# New Geographies 12
# Commons

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An appreciation of the living environment extends the domain of earthly influence from a superficial coating to a universe of survival and decision making. Living can be redefined through the mingling of millions of unknown species, motivated by the inputs and outputs of the atmosphere. Whether as a dormant seed or a germinated cotyledon, plant life is most agile in its early life stages. The life stages of flowering plants are necessarily embedded in the ground because the plants that support us are overwhelmingly terrestrial. Plant life is located out of sight, in the actions made by the smallest roots and rhizomes that structure the habitable earth and actively persist in the shallow horizons of the soil. Could scholarship share *the first 15 centimeters of soil* in order to participate fully in our earth's vitality? How does that attention alter our design practices? Attention paid to the living over the built environment might even produce entirely novel images of the climate, shifting our gaze from the atmosphere to the ground under our feet.



# Cartesian Enclosures

Marina Otero Verzier

The relationships between human and nonhuman bodies, as well as their classification, have been an ongoing site of inquiry for disciplines ranging from philosophy, geography, and animal studies to science and technology, media studies, and radical social sciences. Whereas human/nonhuman ethics are at the center of contemporary conversations on issues of inequality and the climate emergency, the discipline of architecture has been only timidly thinking beyond the centrality of the human subject. Primarily developed around normative constructions of the "human"—and in particular the notion of Man as a universal, rational subject—architectural practices are nevertheless entangled in non-anthropocentric struggles.[1]

Architecture has a role in how encounters and assemblages between animals, humans, plants, and machinic and inanimate beings are structured in time and space, yet generally orchestrated to serve the comfort and privilege of some humans. It also supports systems where the distinction between machines and living organisms has been purposely blurred, and one such system, I would argue, is automated capitalist production.

As a form of production, automation results not only in commodities but in the biopolitical production and reproduction of forms of life in common through technology. In so doing, automation poses a conundrum for architecture: it allows the discipline to venture beyond its Cartesian postulates and operate with minimal or reduced human intervention, prompting its critical reinvention; simultaneously, it further intensifies the enclosure and exploitation of larger territories and their laboring bodies, thus participating in the extraction of what is common.

While problematic, these architectures also serve as a lens to today's challenges and responsibilities, and a testing ground for transcending the Cartesian divide through radical notions of ethics emerging from queer, decolonial, and Indigenous studies. Thinking beyond the Cartesian and the human demands the dismantling of the borders that currently define, protect, and exploit the common world and the common interest. The boundaries on compassion. The compartmentalization and instrumentalization of relations. Such a dismantling supports ecological regeneration. It resists extractivist dynamics. It dismisses architecture centered around the white humanist masculinist subject who sees the world as his own possession.

1
Some of these ideas have emerged from conversations held with the editorial team of the forthcoming reader *More-Than-Human*, a project focusing on the entanglements, frictions, and cooperations between animals, humans, plants, technology, and inanimate beings. The book is edited by Andrés Jaque, Marina Otero Verzier, and Lucia Pietroiusti, together with associate editor Lisa Mazza. *More-Than-Human* is a collaboration between Het Nieuwe Instituut, Manifesta Foundation, and the General Ecology Project at the Serpentine Galleries.



## The Metaphor of the Machine

The work of philosopher and historian of science Georges Canguillhem offers an avenue for examining the biological philosophy of technology as a precursor to debates on automation. In "Machine and Organism," Canguillhem reflects on the interdependency between early machines and humans and animals. Indispensable to propel and run early machines, living organisms became part of the mechanical and technical models they were entangled with.[2] The metaphor of the machine, therefore, resulted in a common trope and reference in the study of organisms, Canguillhem argues.

Parallels between animal movements and automatic mechanical movements, "between the organs of animal movement and "oreana," or parts of war machines, already appear in Aristotle's writings.[3] For Aristotle, the principle of all movement was the soul, an argument that justified the demarcation of beings and machines, and which eventually led him to categorize the slave as an animated machine.

The divide between soul and body permeated the work of philosophers in the eras to come. In the second half of the 16th century, and following Aristotle, the Spanish doctor Gomez Pereira suggested that animals were wholly machines without sensitive souls.[4] With his theory of the animal-machine, Descartes also referred to machines as models to explain the functioning of organisms—an idea that was greatly influenced by the technical creations of the early 17th century, such as clocks, water mills, church organs, as well as spring-operated and hydraulic automata. For Descartes, as Canguillhem explains, "the refusal to attribute a soul—that is, reason—to animals" was a means "to justify man's using it to serve his own purposes."[5] The animal is, for Descartes, what the slave was for Aristotle.

As the imperative of rationalization and theory of the animal-machine of Cartesiansim emerged as a driving force in the mechanical age and during the formation of Western capitalism, the metaphors comparing living organisms and mechanical and technical models serve to validate, even today, the exploitation of animals and certain humans—raced, gendered, classed—whose bodies have historically been rendered as laboring machines for the benefit of privileged humans' ends. A justification that supported the discrimination of entities, bodies, and identities under a seemingly rational and neutral system of categorization.

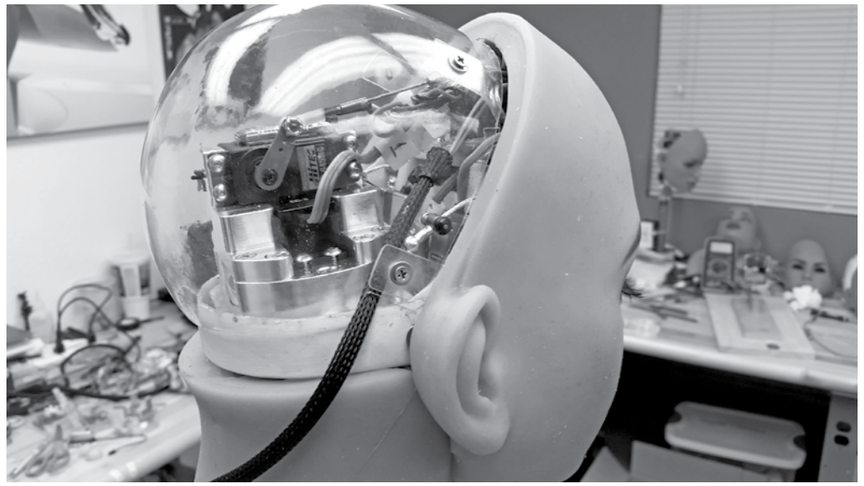
"Human society takes from the oppression of animals its structures and treatment of people," argues the writer, feminist, and animal

2
See Georges Canguillhem, "Machine and Organism," trans. Mark Cohen and Randall Cherry, in *Incorporations*, ed. Jonathan Crary and Sanford Kwinter (New York: Zone Books, 1992), 44–69.

