



antennae

THE JOURNAL OF NATURE IN VISUAL CULTURE
SUMMER 2023

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antennae

THE JOURNAL OF NATURE IN VISUAL CULTURE
edited by Giovanni Aloï

Antennae (founded in 2006) is an independent, hybrid, peer reviewed journal. We are free to the public, non-funded by institutions, and not supported by grants or philanthropists. The Journal’s format and contents are informed by the concepts of ‘knowledge transfer’ and ‘widening participation’. Independent publications share histories of originality, irreverence, and innovation and *Antennae* has certainly been an important contributor to what will be remembered as the non-human turn in the humanities. The first issue of *Antennae* coincided with the rise of human-animal studies; a field of academic inquiry now become mainstream. Our independent status has allowed us to give a voice to scholars and artists who were initially not taken seriously by mainstream presses. Through our creative approach, we have supported the careers of experimental practitioners and researchers across the world providing a unique space in which new academic fields like the environmental humanities and critical plant studies could also flourish. In January 2009, the establishment of *Antennae*’s Senior Academic Board, Advisory Board, and Network of Global Contributors has affirmed the journal as an indispensable research tool for the subject of environmental studies and visual culture. Still today, no other journal provides artists and scholars with an opportunity to publish full color portfolios of their work or richly illustrated essays at no cost to them or to readers. A markedly transdisciplinary publication, *Antennae* encourages communication and crossover of knowledge among artists, scientists, scholars, activists, curators, and students. Contact Giovanni Aloï, the Editor in Chief at: antennaeproject@gmail.com Visit our website for more info and past issues: www.antennae.org.uk

Front cover: Andrea Conte (Andreco Studio), *Bituminose Geology*, bitumen and acrylic on paper, 2017
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Back cover: Andrea Conte, *Deep Geology*, 2018, acrylic on paper, 2018 © Andrea Conte - Andreco.org

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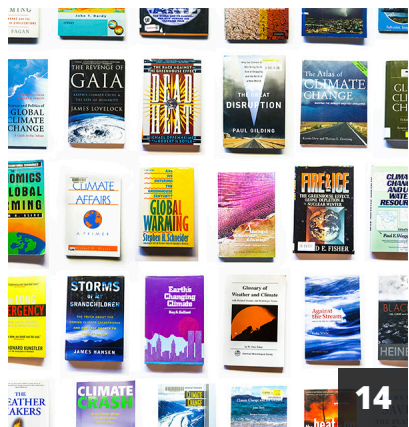
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The background of the image is a repeating pattern of stylized, grey rocks or stones. Each rock is outlined in white, creating a geometric, crystalline appearance. The rocks are scattered across the entire frame, with some appearing larger and more prominent than others. The overall style is minimalist and modern.

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contents



Underground Library

text & images: Jenny Kendler

Burned books are typically associated with censorship, and here, Jenny Kendler equates the inaction of global leadership against climate change with the censorship of the scientific community. With their warnings gone unheeded, these books are no different from other unwanted consumer products.



Devour the land

in in conversation: Makeda Best and Giovanni Aloï

Featuring approximately 160 photographs from 60 artists, the exhibition *Devour the Land: War and the American Landscape Photography Since 1970* held at Harvard Art Museum invited visitors to explore the impacts of military activity on the American landscape—and how photography supports activism in response to these effects.



Andrea Conte: art, sustainability, and the climate emergency

text and images: Andrea Conte (Andreco Studio)

Andrea Conte is an Italian artist and activist with a background in environmental engineering specializing in sustainability. His conceptual imagery is characterized by the presence of natural elements, such as rocks and minerals. Through these symbols, Conte intertwines ecology, urban planning and environmental sustainability.



Earth my body, water my blood

text & images: Gracelynn Chung-yan Lau

Will there be rooted belonging if home was a colony built on reclaimed land fill? If connecting with the earth is seeking support for healing, are nature-based therapies “resourcing” the earth just like the colonists?



