John Tresch

Cosmic Terrains (of the Sun King, Son of Heaven, and Sovereign of the Seas)

Between the Terrestrial and the Cosmic

In 1966 Stewart Brand printed buttons asking, "Why haven't we seen a photograph of the whole Earth yet?" He thought the photo would transform politics and everyday life by sparking recognition of the feedbacks of our social and ecological systems. Once NASA released photos of "Earthrise" and the iconic "Blue Marble," Brand put them on the cover of *The Whole Earth Catalog*.

Bruno Latour and Dipesh Chakrabarty's conversation about "Conflicts of Planetary Proportions" raises a demand not far from Brand's.[1] In 2020 – as wildfires burn, demagogues fume, refugees clutch at rafts, and new viruses stalk the species – our vision of the earth needs revision. The planet is now shattered into an array of "planetarities": the globe of free trade, the calculable systems of earth science, the spiritual or indigenous nature beneath the pavement, a geopolitics redrawn by industrial powers outside the West, the elusive and unpredictable Gaia.[2]

Despite billionaires fleeing to New Zealand and Mars, we're far too connected by oceans, weather, communications, and diseases for any of us to go it alone. We again need to see the earth as a whole. This is all the more true since the planet photographed from space failed to birth an unequivocally better world. The "Blue Marble" photo implied that a swift and tidy unification was possible; it blurred and suppressed differences, making the work of agreement – of diplomacy – seem unnecessary. Even the *Whole Earth Catalog,* though based in a vision of autonomous, off-grid communes, later fed into Silicon Valley's globe-spanning techno-capitalism.[3]

Perhaps as a rebuke to the previous generation's narrowed vision, artist Aspen Mays created a new pin in 2009: "Why haven't we seen a photograph of the whole Universe yet?" She was asking something impossible: no camera could snap the whole universe. To make visible and explicit all the knowledge, assumptions, hopes, and fears about the cosmos in a single image requires active imagination and semiotic condensation. It invokes history, possibility, and the not-yet-seen. It may call for a synthetic, anamorphic view from multiple perspectives at once – harmoniously, discordantly, or unthinkably joined.

Brand hoped that a single image of the planet could change our cosmology. Mays suggests a complimentary reply: how we live on earth is closely tied to how we address the immensely difficult task of picturing the universe. If we want to come back "down to earth," we need to think these two scales together – the cosmic and the terrestrial – and

"Zodial Sphere and Celestial Globe, Observatory, Beijing," 1873, from *Illustrations of China and Its People: A Series of Two-Hundred Photographs, with Letterpress Descriptive of the Places and People Represented*, J. Thomson, F.R.G.S. Credit: Wellcome Collection/CC BY 4.0.

consider how our depictions of the universe have intersected, or bypassed, our ways of inhabiting the planet.[4] This essay explores the intersection between the cosmic and the terrestrial by juxtaposing *cosmograms* and *territorialities*, taking examples from an earlier moment in global encounter.

"Cosmograms," or representations of the universe as a whole, convey relations among human, natural, and divine realms. They can serve as propositions for how the world might be, with utopian, eschatological, or simply conciliatory aims; often, however, they serve didactic, dogmatic, propagandistic ends.[5] For example, a 1667 painting showed Louis XIV receiving members of the French Academy of Sciences in an overdetermined cosmic context.[6] Behind him was the map of the nation redrawn with new canals, the newly built Paris Observatory straddling the meridian; before him were terrestrial and celestial globes. These objects placed "the Sun King" in the heavens and on the earth amidst machines and mechanical philosophy. Meanwhile, in 1673, on the other side of Eurasia, the Qing emperor Xangxi commissioned a new celestial globe; on the roof of the Beijing observatory it joined an armillary sphere held up by imperial dragons, a symbolic cluster for the ritual renewal between microcosm and macrocosm maintained by the "Son of Heaven." Two distinct autocratic orders presented their "universal" rule within a few years of each other, using comparable imagery and tools (and expertise, as the Beijing globe was built from Chinese models with the assistance of French Jesuits) – but within radically divergent cosmologies. As we will see below, looking at other cosmograms from these monarchs, they also set the framework for diplomacy among parties seeking to make, keep, change, or enlarge a world.