3
Ibid., 48.

4
Ibid.

5
Ibid., 52.



Head of a Realbotix sex robot, 2017. Photo: Realbotix.

rights advocate Carol J. Adams.[6] In Adams's view, the concept and category of the animal, and the way in which it has justified humans' treatment of animals as "animals," have also legitimized the treatment of humans as "animals." "Violence against people and against animals is interdependent. Caring about both is required," Adam insists.[7]

At the core of the question is the concept of "other" and "otherness," which inevitably demands a normative one —or ones— against whom the other is measured, categorized, and valued.[8] Speciesism is precisely the hierarchy constructed to organize the other in relation to the human. And as Adams explains, it has been a tool of colonialism and xenophobic violence. "European colonizers," she points out, "evaluated indigenous peoples according to their relationship with animals and the land."[9] Categorization channeled the impulse to conquer lands for extraction, subjecting populations to violence and slavery for that purpose.

It was nevertheless in the 19th and 20th centuries that these types of classifications of beings, demarcations of species, and theories of racism gained scientific legitimacy, through studies in medicine, psychiatry, and anthropology, among other disciplines.[10] Studies provided the basis for differential conditions between humans and animals, which in turn solidified a notion of humanness in contrast with those that are not included in the category of human. And yet the definition of "the other"—in this case, animals—was precisely what allowed humans to self-identify and vindicate themselves as human. These clusters—forms of enclosure and self-enclosure that put the limit at the threshold of the

6
Carol J. Adams, "The War on Compassion," in *The Animal Catalyst: Towards Ahuman Theory*, ed. Patricia MacCormack (London: Bloomsbury, 2014), 21.

7
Ibid., 15, 25.

8
Ibid., 21.

9
Ibid.

10
Ibid., 18.



11
Ibid., 16.

12
Jacques Derrida, "The Animal That Therefore I Am (More to Follow)," in *Critical Inquiry* 28, no. 2 (winter 2002): 394.

human/animal—are, as Adam claims, boundaries on compassion and care guided by a false idea of scarcity.[11]

In the last two centuries, the forces behind the differential treatment of the living animal have been continuously fueled by the development of zoological, ethological, biological, and genetic forms of knowledge. According to Jacques Derrida, "genetic experimentation, the industrialization of what can be called the production for consumption of animal meat, artificial insemination on a massive scale, more and more audacious manipulations of the genome, the reduction of the animal not only to production and overactive reproduction (hormones, genetic crossbreeding, cloning, and so on) of meat for consumption but also of all sorts of other end products" are carried out "in the service of a certain being and the so-called human well-being of man."[12] Contemporary automated technologies could be added to Derrida's list as one of these developments behind the exploitation and violence against animals and other living beings.

Dairy Farm De Klaverhof, Moerdijk. Photo by Johannes Schwartz.

Dairy Farm De Klaverhof, Moerdijk. Photo by Johannes Schwartz.

## Relentless Workers, Captive Bodies

The architectures of automated production are redefining notions of human and nonhuman, as well as their labor ethics, under the spell of Cartesian logics. Occupying and enclosing large parts of the territory in countries such as the United States, China, or the Netherlands, these enclosures control and maximize the productivity of the ground and the bodies that labor in it, their uptime increasingly stretched through automated technologies.

While machines mirror human dreams of relentlessness, human and nonhuman bodies are urged to adopt the pace of automation for the sake of efficacy and productivity. Inside automated spaces such as farms and greenhouses, data, technology, and energy fuel the maximization of the land for year-round crops. Unrestricted by exterior conditions and seasons, these architectures work 24/7 through climate control, artificial lighting, water and nutrient distribution systems, and the pushing of bodies to their maximum uptime.[13] Commercially produced insects are deployed to pollinate fruits and vegetables and to control populations of other insects and living organisms. Cows and plants are handled by robots, their morphological traits, movements, and behaviors quantified and transformed into data and biometrics. In these highly technological and industrialized spaces, animals and plants are rendered less as living beings and more as objects deployed in the service of human needs.[14] These

13
See Automated Landscapes, a long-term research project exploring the implications of automation in the built environment, launched in 2017 by Het Nieuwe Instituut and directed by its research department. The department, led by Marina Otero Verzier, includes Ludo Groen, Anastasia Kubrak, Marten Kuijpers, Klaas Kuitenbrouwer, Setareh Noorani, and Katía Truijen, in close collaboration with various external collaborators, such as Merve Bedir of the Shenzhen-based Aformal Academy, Víctor Muñoz Sanz from the Faculty of Architecture and the Built Environment at the Delft University of Technology, and Grace Abou Jaoude.

14
Adams, "The War on Compassion," 19.



enclosures also enhance forms of subjection, extraction, and exploitation of certain humans are also enhanced. The low-wage human workforce, particularly with raced and gendered bodies, is monitored in real time, evaluated and managed by performance systems. Machines are dreamt in flesh, while bodies are technologized and managed by machines.


Greenhouse Ter Laak Orchids, Wateringen. Photo: Johannes Schwartz

LED lighting inside a greenhouse, Koppert Cress. Photo: Jan van Berkel.

If precision-based automated production came with the promise of a society liberated from the bondage of labor, while allegedly reducing energy, water consumption, and the use of chemical products, it has done so while being supportive of neoliberal regimes and dependent on the exploitation and invisibility of working bodies—human and nonhuman—treated in this case as automated machines. These production spaces expose how the persistent presence of unequal and extractive structures is manifested in Cartesian forms of enclosure, some of them enacted by architectural practice.