In-human appetites and mineral becomings

text: Callum Bradley and Georgia Perkins
images: Caitlin Berrigan

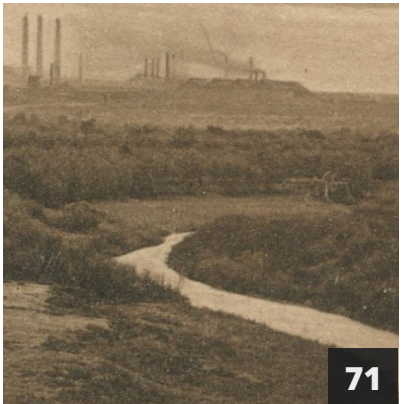
The landscape, environmental and aesthetic, is constituted in and by transformative alliances, where witnessing becomes wit(h)nessing. The reparative potential of environmental justice to attend to world-wounds, evokes a shared horizon staked in the process of destabilizing a singular gaze.



Being-in-the- breathable: atmospheres of the Anthropocene

text and images: Robert Bean and Barbara Lourder

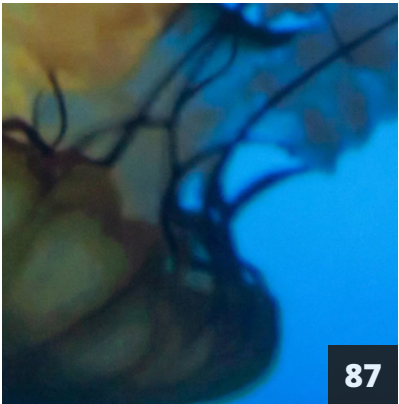
Being-in-the-Breathable, a collaborative artwork by Robert Bean and Barbara Lourder, was introduced in 2017 for the Contexts International Festival of Ephemeral Art in Sokolowsko Poland. *Being-in-the-Breathable: An Annotated Walk* responded to the earth's atmosphere as the last Commons shared by human and non-human entities. visual essay is about the first two works in the series.



Radiant absences

text and images: Darya Tsybalyuk

This artistic research focuses on vegetal histories from and about Donbas, Ukraine, a land which once was an exemplary mining region of the Soviet Union and where in 2014 the ongoing war broke out. The study engages with scholarship in paleobotany and explores the vegetal past of coal, the fossil at the heart of Donbas' history.



Joan Jonas, Moving Off the Land II, a consideration of strange strangers

text: Cynthia Haveson Veloric
images: Joan Jonas

Artist Joan Jonas's multi-media exhibition *Moving Off the Land II* transports the viewer into a liquid world where beautiful and intelligent creatures demonstrate their agency.



Circulatory entanglements

in conversation: Elizabeth Johnson, Kristoffer Whitney, Hannah Dickinson, Helen J. Bullard

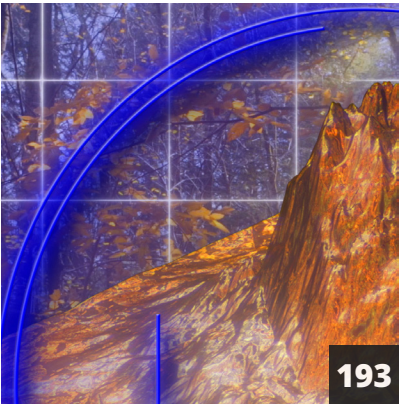
This dialogue has emerged from a project funded by the Leverhulme Trust called *Circulatory Entanglements: Marine Biomaterials and Paradoxes in Ocean Governance*. The project explores how marine organisms figure in contradictory narratives of ocean futures.



Robert Smithson: becoming geological

text: Rory O'Dea images: Robert Smithson

Robert Smithson envisioned art as a “catastrophe of mind and matter,” a physical metaphor that moves one beyond the abstract grids of intelligibility into an abyssal materiality.



A New Nature

in conversation: Mark Dorf, Paul CaraDonna, and Giovanni Aloï

Integrating gaming and surveillance aesthetics with both animations and footage of the Rocky Mountain region, Mark Dorf's *A New Nature* collapses the barriers of what's real in a way that echoes our digital consumption of the world.



Dorion Sagan's thermodynamics of life

in conversation: Dorion Sagan and Ken Rinaldo

Self-described as an artist stuck in the body of a science writer, the writer, theorist, and independent scholar, Dorion Sagan is author or coauthor of twenty-five books translated into fifteen languages, including several with biologist Lynn Margulis on planetary biology and evolution by symbiosis.

contents



Manuela Infante:
como convertirse en piedra
in conversation: **Manuela Infante and Giovanni Aloï**

Como Convertirse en Piedra furthers the task of envisioning a non-anthropocentric, non-humanist theater. A non-human theater is a critical endeavor, but also a speculative practice with other forms of organization, other forms of politics, by means of which we try to enact a kind of decolonization of the theatrical practices.