My other key term, "territoriality," does not simply refer to the drawing of borders around a region to define a political entity, as in a vision of the world made up of nation-states; this would be just one mode of territoriality.[7] While "territoriality" grounds political and cosmological formations in the use, affordances, and constraints provided by particular landscapes, my view stands apart from discussions of "the nomos of the Earth"; to examine how groups inhabit a space, we can do without an essential distinction between friends and (killable) enemies.[8] Nor am I adhering to the concept of "territorialization" that Deleuze and Guattari drew from ethology and state formations: *A Thousand Plateaus* associated "territorialization" with the blockage of a "line of flight," the major as opposed to the minor, the royal as opposed to the nomadic.

I mean something simpler. Living as a desert nomad – or in a flat in post-Brexit London – implies a particular mode of territoriality: a relation to a landscape, a pattern of movement attuned to weather and seasons, ways of defining the regions one traverses or occupies as well as the other people one encounters or avoids. Crucially, it also involves a relation to sources of subsistence: the materials one extracts, transforms, and uses, the plants, fruits, grains, and livestock one raises and gathers – or purchases at the endpoint of supply lines from other continents.[9] Modes of territoriality link specific collectives to specific regions of the earth. At the same time, they are tied to specific cosmologies – ways of encountering, delimiting, conceptualizing, and experiencing the relations among entities and domains. They thus leave traces in cosmograms, or shared representations of those cosmologies.

To describe territorialities, the field of geography offers helpful approaches – among them, the efflorescence of "Atlases" and their concepts and representations around 1900 (though one would hope to leave behind the racial and environmental determinism which haunted the discipline).[10] Inspiration also comes from environmental historians' examination of land use: territorialities often weave together disparate regions and activities through particular materials, as in the binding of Andean plots of coffee and coca with agitated cities in the North, Indonesian forest clearings with an Asian building boom, the city of Chicago with the West. The study of diverse "cropscapes" – rice, corn, oranges – along with agronomic sciences and variable theories of "environment" also help define territorialities.[11] Environmental anthropology presents diverse studies of gardening, hunting, and agriculture and their relations to cosmological narratives, rituals, crafts, and ancestral geohistoiries.[12] As David Graeber and David Wengrow have pointed out, anthropology and archaeology also offer examples of *alternating* territorialities and social patterns – such as the oscillation, in northwest Canada, between strongly hierarchical, concentrated formations in winter and egalitarian, distributed habitations in summer.[13]

As these sources suggest, territoriality is not limited to the fixed spaces carved out and recognized on a map of nations. Nor is it reducible to a calculated ledger or "economy" of production, consumption, trade, or even "energy units." This would mean translating a specific mode of territoriality into the valences of political science, economics, biology, or a naturalist ecological science – all of which belong to a peculiar "modern" territoriality, the basis of the current, rather shaky "liberal" global

order.[14]

Returning to the early days of global trade, I want to consider three cosmograms in which distinct (though comparable) modes of territoriality were visible. These intersecting histories suggest how cosmic terrains may interlace companionably – or provoke a violent clash with lasting echoes.