Architecture, as a biopolitical and normalizing technique, participates in the construction of distinctions and categories, or the lack thereof. In coordination with other social and institutional techniques, architecture produces a differential social space and is too often put at the service of the containment and exclusion of bodies, facilitating or preventing their encounter and their free movement. The structural conditions implemented in the contemporary spaces of automated labor are not an exception but another historical episode of how unfolding violence is unleashed upon certain bodies in support of growing production and capital accumulation.

I am referring here to the systematic structures that have previously served to enslave and, under unrelenting pressure, exhaust bodies. The conditions of containment and exploitation unleashed by the Door(s)

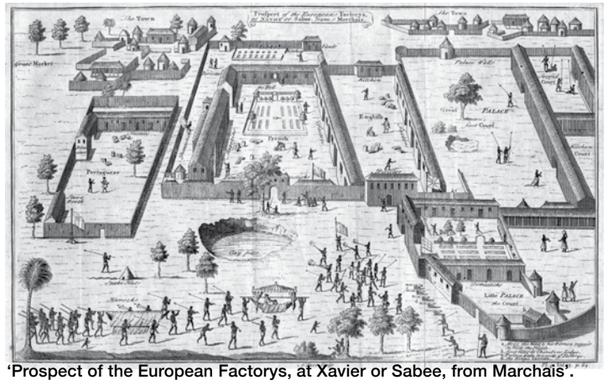


of No Return, the hold of the slave ship, the plantations, and other spatial and conceptual boundaries are still reproduced and articulated in contemporary architectures and the multiple afterlives of slavery. In these spaces, those regarded as "the other" become sources of energy for the ambitions and enterprises of particular human groups. After all, the category of the human was never applied to the whole of humanity.

As Achille Mbembe argues in *A Critique of Black Reason*, the notion of race "made it possible to represent non-European human groups as trapped in a lesser form of being. They were the impoverished reflection of the ideal man, separated from him by an insurmountable temporal divide, a difference nearly impossible to overcome."[15] Mbembe identifies the enclosure not only in the categorization and race, or the spaces where Black bodies have been confined or blocked from entering, but in a constructed form of belated temporality. As he puts it, Black bodies are "locked into a belatedness in becoming human enough in relation to the ideal (white) humanist subject, the spatializing of time along a vertical line is used as a mechanism to deny juridical rights."[16] To produce Blackness, Mbembe asserts, is to produce a body of extraction, an exploitable object from which to obtain maximum profit.

15
Achille Mbembe, *A Critique of Black Reason* (Durham, NC: Duke University Press, 2017), 17.

16
Kathryn Yusoff, *A Billion Black Anthropocenes or None* (Minnesota: University of Minnesota Press, 2018), 77.



'Prospect of the European Factorys, at Xavier or Sabee, from Marchais'. Artist/engraver/cartographer: N. Parr, from Marchais. Provenance: "A New General Collection of Voyages and Travels"; Printed for Thomas Astley, Published by His Majesty's Authority, London. Type: Antique copperplate map. Date taken: 1746. Location: Benin. Source: Antiqua Print Gallery / Alamy Stock Photo

Slavery and the possibility of Black bodies becoming property served to redistribute energy and accumulate profits in particular geographies that largely benefited from the exploitation of human and nonhuman bodies, profits that constituted the base for the economic growth of, for instance, Western Europe and the Americas.[17] And it

17
Ibid.,15.

was precisely in the transatlantic slave trade where the categories of human, nonhuman, and inhuman morphed and crystalized in different constructions of space and time, and persistent and systemic forms of property ownership and misappropriation. Prompted by growing mineral extraction in the New World, in particular gold and silver, which later served to boost European markets, the transatlantic slave trade supported European world building. As Kathryn Yusoff argues in *A Billion Black Anthropocenes or None*, it was a world dependent on the subjugation and de facto categorization of the enslaved, the land, and ecologies as inhuman property. "The property lines of empire," Yusoff insists, "instigated and marked Blackness as both a consequence of labor requirements and a possibility of capital accumulation through geologic extraction."[18]

Yet as the demand for labor in the plantation economy of the Americas grew, the selling of slaves turned into a more lucrative enterprise than the trade of gold, Saidiya Hartman points out. Having until then stored trade goods such as porcelain, cloth, and copper, edifices such as Elmina Castle—controlled by the Dutch and located in present-day Ghana—filled their storage rooms with captive bodies.[19] These were gateways between Africa, the ports and trade centers of Europe, and the plantations in the Americas, where bodies were later transported in the holds of slave ships to satisfy the European demand for human labor on New World plantations.

Plantations, like mines, were sites where enslaved human bodies were rendered inhuman, not by their entanglement with mineral commodities, but by being subjected to the inexorable work comparable only to that of an automated machine. As captive laboring bodies,

The Door of No Return, Gorée Island, Senegal, 2004. Photo: Robin Elaine. Source: Flickr.

18 Ibid., 68.

19 Saidiya Hartman, *Lose Your Mother: A Journey along the Atlantic Slave Route* (New York: Farrar, Straus and Giroux, 2007), 52.



their life expectancy became an intrinsic part of these sites' production model. As such, Christina Sharpe notes, weather monitoring was a major part of the plantation management, as necessary for the growth and cultivation of crops as for the performance of the enslaved. The enslaved, Sharpe points out, were forced to labor relentlessly "in the rain, in the sun, in damp and in dry, cutting cane, laying dung, hoeing, and weeding," with deadly effects.[20]

Plantations and factories were therefore a testing ground for forms of enclosure, dispossession, appropriation, and accumulation, as well as economies and systems of labor and production that were soon exported from the New World and the colonies to the continent. The so-called tragedy of the commons, and the systematic fencing and privatization of common land formerly held in the open-field system, which served to mediate toward a full capitalist economy, is generally presented as one of its results. Similarly, in the ethos that gives shape to the labor systems inside automated greenhouses and factories, one can't avoid recognizing the Cartesian logic and mechanical conceptions of living organisms—a logic that for centuries has based the increase in production on the relentless labor of the other.