Manuela Infante
Como Convertirse en Piedra, performance, 2021 © Manuela Infante

editorial

Giovanni Aloï

“To turn to stone”. Across mythological and folk tales, this transmutation has often implied punishment of an irreversible kind. Turning to stone was an epitaph. According to myth, at Yunwitsule-nunyi (Standing Indian Mountain in North Carolina), are the petrified remains of a Cherokee warrior who was turned into stone by the Great Spirit for fleeing his sentinel post in fear. Stone, the antithesis of the human. The hardness and coldness of stone, radically opposed to the tender warmth of human flesh. The other end of the spectrum. The inferior. Less than human, but also less than animal, and even plant. Devoid of life, unworthy of it.

Those who dared to return the Medusa’s stare would be turned into stone—instantly. Poseidon transformed the Phaeacians’ ship into stone just as it approached land—the price to pay for helping Odysseus, his foe. In the Indonesian story of Malin Kundang, it was an infuriated mother who turned her ungrateful son into stone. The petrification of shame is a recurring motif. An endless reminder that one must live with the consequences of their actions.

At times, turning into stone could also take the form of voluntary sacrifice—a way out, as it was for the Vietnamese Trung Sisters who led a rebellion against China. When defeat appeared inevitable, they threw themselves into the Hat Giang River and transformed into statues. For centuries they have been worshipped in Hanoi’s Hai Ba Trung. Sometimes, turning to stone has also entailed remembrance and compassion. According to legend, a group of Apache warriors rode their horses off the Yoo’ Ligai mountain, in today’s Arizona, when faced with defeat. The tears that wives and family members cried upon hearing the news turned to stone as they hit the ground. Today, the small black obsidian stones found only in the American Southwest, which go by the name of Apache Tears, tell stories of strength and remembrance. They bind communities and protect from evil forces. Emblems of resilience—the hardness of these stones embodying the heaviness of loss and the immobilizing power of deep grief. But it is their ability to humbly ground that ultimately elevates them into emblems of sheer courage.

Time, stillness, hardness, remembrance—rocks are solidifications. Igneous, sedimentary, or metamorphic—they are aggregations of minerals that regardless of their genesis contain infinite compressed landscapes that have formed over billions of years. Layers and strata—each embedded in the other, pushing against and resisting at once, for eternity. Some much force ingrained in perfect stillness.

Oftentimes, gaining any insights into this petrified universe entails destruction. Geology, petrology, mineralogy—we have devised different ways to crack open their mysteries and read the codes. Stony mineral essence is key to form and colors. What we can see is down to scale, the myopia of our anthropocentric gaze, and our willingness. How far, how close, and through which lenses should we look? How close is too close is only dictated by the episteme and what it allows us to see and say.

Roger Caillois and Andre Breton fell out on this archetypal scientific idea—opening something to understand its workings. Breaking the rock into its mineral components or preserving the magic of the whole. Breton felt that Caillois’s approach was too closely aligned with the positivist philosophies of the Enlightenment. He thought that the poetic mystery contained within should not be mercilessly extracted, pinned down, and explained in the crude jargon of science. To Caillois, scientific methods and poetic engagements were indissolubly enmeshed. In 1934, he told Breton that newly discovered atomic

theories would radically change our conception of nature by opening up a “new form of the marvellous”. Caillois’s material mysticism eventually led him to the publication of *The Writing of Stones* (1970). A sophisticated illustrated book merging poetry, philosophy, anthropology, and mysticism in the attempt to craft a new, composite, lens through which the pictographic nature of stones could be encountered anew. What do we see, what do we remain blind to, how do we engage, and what words do we hope the encounter might extract from the existentialist depths that are otherwise denied to us? At stake is the very constitution, structure, and fabric of meaning pushing against the ineluctable persistence of nothingness. At stake is the shape of the future.