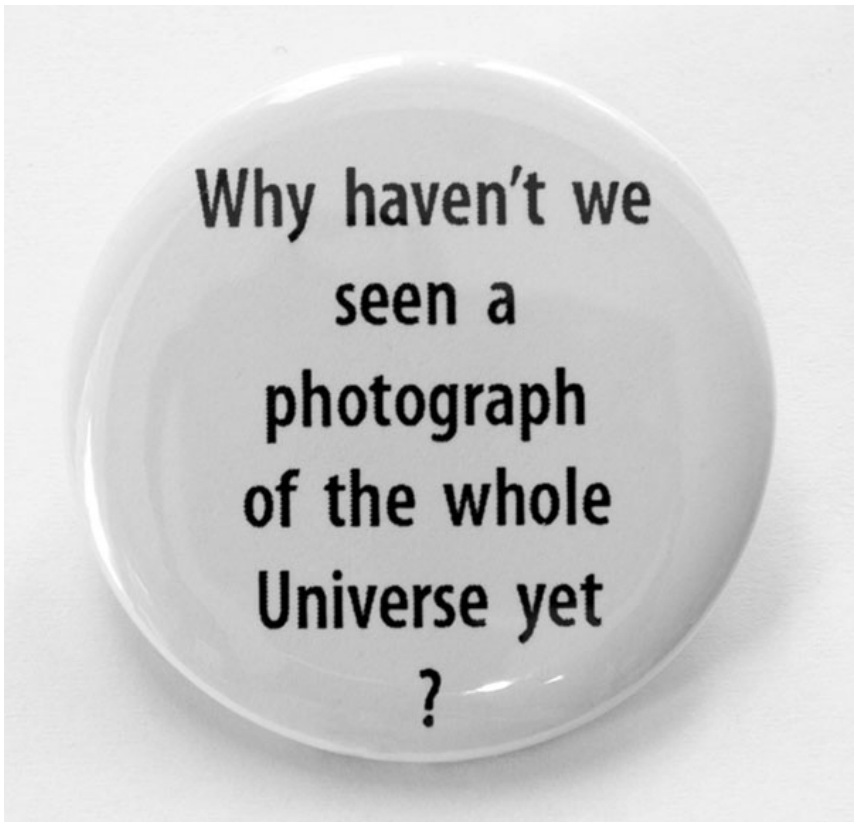
The Habitation of the Sun King

The straight pathways, geometrical *parterres*, and symmetrical axes of the palace and gardens of Versailles announced the power, wealth, and splendor of Louis XIV. They projected him as a cosmocrat, a ruler legitimated by and controlling the universe and the natural order.[15] This palace complex – built ten miles from the traditional seat of royal power, disrupting previous conventions and alliances to secure the Bourbon reign – was a cosmological representation, proclaiming and reinforcing a new social order: the absolutist state. Here Louis welcomed visitors – diplomatic delegations from the Hapsburgs, England, Persia, Siam – as well as members of the French nobility, whose power he sought to limit and contain.[16]

The palace's enormous scale announced the labor at Louis's command; thirty thousand workers were said to have built it. Yet in Pierre Patel's 1668 painting *Vue du château et des Jardins de Versailles*, the main human action is the sinuous entry of the king's carriage and retinue at lower right; these works are for him and by him alone. Otherwise, the image emphasizes a crosscut central axis continuing to infinity. The palace's symmetrical sides, for the king and queen, meet in shared ceremonial rooms, most famously the "Hall of Mirrors," where courtiers saw themselves reflected to infinity, illuminated by the Sun King's rays, and where the court's intrigues forced nobles to dance to the sovereign's tune.

This new political order explicitly resonated with reigning cosmologies: the allées formed crucifixes while paintings and fountains depicted Apollo, fusing Louis with both Christian and classical deities. The plan also embodied Descartes's natural philosophy, based in the mechanical interactions of circulating matter within a universal, uniform grid.[17]

This cosmogram also embodied a particular mode of territoriality, inscribed in the earth and the subsistence drawn from it. Though Louis XIV's gardener André Le Nôtre drew heavily upon the "estate management" tradition developed by Dutch and French Protestant predecessors,



Aspen Mays, *Why Haven't We Seen a Photograph of the Whole Universe Yet*?, 2009. 1.5-inch plastic button, unlimited edition. See □.

experimenting with new techniques to increase the yield of the land, emphasis shifted from profitable improvement. As Chandra Mukerji demonstrated, Versailles proclaimed a new system of rule through territory, in which "land was celebrated for domination, not for productivity."[18] On an unprecedented scale Versailles employed agricultural innovations, such as orchard walls and glass jars to keep in heat; new methods for working with soils; and the cultivation of previously rare fruits such as melons, vegetables, and flowers.

Versailles drew on both the administrative rationality of Jean-Baptiste Colbert, Louis XIV's Comptroller-General of Finances, and the engineering prowess of the Marquis de Vauban, who worked for the Sun King for over fifty years. The palace relied on knowledge of military fortification, hydraulics (the Marly Machine, a massive water-pumping system, brought in and elevated water from afar), and roadworks. It also imposed a new social order in which the nobility became anxiously dependent on royal favor, and in which the grain-producing peasantry were encouraged to feel themselves as subjects of the kingdom. Woven through this socio-technical fabric, and making it possible, were the air, sun, and earth. Louis XIV was redefining the state as a territorial entity – an administration of taxation and building within clearly drawn borders, bound by roads and canals, expanded and defended by a disciplined army. This dominating territoriality applied to the soils, stones, food, animals, and living ornaments he also controlled.

Garden of Perfect Brightness

How similar and yet how different was Yuanming Yuan, the Garden of Perfect Brightness, eight miles from Beijing. The Qing emperor Yongzhen began construction in 1707; in 1736 his son the Qianlong emperor massively expanded the garden into the Summer Palace – making it his primary base for administrative and diplomatic functions. Like Versailles, it was a deliberately constructed and maintained cosmogram: the site for aligning emperor, empire, and the cosmos as a whole.