20 Christina Sharpe, *In the Wake: On Blackness and Being* (Durham, NC: Duke University Press, 2016), 112.

## Pandemic Lockdowns

It seems inevitable to refer to the current situation and how the ongoing entanglement of humans and nonhumans dramatically alters spatial conditions, collapsing previous conversations in a common yet unseen scenario. As this essay is being written, the COVID-19 pandemic prompts millions of humans to radically reorganize their forms of living, producing, consuming, and relating to others: practicing social distancing, self-isolating, quarantining, working remotely, shifting education to virtual spaces. Governments are taking unprecedented measures to prevent or slow down the contagion of populations, including implementing lockdowns and paralyzing a large number of manufacturing and economic activities.

Bound to their domestic spaces, workers nevertheless continue to perform their jobs, assisted by digital technologies and infrastructures. In confinement, those who can carry out their tasks remotely have to keep up productivity and attentiveness even as they are drawn into an unprecedented production, circulation, and consumption of data.[21] Simultaneously, their immaterial labor increases exponentially—caring for others, maintaining the social fabric and forms of cohesion,

21 In the first weeks of the government-imposed self-isolation for populations in Europe and the United States, Microsoft teams reported a growth from 32 million daily active users to 44 million, who in turn generated over 900 million meetings and calling minutes per day. Facebook confirmed that traffic for video calling and messaging exploded. In Italy, quarantined youngsters playing PC games increased traffic over Telecom Italia SpA by 90 percent compared with the previous month. Downloads of Netflix's app jumped 66 percent. In Spain, they rose 35 percent. In other parts of Europe, traffic to WebEx, a Cisco video conferencing service, soared by as much as 80 percent.

educating children, assisting elderly—with no compensation or support under the premise of the need for empathy and solidarity.

Having effectively moved the office space to the domestic environment, workers are even more vulnerable to systemic forms of exploitation, discrimination, and inequality among populations and territories. The enforcement of self-isolation has evidenced how the house, long an object of real estate speculation and form of investment, is a basic right of which, unfortunately, many are dispossessed. The last global crisis had remarkably imposed some of the most draconian conditions on the housing systems and its inhabitants. Whether foreclosure or forced enclosure, or both, the politics of house are deployed with violence against its inhabitants.

The current mode of digital production in self-confinement and isolation also renders visible the uneven distribution of digital infrastructures and internet access, as well as the ongoing privatization of public life. The shift to digital labor and online social cultural, and economic activities presupposes that everybody has access to a reliable internet connection, data plans, digital devices, and machines. Not only for working but also for supporting basic contact with loved ones and public life while in confinement. In addition, the growth of current data production means increased surveillance, data mining, profits for certain companies, such as Facebook, Amazon, and Zoom, as well as a large environmental footprint, as data storage depends on high consumption of often-non-renewable energy. Certainly, the pandemic brought the world closer to some of the dreams—and nightmares—designed in Silicon Valley.

As humans isolate their breath, cover their mouths, eyes, hands, or entire bodies when in contact with others, are quarantined in interior spaces, their bodies framed by the grids of video communication companies, other forms of enclosure continue to proliferate. Cities and countries are experiencing lockdowns, governments impose travel bans and the closing of borders. The pandemic has accelerated dramatically the walling of states, a phenomenon that has been normalized in the last decade through rising nationalism and xenophobia, as well as the proliferation of support for the nation-state as a geographically confined site of belonging.

Movement, nevertheless, is not an evenly distributed right. Nor is breathing. While the movements and actions of a large number of human bodies is restricted, the rich have access to other conditions of containment and circulation involving lesser risk of contagion, while other communities—nurses, doctors, security forces—are mobilized to work. As David Harvey notes, "The workforce that is expected to take care of the mounting numbers of the sick is typically highly gendered, racialized, and ethnicized in most parts of the world."[22] These workers are exposed to a double risk, Harvey insists, either contracting the virus through their jobs or being laid off. So are workers in the delivery sectors, whose labor allows the practicing of social distancing by the rest of the population. Similarly, age has become a category through which to assess the worthiness of healthcare treatments during the pandemic. Some bodies are deemed disposable by neoliberal governments and their social calculus by which they wrongly ask us to choose between the economy and death.

The present situation manifests a structural condition.[23] A recent report by the United States' Centers for Disease Control and Prevention revealed the disproportionate impact of the COVID-19 pandemic on African American communities.[24] Racial and ethnic disparities show how the afterlives of slavery continue to haunt minorities in the systems of incarceration.[25] As the pandemic makes inmates among the populations most vulnerable to COVID-19 infections, prison labor has proved to be one of the solutions used to face supply shortages during the pandemic in places such as the US and Hong Kong. Mass incarceration, which in countries such as the US involves Black people at five times the rate of whites, is exploited as a cheap solution to produce hand sanitizer and face masks.[26] Under the Cartesian logic of the animal-machine, enclosing structures based on the punitive, relentless work of "the other" continue to maintain the system.

If minorities are too often considered as machines, robots and artificial intelligence emerge as an alternative to deliver supplies, interact with sick patients, disinfect rooms, or control populations. Even before the crisis, supply chains were reliant on an important number of artificial-intelligent and automated systems, a trend that is likely to accelerate. The  consecutive attempts to build a machine that can act and think like a human being are concurrent with the lack of diversity and intersectional thinking in the tech industry, as well as the data sets used by the coders, which inevitably manifest in AI, software, and algorithms with racial and gender bias. Social inequalities are magnified by the daily workings of algorithms  that, using obscure scoring systems, assess millions of individuals and their reliability. The machine makes the human as the human makes the machine.

In confinement, entangled with viruses, gradually replaced by robots and AI, people's lives are differently valued, and the notion of what is human seems more than ever in flux. Rather than resorting to the forces of nostalgia and a long-criticized humanism, more important is perhaps to reimagine what being human might mean.

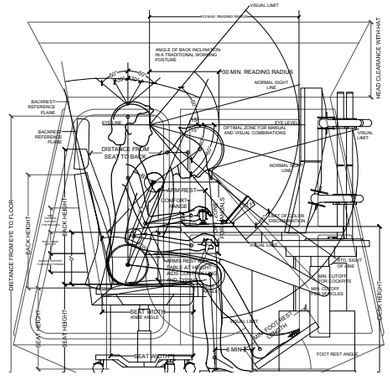
22 David Harvey, "Anti-Capitalist Politics in the Time of COVID-19," *Jacobin magazine*, March 20, 2020, https://jacobinmag.com/2020/03/david-harvey-coronavirus-political-economy-disruptions.