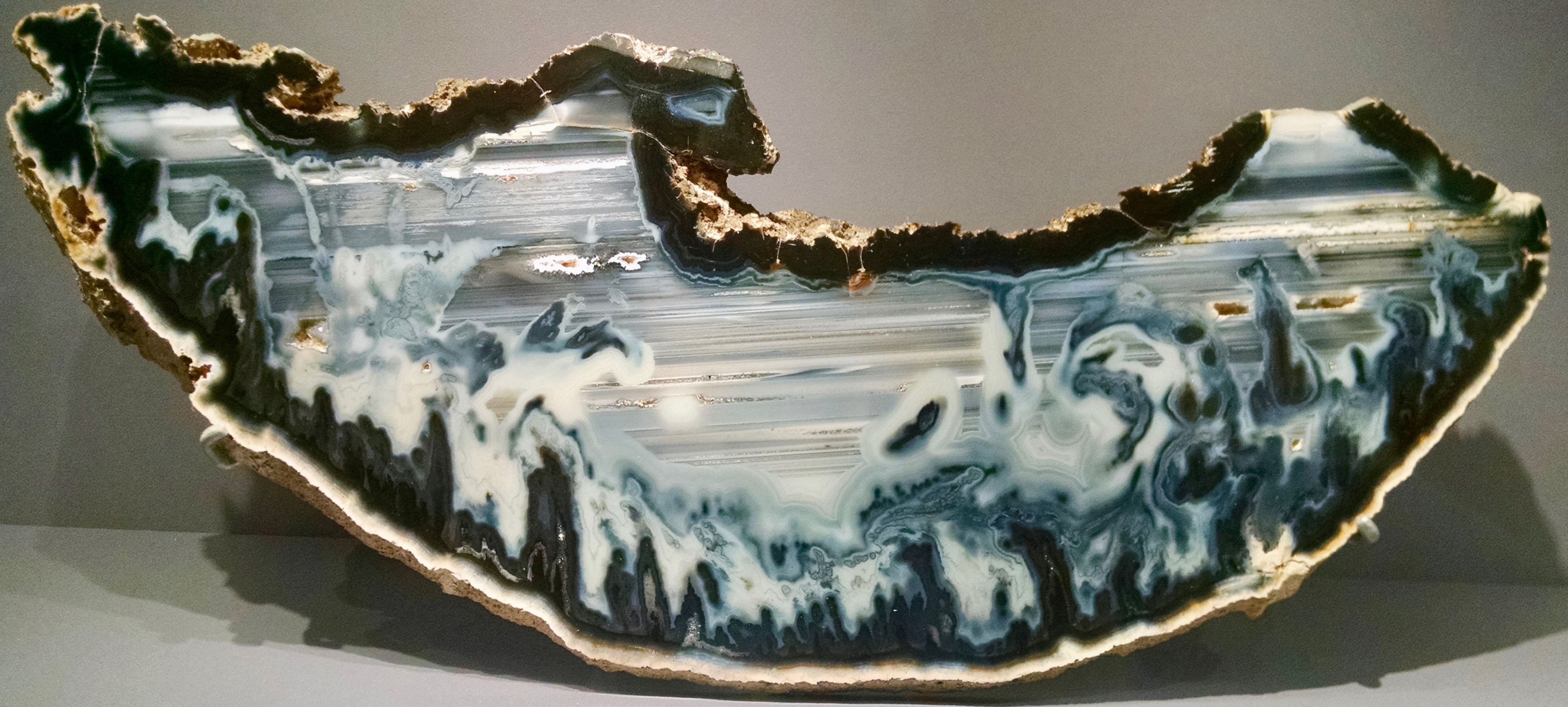
This and more is explored in the current issue of *Antennae: Earthly Mattering* which, following the previous installment (*Earthly Surfacing*) continues our journey deeper into the strata of knowledge and matter that define our existence as earthlings. Among all the extremely valuable contributions to this issue, those by playwright Manuela Infante and artist Jenny Kendler perfectly bookend the content. From altering scales and leading inquiries into deep time as an embodied dimension, they both pose radical questions about our relationships with memory and meaning. Kendler’s *Underground Library* comprises a collection of discarded, neglected, or overlooked books on climate change published across the past five decades—some of these books are technical manuals containing information that could have avoided ecological crises but that went unread, or forgotten best-sellers written at a time when reversing the detrimental effects of climate change was still a possibility. As the artist notes: “Unread, these books became graves for the words they held. Left alone, fallen trees, uprooted plants and even our own bodies eventually return their borrowed carbon to the atmosphere—unless it is removed from the carbon cycle via sequestration. Creating biochar is one way to reduce CO2 in the atmosphere by making the normally carbon-neutral process of natural decay carbon-negative”. At the end of each exhibition these petrified books are buried—their cultural silence now, at least, positively impacting the biochemical sphere in which they exist as mineral resources for other animals and plants.