Views of the gardens are preserved in a book of paintings and poems attributed to the Qianlong emperor himself – who, even more than Louis with his academicians, styled himself as a scholar. Che Bing Chiu has studied these *Forty Views* along with a Feng Shui report of the site, to detail its cosmological resonances. The views recede into the distance, a limitless horizon with the center wherever the emperor stands.[19] The landscape's materials embodied fundamental principles of the universe. From the mountains arise *qi,* the life force; the bodies of water guide and contain it. Scenes also reference Confucian

Henri Testelin, *Colbert présente à Louis XIV les membres de l'Académie Royale des Sciences*, 1667. Oil on canvas, 348 x 590 cm. Musee d'Histoire de France, Versailles.

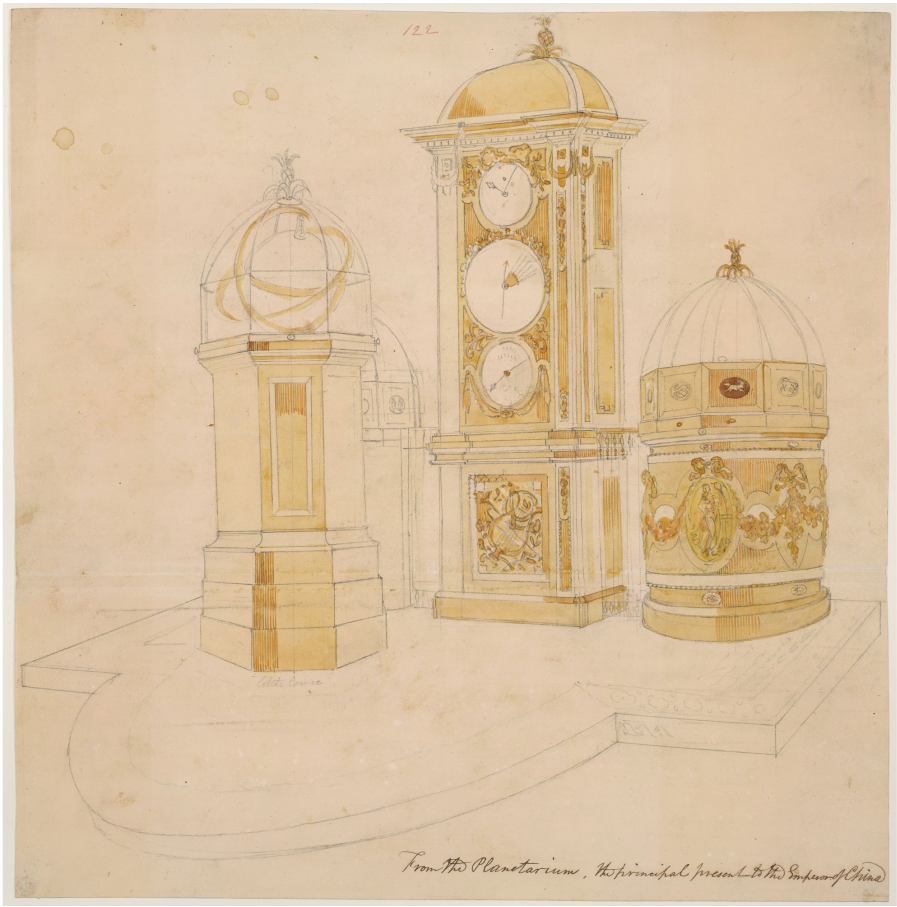
values of filial piety, virtue, and diligence as the basis of good government, and the care given to both administration and agriculture. The view of "Nine Islands" references the nine regions of the world; two of its islands "confront each other in a yin-yang form, the *taiji* or supreme fact of the universe," from which the ten thousand things making up the cosmos arise.[20]

The empire's geophysical locations, mapped onto the body of the earth, were restated in the garden's orientations: the Tibetan mountain range appeared as the source of blood vessels, with the "You and Ji regions as right arm, Chuan and Shu as left arm ... the Yellow river for intestine."[21] The different regions of the empire were also represented in building styles and plants, just as Taoist, ancestral, and Buddhist confessions were enshrined in monasteries, temples, and artworks. The monasteries housed actual monks; the rice fields were planted and worked by real farmers.[22]

