecone, a pesticide, used extensively and recklessly by banana planters – many descended from slaveholders – with government complicity, poisoned the islands' soils. Its toxic legacy explains the alarming prostate cancer rates that sparked popular protests in Guadeloupe and Martinique in the 2000s: despite its global ban decades prior, France permitted its continued use in these colonies dominated by landowning elites.

Today, alternatives to transform sargassum include the production of shoes, paper, biofuels, construction materials, food products, fertilizers, and general chemical industry applications (Caballero Vázquez, Acosta González, and Hernández Zepeda 2020). Yet minor adjustments to the dominant economic model are insufficient. We must urgently and radically challenge the entire system, as ecosystems are exhausting their capacity for resilience. For instance, turtles nesting onshore now face sargassum barriers along the coastline. Many eggs are lost, while hatchlings cannot penetrate the thick sargassum mats. This problem compounds threats from mass tourism, such as disorientation from artificial lights and noise, obstruction by coastal infrastructure, and marine pollution in turtles' traditional nesting zones. We thus stand at a crossroads: we can transform the sargassum-driven disaster into an opportunity to advance more sustainable development, balancing its three dimensions, that is, the social, economic, and environmental. Sargassum itself is not the issue: in the Atlantic, this seaweed provides nutrients and shelter for species like tuna, turtles, and eels, which use it for reproduction and protection from predators. This very duality inspired the Hamilton Declaration (2014), a non-binding yet crucial political instrument to preserve sargassum as an ecological resource: “The Sargasso Sea is a significant open-ocean ecosystem, largely beyond national jurisdiction, deserving international recognition for its

ecological and biological importance, cultural meaning, and exceptional universal value" (Sargasso Sea Commission 2014).

Sargassum could thus become a catalyst for regional alliances. By spurring agreements between Caribbean and international organizations, this seaweed might foster integration among Caribbean nations that share a colonial history and recent emancipatory struggles, a unity necessary to confront transnational corporations that impose their mercantilist worldview. The true problem lies not in sargassum, but in coastal territories' submission to the "sun and beach" model packaged by the tourism industry and globally marketed through mass media (films, travel magazines, social media algorithms). This mechanism funnels visitors into ad hoc enclaves like Cancún (López Santillán and Marín Guardado 2010) while ignoring the cultural richness and biodiversity of the authentic Caribbean. My own Afro-Antillean community in Marie-Galante – where my farming family preserves traditions in the forested highlands – offers an alternative: the opportunity to discover the Caribbean from its hills, overlooking the sea yet rooted in its fauna, flora, gastronomy, history, heritage, and beliefs. A Caribbean with its own identity. One Parisian family that visits them every Christmas undergoes a transformative experience: they participate in *Chanté Nwel*, a Christmas singing festival that blends Catholic traditions and Afro-Caribbean rhythms. This interaction represents human-scale tourism, where visitors cease being passive consumers to become active participants in local culture (Rey 2019).

This vision is no longer limited to isolated alternatives. It was systematized by the Association of Caribbean States (ACS) during its 1996 meeting in Cuba, which proposed creating a Caribbean Sustainable Tourism Zone. The resulting agreement stipulates that local communities must be involved at all levels: decision-making, planning and development of tourism activities (Frédérique 2006), considering sustainable tourism as essential to Greater Caribbean integration. In this perspective, tourists are transformed from neutral spectators of inert landscapes into active agents of local development in host communities.

To conclude, Caribbean tourism need not fixate on seascapes. It would gain immensely by turning its gaze "inward" toward inland territories and their people, as demonstrated when hundreds of visitors fled Cancún's sargassum for Mérida (where I often vacation) in summer 2019. These travelers were captivated by the Yucatecan capital and its surroundings, praising its cultural, culinary, architectural, archaeological, and geological wealth. As noted in a personal communication by Olga Cervantes López, a social work graduate who lived in the state capitals from Quintana Roo and Yucatán, Mérida's tourism is more cultural and intellectual, in that conscious travelers engage directly with Mayan culinary arts and cosmovision in rural homes, compensating communities for shared life experiences rooted in environmental and cultural respect.

This shift aligns with observations by Guadeloupean professor Olivier Toto, who notes in a personal communication how Easter traditions – once centered on beachfront family meals – have moved to mountain rivers due to sargassum accumulation, in pursuit of clean air. Toto rejects the mass-economic model designed solely for tourists' one or two vacation weeks (April-September), which makes daily life unbearable for Guadeloupeans the rest of the year. The stench of rotting sargassum – a result of official action and inaction – pervades their lives: whether from tons of algae dumped inland or left to decay on beaches (except in hotel zones, where cleanup occurs). For Toto, priority must be Guadeloupean well-being: quality infrastructure and healthy lands for sustainable development would improve both local lives and visitors' experiences. He concludes that alternative, “at home” ecotourism – developed since the 1990s as a side activity – has become a mainstay due to its success. Such tourism redefines host-guest relations, moving beyond megaresorts disconnected from authentic island life. Paradoxically, invasive sargassum may have brought one positive outcome: skyrocketing hotel-zone prices (to offset cleanup costs) have made community ecotourism more competitive. Another world is possible, but only through socioeconomic models based on mutual respect, genuine cultural exchange, and ecosystem preservation.

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Appendix

Biographical Notes

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Jochen Kemner is scientific manager of the Center for Advanced Latin American Studies (CALAS) in Guadalajara, Mexico, and scientific collaborator of the Chair in International Relations with focus on Latin America at Kassel University. After completing a master's degree in history, economics, and Spanish and Latin American studies, and a teaching degree for History and Spanish, he earned his doctorate in History at Bielefeld University. He has been a guest lecturer at the University of Guadalajara, Mexico, the National University of San Martín, Argentina, and the University of Havana, Cuba. His main research areas are Latin American history and interamerican relations (regional focus: Caribbean, Brazil, and the United States), slavery and racism, transnational human rights activism, memory politics, and global history and global education.

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