Manuela Infante’s performance *Como Convertirse en Piedra* furthers the playwright’s speculative exploration begun several years ago in works like *Realismo* (2016) and *Estado Vegetal* (2017). The performance is an example of non-anthropocentric, non-humanist theatre. It counters the modern notion of humanness as the measure of all things. Infante brings pieces of eroded stories together. The fragments become landscapes stacked one upon the other as geological rock layers through different mediatic approaches that entail sound loops and narrative circularities. This creates a ‘mineral’ representation telling us something, as the playwright explains “about what is written in stones, and what stones have written in us”.

Both works, together with the others presented and addressed in this issue, outline important trajectories, materializations of opportunities to rethink our positioning on this planet and our relationship with its multiple and interlinked processes of mattering.

As always, I am indebted to all contributors, Antennae’s Academic board, and everyone else who has tirelessly lent their skills and time to the making of this issue.

Giovanni Aloï
Editor in Chief of *Antennae*



Roger Caillois

Le Vaisseau, agate, 37 x 14.5 x 2cm. Courtey of the Roger Caillois Mineral Collection



Mark Dorf

A New Nature (Video Still), 4k
Looped Video, Color, Sound,
10min 15sec, 2021
© Mark Dorf

A New Nature

A New Nature depicts the dynamics of our present – a messy, global system in which simulations are entangled with our expectations of real life, and our perception of what constitutes the natural world is mediated, supported, suppressed, amplified, and interrupted by technology.

Integrating gaming and surveillance aesthetics with both animations and footage of the Rocky Mountain region, Mark Dorf collapses the barriers of what's real in a way that echoes our digital consumption of the world. A mass of living tree roots is scanned and imposed over a simulated ocean; a mountain range is represented as a topographical blueprint.

in conversation: **Mark Dorf, Paul CaraDonna, and Giovanni Aloï**

Giovanni Aloï: Mark, Paul—can you tell us about your collaborative approach? How did it start? What brought you to work together?

Mark Dorf: Dr. CaraDonna—Paul—and I began working together at the Rocky Mountain Biological Laboratory, a remote high-elevation biological research station in the Western Colorado Rockies where Paul and his team research every Summer, in 2014, close to about 10 years ago now. We have since worked on a handful of projects together, but perhaps more importantly, we have developed a long-term collaborative relationship and conversation that bleeds into both our respective fields of art and science. The many long and wandering conversations that Paul and I have, both at the lab and over long distances, played a key role in the conceptualization of my last film *A New Nature*. In the end, this work was predominantly shot and produced at the research station and surrounding environment in the Summer of 2021.

I think what makes our relationship unique and so fruitful is that we have avoided, in my experience anyway, what is a common obstacle when an artist and a scientist work together: one is so often in service of the other. The scientist synthesizes something for the artist, or the artist illustrates some biological feature for the scientist. In this situation, there isn't a lot of cross-pollination (no pun intended).

Whereas for Paul and I there is an immense amount of trust at a very base level. We both understand that just being in one another's presence helps to push forward our pursuits and that we learn so much from one another conceptually and ideologically. When you have that openness and trust, [art and science] are bound to seep into both of our works. Art objects or collected data aside, I think creating this kind of space for intellectual crossover is incredibly valuable and important to both of us. The science and the art are more like a symptom of curiosity about the world—we have found that our curiosities can be quite similar, we just go about expressing them in very different ways.

In *A New Nature*, the primary voiceover that you hear throughout the film is Paul—this voiceover was actually a conversation that I decided to record one night in a cabin at the Rocky Mountain Biological Laboratory. Paul and I had been having an ongoing conversation about this idea of a new nature for a couple of weeks. We were really honing in on what “a new nature” meant in our current world, or what it could mean in the face of climate change, or what it means within the context of the post-natural. This two-week ongoing conversation snowballed and became the backbone of the film itself.

Paul CaraDonna: I'll add my perspective from the scientist side of the equation. Our initial collaboration began through a program that I started with another scientist, Dr. Nick Waser, at the Rocky Mountain Biological Laboratory, which we call the “Art-Science Exchange”.