The gardens were also laid out with references to the scholarly tradition, following the guidance of Ji Cheng's *Yuanye*, which insisted on gardens' adaptation to their settings as well as their historical echoes. In Tang poet Li Bai's poem "Mount Jingting," while contemplating a mountain it is as if, according to Che Bing Chiu, "time and space are abolished"; the mountain and the poet "form a single body."[23] Likewise in the garden, human artifice and nature become indistinguishable; for Ji Cheng, the well-designed garden "may be only the creation of man [but] may appear the work of Heaven." Yuk Hui has argued that Taoist and Confucian elements combine to form a "Chinese cosmotechnics"; the cosmogram assembled in Yuanming Yuan also implied a specific mode of territoriality.[24]

While the entire complex emphasized continuities with earlier dynasties, Qing emperors enacted distinct terrestrial policies which echoed the garden's manipulations of land and water. Yongzhen instituted "ever-normal granaries" where donations of grain from well-rewarded landholders were pooled and periodically released to keep prices low. Canals were built and improved to move rice and other crops from farming regions to those such as the Yangzi valley, which by the early eighteenth century was a center for crafts and small manufactures. Certain crops were encouraged by state provision of seed, tools, and livestock, including potatoes, peanuts, mulberry (for silk), and cotton, grown for both internal and external trade. New lands were claimed for farming; cultivation moved up mountainsides, and military conquest into the northwest in Xinjiang created an agricultural "New Dominion" expected to be self-sufficient.[25]

"Duojia ruyun" (Crops as beautiful as the clouds), from *Yuan ming yuan si shi jing*, □□□□□□ (Forty views of Yuanming Yuan), 1744. Text attributed to Qianlong emperor, calligraphy by Youdoun Wang, painting by Yuan Shen. Painting and calligraphy on silk, 82.7 × 148.8 cm. Bibliothèque Nationale de France.



William Alexander, *Planetarium, the Principal Present Given to the Emperor of China,* 1793. Watercolour, British Library, WD 961 f.42. Public Domain.

While this active fostering of the land to feed a growing population demanded military, administrative, and commercial innovations, it was presented as *renzheng,* the Confucian "benevolent government" – light interventions following virtuous intent. It was also presented as a Taoist yielding to the natural "way" of the landscape. Rather than forcing submission of either subjects or the land, the emperor was presented as fostering and cultivating natural inclinations.

Art historian Greg Thomas has beautifully examined the commonalities between the "palace cultures" of Yuanming Yuan and Versailles.[26] Despite clear differences in style, the two imperial gardens served similar functions of diplomatic staging, ritual, and symbolic amplification – an isomorphism which enabled the European fascination for "Chinoiserie" and the Chinese interest in "Européenerie." One section of the Chinese garden featured replicas of European-style palaces; filled with tapestries, artworks, clocks, and automata, they offered a playful, miniature, and feminized fantasy of a remote realm. Symmetrically, Versailles's gardens contained a Chinese pleasure palace, similarly reduced in size for the amusement of the King and visitors.

Beneath this symbolic entwinement, the two cosmocrats were far enough apart to remain undisturbed by each other's universal claims. French "naturalism" (and its territorial demands) did not have to clash directly with the "analogical" adjustment of microcosm and macrocosm radiating outward from the Chinese throne.[27] These were two nodes in the web of imperial formations which traversed eighteenth-century Eurasia, along with the Mughals, Ottomans, Romanovs, and English, each with their distinct forms of universality.[28]

A Cosmogram Refused

Over the eighteenth century, the French crown was weakened by financial upsets; Versailles hosted the Estates General and tennis court oath, followed by the Revolution. The Qianlong emperor's long reign saw internal uprisings as well as the growing imposition of European traders at the port of Canton (Guangzhou). Encouraged by their conquest of India, booming trade, and naval prowess, by 1792 the English believed themselves "at this moment the first people of the world."[29] They oversaw the production of cotton, sugar, tea, and opium in India and the Caribbean; though these goods were grown and significantly consumed offshore, the profits came back to merchants, landowners, and factory owners in Britain. British monarch George III fashioned himself "A Sovereign of the Seas."[30] Naval power allowed the empire to grow rich, in an unprecedentedly extensive mode of territoriality.