23 Jeffery C. Mays and Andy Newman, "Virus Is Twice as Deadly for Black and Latino People Than Whites in N.Y.C.," *New York Times*, April 8, 2020, https://www.nytimes.com/2020/04/08/nyregion/coronavirus-race-deaths.html.

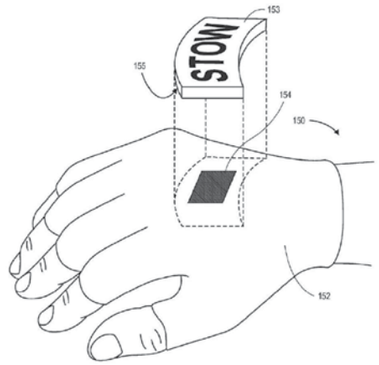
24 "Hospitalization Rates and Characteristics of Patients Hospitalized with Laboratory-Confirmed Coronavirus Disease 2019 — COVID-NET, 14 States, March 1–30, 2020," Centers for Disease Control and Prevention, https://www.cdc.gov/mmwr/volumes/69/wr/mm6915e3.htm?s_cid=mm6915e3_w.

25 Katie Mettler, "States Imprison Black People at Five Times the Rate of Whites—A Sign of a Narrowing yet Still-Wide Gap," *Washington Post*, December 4, 2019, https://www.washingtonpost.com/crime-law/2019/12/04/states-imprison-black-people-five-times-rate-whites-sign-narrowing-yet-still-wide-gap/.

26 Harriet Grant, "Vulnerable Prisoners 'Exploited' to Make Coronavirus Masks and Hand Gel," *Guardian*, March 12, 2020, https://www.theguardian.com/global-development/2020/mar/12/vulnerable-prisoners-exploited-to-make-coronavirus-masks-and-hand-gel.



Anthropometric data. Crane cabin operator vs remote control operator. Drawing: Het Nieuwe Instituut, 2017.




Wearable RFID devices with manually activated RFID tags. Amazon Industries, Inc. Source: European Patent Office (EPO)

## Becomings to Come

As humans retreated in self-isolation, the news on pollution levels reaching historic lows and wildlife bouncing back in cities made the unthinkable thinkable. Patricia MacCormack's words reverberated then more than ever: "Can the end of the human without replacement be a creative, jubilant affirmation of life?" she asks.[27]

In the *Ahuman Manifesto*, MacCormack advocates for the cessation of the reproduction of human life. According to her, the end of the human is not a denial of futurity nor its discontinuation: rather, human disappearance brings the possibility of a future that has not been thought of in advance by the human, a future not forged on human referents and not made according to the human.[28] "Ahuman ethics," MacCormack claims, celebrates "the death of the human—as subjectivity and ultimately as extinct" and unleashes forms of creativity opening spaces never before accessed.[29] Having invented the concept of species and, with that, the countless categories that validated the exploitation and denial of life to others, humans must now, MacCormack argues, "be the species to change the becomings to come."[30] "If all lives are of equal value, and some lives perpetrate more resource consumption or cause the liberty of other lives to be compromised, then is their value to be found in their absence rather than in their preservation?"[31] MacCormack ultimately demands that humans ethically address the purpose of our continuation on Earth.[32]

The possibility of an ahuman world unleashes, above all, alternative futures and forms of existence for nonexploitative, common,

27 Patricia MacCormack, "After Life," in *The Animal Catalyst: Towards Ahuman Theory*, ed. Patricia MacCormack (London: Bloomsbury, 2014), 180.

28 Ibid., 179.

29 Ibid., 183.

30 Ibid., 179.

31 Ibid., 57.

32 Ibid., 187.

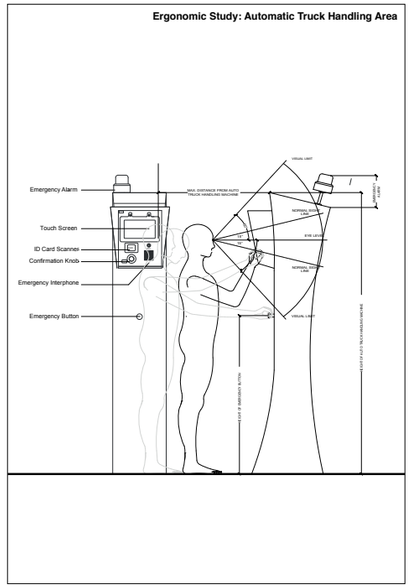


and radically equal worlds. The prerogative of mind over matter, which rendered the human as separated from the rest of nature, propelled human dreams of landscape domination and the depletion of resources, with vast implications for the environment. Cartesian science, in its objectivation of identity and categorization, also had social consequences on those marginalized based on their ethnicity, gender, race. Today we see how these categories, as well as the primacy of man, are increasingly contested, even without having yet embraced the extinction of the human. The dualisms of Cartesian science, which led to the compartmentalization and instrumentalization of relations and to embracing rationality of economic efficacy instead of ethical and ecological awareness, are outdated. So is the dominant paradigm of Cartesian space that privileges materiality, functionality, and abstraction. A paradigm in which architecture has its foundations.

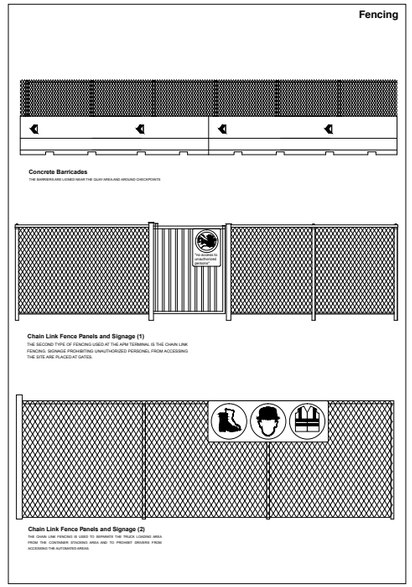
A non-Cartesian architecture for the becoming-other demands different imaginaries, epistemologies, and spatial relations. What would it mean for architecture to put an end to the anthropocentrism that has dominated its theories and practices? Conventional notions of space and architecture could give way to unknown dimensions of reality and perception brought about by the decentering of the human from architectural practice. Spatial and philosophical enclosures could perhaps be turned around and challenge the inevitability of the unequal relations that they set


APM automated terminals in Rotterdam. Photo: Het Nieuwe Instituut, 2017.