The idea of the Art-Science Exchange came out of a conversation with Nick. When we are on a hike, we'll take a rest and do some sort of sketch or drawing or watercolor or whatever to slow down and take it all in. While we were doing this one day, we were commenting on the fact that it's such a totally different perspective on nature, to slow down in this way and draw a picture. And as the conversation went on, we were thinking about how at a biological research station, you have all these scientists viewing and approaching nature in a very particular way, with a very particular set of tools, and through a very particular lens. We realized how slowing down in this way gives us a very different take on the ecosystem that we know and love and have studied for years. And so we were like: “What if we had someone who could come out to the lab and their job is to bring that different perspective and share it with the community [of scientists].” And so we set out to do just that with the Art-Science Exchange.

For a little context, The Rocky Mountain Biological Laboratory is a high-elevation biological research station in western Colorado sitting at about 9,500ft above sea level. It used to be an old mining town in the late 1800s, but since 1928 it has been operating as a biological research station. And so, every summer, it turns

Mark Dorf
Emergent #7,
Carbon Pigment Print,
30in x 24in, 2014
© Mark Dorf





Mark Dorf

Reassemblage #3, Carbon Pigment Print, 40in x 80in, 2014 © Mark Dorf



Mark Dorf

A New Nature (Video Still), 4k Looped Video, Color, Sound, 10min 15sec, 2021

© Mark Dorf

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into this lively community of about 180 scientists from all over the world. It is also quite isolated: it is about 8 miles to the nearest little ski town and about 35 miles to the “big city” of Gunnison, Colorado (which has a population of something like 6,000 people). But the great thing about this isolation is that you’re isolated up in the mountains with all these scientists who are studying nature—the plants, the animals, the rivers, the geology—and that is really great for building community. I think it is a pretty special thing.

One of the key things that Nick and I envisioned with the Art Science Exchange was creating a venue and context where there could be bidirectional sharing between the sciences and the arts. We wanted ideas to flow both ways—that was really important to our vision. We were also pondering: what might be the product of such bidirectional sharing? Here we are bringing out artists for several weeks to interact with scientists at a remote field station—should they make something to hang on the wall or leave at the lab? And we decided very quickly that we didn’t want the Art-Science Exchange to be about the product. We were more interested in the process and what happens when you bring artists together with scientists in this setting. Our only expectation was that the artist comes out to the lab and interacts with scientists, spends time in the field with them, and is part of the community doing their thing as an artist and using their tools as an artist. And the scientific community at the lab was open and supportive of this idea.

So, Mark came out as part of that Art-Science Exchange during the summer of 2014 and he became part of the community very quickly. And just from that, the conversation and our collaboration began. Mark was coming out and helping us with fieldwork, asking questions, looking at scientific figures, taking photos—but we were always having a conversation about nature, the process of science, technology, art—and we were just letting the ideas flow and allowing each other to be influenced by one another without any expectation as to where it was going.

That first summer Mark created his series *Emergence*. To me, it was obvious from *Emergence* that the flow of ideas was going both ways. I learned a lot from this work in ways I wasn’t expecting. And then over the years, we’ve just kept our conversation going. When I was able to invite Mark back out to the lab in 2021 it seemed as if there was no time between his first visit. We just sort of blasted off into what felt like a continuous three-week conversation. So, we eventually recorded one of those conversations, and that is where a lot of the voiceovers in *A New Nature* come from.

For me, I think there are all sorts of things that I’ve gained intellectually from getting to collaborate with Mark in this capacity. But I also think it is important to note that the collaboration doesn’t clearly produce a new scientific paper or my next big grant proposal idea, at least in a hardcore scientific sense. But that’s not the point of this collaboration—I’m much more interested in exploring that space between art and science—I think that’s the really interesting thing here.

GA: Perhaps not surprisingly, part of this conversation has already cast a focus on “the institution”, how our thinking is defined by the restrictions that the institution imposes upon thinking, researching, and outputs. The format and substance of what we are expected to produce are still institutionally defined to the point that any true and meaningful deviation from the canonical norm is seen with suspicion or outright discounted as irrelevant.

This is particularly true of practitioners working at the intersection of art and science since so much of what it produces often does not count as legitimate research in the eyes of the institution. There has been a shift in this context over the past ten years but the change is slow.