Eager to reverse the flow of silver to the East, and frustrated by the Qianlong emperor's heavy control on trade, the English planned a diplomatic mission. Led by Lord Macartney, they sought the right to trade direct directly with Chinese merchants and an island as an operational base. Knowing the Emperor's enjoyment of mechanical devices, as tribute the British brought textiles and other demonstrations of English craft, along with clocks, telescopes, and astronomical instruments. The pièce de résistance was a planetarium which combined a solar orrery, an armillary sphere (both encased in glass), and a clock showing the hours, months, and progress from creation to apocalypse. Unlike Versailles and Yuanming Yuan, this was a portable cosmogram. As Simon Schaffer has shown, it represented a universe (and a universality) defined by mechanics, navigation, the free trade of Adam Smith, and Christianity.[31]

The offerings were displayed at Yuanming Yuan. In three ritual meetings, the Emperor received Macartney, who refused to perform the "kowtow" implying submission to the Emperor's supremacy; he greeted him instead on bended knee. The planetarium, the mission's "principal present," was a dud. Assembling it on site took nearly three weeks; a vitrine broke which only Chinese glassmakers could replace. The Copernican cosmology it represented seemed proof of European confusion, since earlier devices had advanced geocentric and Tychonian systems. It was dismissed as nothing new, indistinguishable from the other "sing-song" devices from the "red-headed Western ocean."[32] None of the mission's requests were granted. The Emperor thought other nations would soon demand similar privileges, and suspected a wish to "propagate your English Religion; which is a Thing I will by no means permit."[33] Rather than opening a dialogue, the planetarium was a rejected token of failed diplomacy.

The Europeans advanced by other routes. To reverse the balance of trade, the English planted poppies and produced opium en masse, selling it in great volume to Chinese smugglers. The devastating effect of widespread opiate addiction strained relations between the two nations. After Chinese officials seized these "goods," the English started the first Opium War in 1840. Advanced ships and guns allowed them to force vast concessions in the Treaty of Nanking. In the Second Opium War, in 1860, British and French troops stormed Yuanming Yuan. They looted its treasures and set fire to its palaces. Plumes of smoke were visible from Beijing.[34]

The message was clear: submit to the "universalism" of "free trade" – on terms favorable to those with military might – or suffer the consequences. Today, the Garden of Perfect Brightness remains in ruins, a symbol of brutal defeat and a spur to new striving for global supremacy.[35] Like so many attempts "to teach a lesson" to natives insufficiently receptive to "civilizing missions," the sacking of Yuanming Yang shows how the "one world" of global commerce among nations was assembled through continuous war: military threat, occupation, and forced "settlements" advantageous to the invaders.

Parallax

Recognizing that the relation of imperial powers to the rest of the world has been one of *war* sets heavy but necessary conditions on any rethinking of the planet.[36] The examples above come from large, acquisitive empires. But those who resist, evade, ignore, or are subsumed by them also make cosmograms and insist on their own territorialities. They often do both at the same time, as in cosmological rituals and artworks concentrated on specific landscapes, from Australia to the Andes to Taiwan.[37] A great challenge of the present, with the upsurge of divergent planetarities, is to create cosmograms that can hold each of those universes and justly apportion the terrains upon which they depend. To return to Aspen Mays's prickly question, why haven't we seen a picture of the whole Universe, adequate to the demands of the present? Because we haven't figured out how to compose it in a way that includes all the *cosmoi* that make it up – or how they might all fit on the same planet.

A first step is to bring cosmograms into alignment with their modes of territoriality, highlighting any disparities between the spaces people live *in* and the spaces they live *off*.[38] In the West since the time of Macartney, a vertiginous distance has lain between battered cosmologies of technical progress and development, and the stretched if "ubiquitous" territorialities on which our accelerated ways of life depend. The parallax between our cosmograms and our territorialities reveals outsourced labor systems and environmental degradations we wouldn't tolerate at home, along with the "ghost acres" which supply otherwise unimaginable consumption.

Only with a clear cosmogram of such distorted arrangements can we begin to rebalance them. Occupations of land and the cosmic orders that justify them raise questions of life and death, but the central terms of conflict – who and where "we" are, and what "we" need – are not fixed. New cosmologies can be drawn, new territorialities defined; they change with the seasons and the years. Many need more than they have, while a few have much more than they need. As in Amazonian cosmologies which depict a primordial kinship among all beings, only later dividing into plants, animals, and human tribes, we might begin not with what divides us, but with what we share: a restless, generous earth, and an unquenchable need to picture it.[39]

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John Tresch is Professor of History of Art, Science, and Folk Practice at the Warburg Institute, University of London. He is the author of *The Romantic Machine: Utopian Science and Technology After Napoleon* (2012), *The Reason for the Darkness of the Night: Edgar Allan Poe and the Forging of American Science* (2021), and is working on *Cosmograms: How to Do Things with Worlds*.

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39
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