Remote control room, office terminal of APM terminal, Rotterdam. Photo: Nelleke de Vries.




Ergonomic study. Automatic truck management area, APM terminal, Rotterdam. In the unmanned control point, truck drivers must show an identification card, write several codes, and use biometric data to continue their route. Drawing: Het Nieuwe Instituut, 2017.




Fence, APM terminal, Rotterdam. An array of concrete barriers, metallic fences, and CCTV surround the terminal to prevent unauthorized access. Drawing: Het Nieuwe Instituut, 2017.

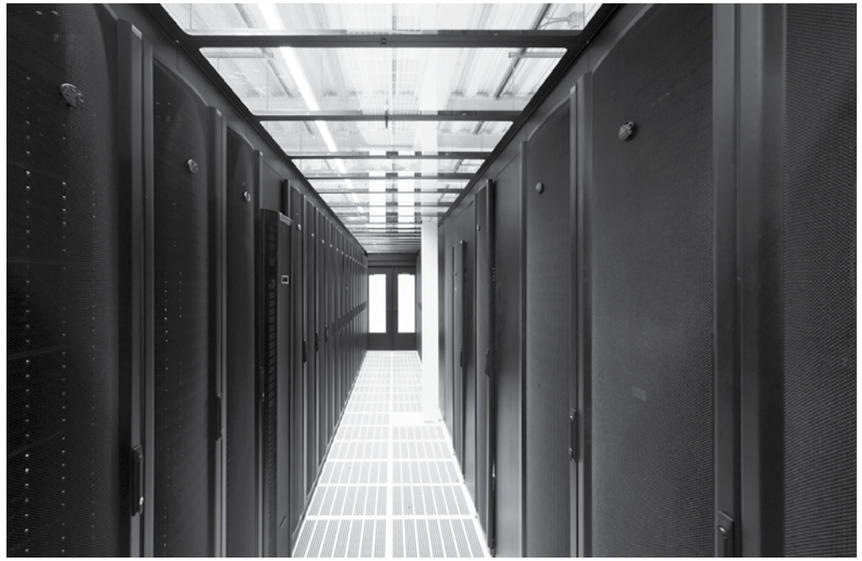


Dockers' strike in Rotterdam to protect jobs. Image by International Transport Workers' Federation, January 7, 2016.

forth. Unpredictable environments, structures, and relations could emerge in the interaction and melting of matter, technology, and beings. From the profound revision of received ideas about the threshold of humanity—as well as notions of comfort, care, empathy, property, and progress that account for humans and nonhumans—new forms of social life and life-in-common could emerge. "Sometimes common entanglements emerge not from human plans but despite them," Anna Tsing proposes while talking about the possibility of life in capitalist ruins. "It is not even the undoing of plans, but rather the unaccounted for in their doing that offers possibilities for elusive moments of living in common."[33]

By acknowledging humanity's ruins and the collapse of the dreams of industrial progress, a spatial imaginary for non-Cartesian architecture emerges. Far from being a unifying seamless space, it could be one outlined by the encounter of singularities (humans and nonhumans) in the common.

33 Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton, NJ: Princeton University Press, 2015), 267.



Data Centre AMS8 Interxion, Haarlemmermeer. Photo by Johannes Schwartz.

## Coda

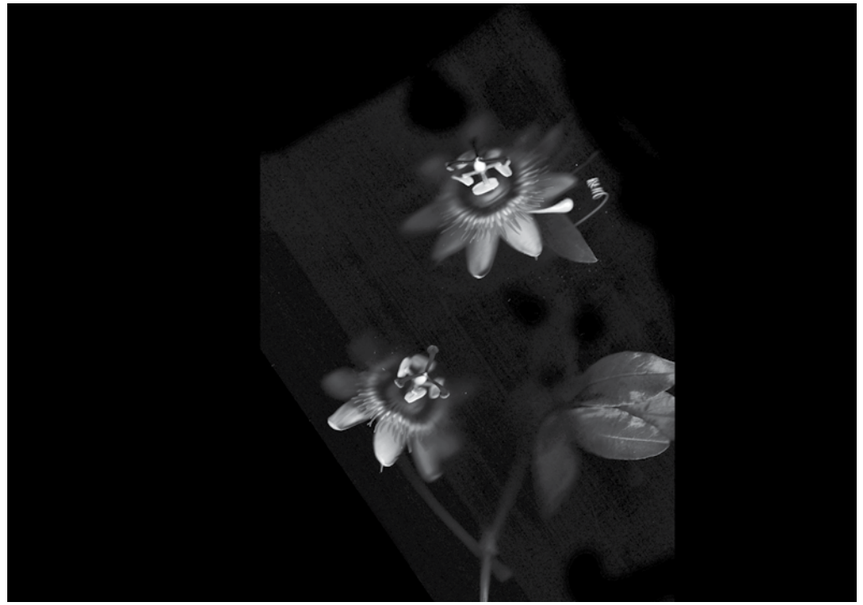
As a locked-down humanity produces more data than ever before, the enclosures that served for their control and storage are being rethought. While the rigid rectangular geometries of data centers continue to proliferate across the territory, experiments on the entanglement of data and organisms are resulting in architectures difficult to describe under dual categories and ethics.[34] Artificially encoded binary data is being stored within synthesized strands of DNA and the DNA of plants and seeds. The host organism not only preserves its ability to germinate, but as it grows and multiplies so does the encoded information, now contained in every cell, potentially archiving billions of gigabytes of data for millennia.[35] Yet as plant cells routinely repair their DNA, errors could alter the code over time, leaving room for unexpected developments.

If data is a human expression, plant-based digital data storage shakes Cartesian enclosures and categories. When a living forest could become the largest human repository on Earth, and even rewrite its history, architecture has no choice but to rethink its own postulates.