I wonder if we can dig a little bit deeper into the idea of multidisciplinary added value – what does art add to scientific discourses? Art, in its collabora-

tions with science, never is just an amplifier of the scientific research. How did you negotiate this difficult aspect in calibrating your collaboration?

MD: Generally, Science tends to have a somewhat clearer image of its use and value. To be overly simplistic: a scientist creates a data set, analyzes it, and publishes a paper or seeks out the application of their findings in a real-world use case—the process is quantified in every way. There is a better collective understanding in the world regarding the “usefulness” or value of science. Art, however, in a general way, has a more nebulous “use”—that being said I’m by no means arguing that art is useless.

Paul and I were just recently chatting about this actually. Science does not create space to think in the same way that art does. Generally, science, however abstract, creates explicit information with the goal being to think about a subject in a concrete way. This effectively narrows the field of view to create a definition. Art on the other hand, so often seeks to create space for questions effectively opening up the field of view even further. That is, art seeks to create space for questioning without the prerequisite of an answer, or alternatively, art seeks to create the potential energy for deviation to gestate. In *A New Nature*, I gesture towards and create space for an idea, but I very consciously provide no answers. I don’t think creating answers is necessarily the role of an artist. Nor is it really, I think, the role of a scientist to give an answer per se, but one is clearly more concrete than the other or can be, anyway.

I think that that’s a really unique space for Paul and me to share. In my understanding, it’s difficult for scientists to be able to enter such a vast space of questioning without the specific intention of coming to a focused conclusive result. We have found that in sharing these different ways of seeing and perceiving the world and allowing them into our respective practices, we have a deeper understanding of the world that we’re so curious about rather than a siloed hyper-specific understanding that reflects only our respective community’s language and interests.

PC: From my perspective, something that has really stuck with me came up early in the process of working on *A New Nature*. We were chatting about something out in the field, and I asked Mark: “Do you think we should make some explicit statements about climate change, or species extinctions, or something like that?” And Mark replied: “I think I’m less interested in making explicit statements. I’m much more interested in creating a space for someone to explore a set of ideas without an explicit answer.” Mark’s answer really stuck with me at that moment about *A New Nature*, and about what art can do on its own, and also about what art can do at the intersection of art and science.

His answer also made me think a lot about how we do things in science. A lot of times in the sciences, we’re making very explicit statements about things. For example, we illustrate a figure that shows a very particular quantity of an ecosystem, something we’ve gone out and measured and can measure again, and there is really only so much interpretation of those values and trends in this context. To be clear, there is always some kind of interpretation of what those values and quantities mean, but it is much more direct. We are creating more knowledge for understanding how nature works in a very direct sense—this is a very important part of the scientific endeavor. That’s how we can accumulate knowledge—we measure things and quantify things in a very standardized way.

But it’s also only one way of knowing, right? I’ve found that when we arrive at this intersection of art and science, we get to open up new doors with regard to how we think about all the things that we think we understand—at least for me, that is the case. And I think what Mark’s work helps to do, at the least in the context of our scientific community at the lab, is to think much more broadly about what we do as scientists and how we approach understanding

nature. It causes people to slow down and think about it in a different and interesting way—to think about this place we’ve spent so much time studying in ways we maybe never have before.

As I mentioned earlier, I don’t think this experience, at least in most cases, is going to directly lead to the next prestigious paper in Nature or Science—but again, that’s not what we’re going after. I think what we’re trying to do is to shift our thinking. I think a really interesting goal is to shift perspectives. And indeed, we’ve had cases where scientists at the lab have had strong reactions to some of Mark’s work, where they’ve been like: “Hey! Wait a second, that’s not quite right!” or “That isn’t a real mountain! The geology is totally wrong!” or “Isn’t that a bit deceptive?” and things like that. And for me, as a scientist, I’ve been amazed at these reactions by other scientists. It has been totally fascinating because normally my work as a scientist isn’t going to generate such a reaction in such a way. The fact that people were responding to the work in strong ways, that it was pushing on people to challenge assumptions they’ve made about an ecosystem that some of these scientists have been studying for three or four decades seemed really valuable—something was happening here.