34
Further research on data centers is conducted in collaboration with Het Nieuwe Instituut and the Royal College of Art in London, within the framework of the architectural design studio "ADS8: Data Matter: Digital Networks, Data Centers & Posthuman Institutions," led by Marina Otero Verzier, Ippolito Pestellini Laparelli, and Kamil Dalkir.

35
Sean O'Neill, "I Plant Memories in Seeds," *New Scientist* 229, no. 3056 (January 16, 2016): 27.





Helena Francis, A cyborg future for the data archive. Cyborg plant—Liliaceae (April/2020). Courtesy of the author.

accreditation procedures, the National Architectural Accrediting Board (NAAB) would need to adjust. Its new role could ensure that each individual school's advertised knowledge threads are properly populated and, across schools, appropriately shared. But if NAAB could so accredit, the National Council of Architectural Registration Boards (NCARB)—unable to properly categorize, evaluate, and standardize requirements leading to licensure—would baulk. This would be ironic since it is the role of state licensing boards to ensure public welfare even as its limited understanding of architecture-as-*building* and not architecture-as-*spatial justice* actually prevents architects from serving the public. But if it resists, forget licensure.

Since the completion of the first draft of this article, there is much, much more thought production to which we architects have access. The Black Lives Matter protests have stimulated statements and reading lists from nearly every architectural organization out there. The recognition that these will be shared, read, and (it is hoped) understood via social media, independent of journal outlets, indicates the spread of the "common" beyond those described above. One might be anxious about the diminished distinction between scholarship, journalism, and opinion, but as Negri made clear, the production of knowledge allowed by the free exchange of information is not primarily about scholarship but, rather, about struggle. To access and share information is to resist capitalism's desire for owning the same.



Amy Balkin's work involves land and the geopolitical relationships that produce it. Her projects and collaborations include *Smog Index*, *A People's Archive of Sinking and Melting* (Balkin, et al.), *The Atmosphere, A Guide* and *This Is the Public Domain*. Forthcoming and recent exhibitions include *The Vienna Biennale for Change 2021* at MAK, *Overview Effect* at the Museum of Contemporary Art, Belgrade, *The Normal* at Talbot Rice Gallery, Edinburgh, and *Beyond the World's End* at the Santa Cruz Museum of Art & History. She is currently remote artist-in-residence with the Penn Program in the Environmental Humanities (PPEH).

Nadia Bertolino is an architectural theorist and researcher in urban commons and inclusive spatial practices. Standing in opposition to reductionist positions, her work focuses on the redefinition of the role of architects within non-commodified processes of spatial production. She holds a PhD in Architecture from the University of Pavia, Italy. She is Senior Lecturer in the Department of Architecture at Northumbria University, Newcastle (UK), where she is Architectural Humanities Lead. Prior to that, she worked at Sheffield School of Architecture as Director of the MA in Architectural Design. She has presented keynote talks at many institutions including Tongji University, University of Seville, Polytechnic University of Catalonia, Harbin Institute of Technology and the Indian Education Society. In 2019, Nadia was among the initiators of the popular Summer School 'The City as a Commons', and curator of 'The City of Commons' exhibition.

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David Bollier is an American activist, scholar, and blogger who studies the commons as a paradigm of social transformation, economics, and politics. He is Director of the Reinventing the Commons Program at the Schumacher Center for a New Economics [www.centerforneweconomics.org] (Massachusetts, US) and cofounder of the Commons Strategies Group, [www.commonsstrategies.org], an international advocacy project. Bollier is an author or editor of eight books on the commons, including *Think Like a Commoner* [www.thinklikeacommoner.com] (2014) and (with coauthor Silke Helfrich) *Free, Fair and Alive: The Insurgent Power of the Commons* (2019), and blogs at www.Bollier.org.

Paola Cardullo is senior postdoctoral researcher at IN3, Universitat Oberta de Catalunya in Barcelona (Beatriu de Pinòs, Marie-Curie 2018). Previously, postdoc at the Technology Adoption Group, Maynooth University School of Business, and on The Programmable City at NIRSA, Maynooth University. She was Associate Lecturer at Goldsmiths, University of London. See her projects on Open Science Framework and her profile on the Zotero Community.

Rachel Cobb is a New York City-based photographer who covers current affairs, social issues, and the natural world in the U.S. and abroad. Her work has been widely published in magazines and newspapers such as *The New York Times*, *The New Yorker,* and international publications. Cobb's critically acclaimed monograph *Mistral: The Legendary Wind of Provence* was published by Damiani in 2018. Her work has been recognized with a number of awards and exhibited in one-man and group shows in museums and galleries across the U.S. and in France.

William Conroy is a second-year PhD student in urban planning at Harvard University. His research engages broadly with the history of capitalist urbanization in the United States, the relationship between race and capitalism, and socio-spatial theory. His contribution to this volume builds on research undertaken while he was a master's student at Oxford's School of Geography and the Environment. You can reach him at williamconroy@g.harvard.edu or @WilliamWConroy on Twitter.

Peggy Deamer is Professor Emerita of Yale University's School of Architecture and principal in the firm of Deamer, Studio. She is the founding member of the Architecture Lobby, a group advocating for the value of architectural design and labor. She is the editor of *Architecture and Capitalism: 1845 to the Present* and *The Architect as Worker: Immaterial Labor, the Creative Class, and the Politics of Design* and the author of *Architecture and Labor*. Her theory work explores the relationship between subjectivity, design, and labor. She received the Architectural Record 2018 Women in Architecture Activist Award.

Massimo De Angelis has been researching and writing around themes of commons, capitalism and social change for several years. His latest book is entitled *Omnia Sunt Communia*. *On the commons and post-capitalist transformation* (ZED Book, 2017). He is Emeritus Professor of political economy at the University of East London.

Rosetta S. Elkin is a landscape architect, educator, and practitioner known for her close reading of

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Stefan Gruber is an Associate Professor at Carnegie Mellon's School of Architecture, where he chairs the Master of Urban Design. His design, research, and curatorial work explores the intersection between architecture and urbanism with a particular focus on practices of commoning and the political as articulated in the negotiation between top-down planning and citizen-led transformation of cities. Gruber co-authored *Spaces of Commoning* (Sternberg, 2016), guest-edited *ARCH+* journal 232: *An Atlas of Commoning*, as well as co-curated the eponymous travelling exhibition by ifa (Institute for Foreign Cultural Relations). His work has been recognized and supported by the Graham Foundation, ULI, ACSA, Akademie Schloss Solitude, Viennese Technology and Science Fund, and a Margarete Schütte-Lihotzky Prize, amongst others.

Fanny Lopez is Associate Professor of History of Architecture and Technology at the School of Architecture Paris-Est, University Gustave Eiffel. Her research and teaching activities focus on spatial, territorial, and environmental impact of energy and digital infrastructures. Her books include: *The Dream of Disconnection. From the Autonomous House to Self-sufficient territories* (Editions La Villette 2014 for the french édition), published by Manchester University Press in 2021; *The Electrical Order, Energy Infrastructures and Territories* (MētisPresses, 2019), awarded by the AARHSE Prize 2021 (French Academic Association for Research, History and Sociology of Energy).

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Constantin Petcou is an architect and semiotician. Since 1996 he has taught in various schools and universities including ENSA Malaquais Paris, University of Paris 8, Harvard GSD and has lectured in Europe, Australia, and North America. He is co-founder with Doina Petrescu of the Atelier d'Architecture Autogérée (AAA), a collective platform that conducts explorations, actions, and research concerning participative architecture, resilience, and cities' co-produced transformation. He has conducted research projects and initiated together with AAA the Rhyzom network (www.rhyzom.eu) and the R-Urban strategy (www.r-urban.net). He has collaborated on numerous publications and co-edited *Urban/ACT: a manual for alternative practice* (2007), *Trans-local-ACT: Cultural Politics Within and Beyond* (2010) and *R-Urban ACT: A Participative Strategy of Urban Resilience* (2015). AAA's work has received international recognition and numerous awards over the years including the



Building4Humanity Resilient Design Competition (2018), The Innovation in Politics Award for Ecology (2017), 100 projects for the Climate/ COP21 (2016). Zumtobel Award (2012), Curry Stone Prize (2011), and the European Public Space Prize (2010).

Doina Petrescu is an architect and feminist activist. She is Professor of Architecture and Design Activism at the University of Sheffield and has been Visiting Professor at Harvard GSD, Architectural Association, Iowa State University, ENSA Malaquais Paris, and University Ion Mincu Bucharest. She is also co-founder with Constantin Petcou of the collective platform Atelier d'Architecture Autogérée (AAA). Her research concerns issues of urban resilience in relation with urban commons, co-production, feminism, and politics of space. Her publications include *Architecture and Resilience* (2018), *The Social (re)Production of Architecture* (2017), *Learn to Act* (2017), *R-Urban Act: A Participative Strategy of Urban Resilience* (2015), *Agency: Working with Uncertain Architectures* (2009), *Trans-Local Act: Cultural Politics Within and Beyond* (2009), *Altering Practices: Feminist Politics and Poetics of Space* (2007), *Urban/ACT: A Handbook for Alternative Practice* (2007), and *Architecture and Participation* (2005).

Niklas Plaetzer is a doctoral student at the University of Chicago's Department of Political Science and Sciences Po Paris. His work is informed by the politics of social movements and explores languages of solidarity through radical-democratic and decolonial traditions of critical theorizing. Niklas' current research traces an alternative genealogy of the notion of "institution" in Francophone thought, connecting the group *Socialisme ou Barbarie* with thinkers such as Grace Lee Boggs, Miguel Abensour, and Édouard Glissant. His most recent publication is "Decolonizing the 'Universal Republic': The Paris Commune and French Empire," *Nineteenth-Century French Studies* 49, 3-4, 2021, 585-603.

Ivonne Santoyo-Orozco is an architect, historian, and theorist. She is an Assistant Professor at Bard College where she also serves as Co-Director of the Architecture Program. She is currently at work on an architectural genealogy of property regimes in Mexico. She has held teaching positions at the Architectural Association, Central Saint Martins, University of Creative Arts, and Iowa State University. Ivonne completed her Ph.D. in Architecture History and Theory at the Architectural Association, her master's degree was awarded by the Berlage Institute in Rotterdam and she graduated magna cum laude from the UDLA-Puebla in Mexico.

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Paola Viganò, architect and urbanist, is Professor in Urban Design at the EPFL (Lausanne) and at IUAV Venice. *Doctor Honoris Causa* at UCL in 2016, *Grand Prix de l'Urbanisme* in 2013, she received the Flemish Culture Award for Architecture in 2017 and the Golden Medal of Milan Triennale in 2018. From 1990 to 2014, she founded Studio with Bernardo Secchi, working on projects and visions in Europe. Since 2015 StudioPaolaViganò has won several international competitions and works on urban and landscape projects and on public spaces. Recent publications: *The Horizontal Metropolis. A Radical Project*, with C. Cavalieri, eds., 2019.

Liang Wang is an architect, urban designer, and educator. He currently teaches at Syracuse University School of Architecture as the Harry der Boghosian Fellow. He is also a doctoral candidate and previously a teaching fellow at the Harvard Graduate School of Design. His scholarship and teaching concern history and theory of urban form, space and politics of the superblock, architecture and the idea of the city in East Asia, as well as the idea of the commons and collective living. Wang holds a MAUD with distinction from Harvard GSD and a MArch from Rice University.

Alan Wiig is an Assistant Professor of Urban Planning and Community Development at the University of Massachusetts, Boston. An urban geographer, he researches global infrastructure, smart urbanization, and the form, function, and politics of urban and economic development agendas across the North Atlantic.

Yan Zhang is British Academy Research Fellow and Affiliated Lecturer at the Centre of Development Studies at the University of Cambridge, where she is leading a research project on sustainability and transformation in China (2018-2023). Zhang serves as the Director of Studies in Economics Tripos and Bye-Fellow and Tutor at Newnham College; Research Associate at China Centre of Jesus College; Visiting Fellow at Cambridge Bennett Institute for Public Policy. Zhang received her MPhil and doctorate from Cambridge. As a highly motivated economist with a strong background in public policy, political economy, and sustainability studies, she has also obtained six years' first-hand work experience in public policy and practice in the Chinese government.