And on top of this, we’ve also had examples where [non-scientists] have seen [*A New Nature*] and shared that the film made them more curious to engage with ideas and concepts about, humans and nature and climate change, for example—things, they were a previously more timid to engage with. And to me, this really felt like a huge breakthrough. That the work could make someone feel like they should engage more with issues like climate change or the Anthropocene—I don’t feel like I can do this in science in the same way. Usually, it feels like someone is already on board with the information, or they’re against it in some way and refuse to engage with the information. So, in either case, you’re not getting a lot of engagement, which is not good. But then with *A New Nature*, it seems it allows for that engagement without bringing a lot of baggage in, it is not yelling at you, and it isn’t making direct statements. Mark isn’t communicating a specific scientific concept, but he’s giving us access to explore some of these more nebulous and challenging ideas about humanity’s relationship with nature and what that might look like in the future.

In science, we try to make predictions about what the future might look like, but it’s things about the composition of plants under drought conditions, for example, or maybe something about how much variation we might see in an important ecosystem service. We generally are not making predictions about human’s relationship with nature and what that might look like in a fuzzier way. And I would argue that we really need that perspective on our own relationships with nature to solve problems of the future. I think that is indeed very utilitarian. I think that’s one of the things some of this work helps to do by creating a space to think about these issues.

GA: I could not agree more. One of the questions that I am more interested in about the art and science interface is that of truth, an all-pervasive and not self-naturalizing concept in the history of civilization. The separation of nature/culture which we are only now coming to deconstruct to envision more sustainable futures. A dangerous naturalization of the concept of nature that pervaded the intertwined histories of Western art and philosophy. For instance, there is a repertoire of images, paintings, and photographs that perpetuate the same compositional tropes as well as aesthetic solutions that in a sense repropose a kind of nature that is relentlessly remote, inaccessible, perfected, objectified, and subjugated. There are many famous examples, of course, like John Constable, who perfected the British countryside, at a time in which the Industrial Revolution was devastating the bucolic beauty of the ecological balance of Great Britain. Other very famous works by William Turner, still in that representational camp, capture a picturesque image of nature that’s in a sense under human control in

one way or another. These paintings “naturally” deploy a repertoire of aesthetic/rhetorical devices, implicit codes, and compositional tropes, that imply human centrality and supremacy over the natural world.

The point of view is one of the most telling and simpler rhetorical devices that the whole artistic genre of landscape painting relies upon. In this painting by Constable, the light, the sunshine bathing the horizon, which invites the viewer to engage in a metaphorical journey from darkness to light—these paintings are imbued with Christian morals—produce an all-pervasive type of highly seductive artificial beauty we have come to call nature.

It is characterized by a sense of calm, an illusion of control. And we know, of course, that nature is rarely if ever like that. This vision of calm control and peace is the result of this fictitious separation between humans and the rest of the non-human world. More recently I came across the work of Dawoud Bey, one of the most influential photographers of our time, whose work helped me to better grasp the insidiousness of these aesthetic paradigms and their ability to naturalize. This naturalization process is not race-blind. The point of view that has relentlessly shaped the representation of the Western landscape and with that our very idea of nature, is situated in the whiteness of the straight wealthy, male, landowner who commissioned the paintings. A point of view that we now give for granted and that we unwittingly reproduce when taking holiday snaps, for instance. The aesthetic tropes are etched in our brains.

Dawoud Bey’s photographic series *Night Coming Tenderly Black* initiates a decolonizing process that begins with a critical appraisal of the very idea of nature as a Western construct. In my opinion, this series demonstrates how any process of decolonization is implicitly and at once embedded with a reconfiguration of nature.

Bey’s photographs visualize the ‘Underground Railroad’—a network of safe houses and locations across the Cleveland and Hudson, Ohio landscapes in which fugitive slaves could find shelter on their way towards Lake Erie and the final fifty-mile passage to freedom in Canada. Leaving people entirely out of the picture, Bey makes a plea for empathy and a political statement through images of an often eerie and ambiguous American landscape at twilight. Across the series, images of trees and forests evidence the roles race and white privilege play in defining networked vegetal identities.

Bey’s images of forests are strikingly different from those constructed by white photographers or from the landscape paintings made since the 18th century. They are ambiguously quiet and unnervingly enigmatic. They are simultaneously yesterday and today—places of temporary shelter for the fugitive slaves dreading to cross open lands by day and insurmountable barriers or inescapable labyrinths where lives can be lost.

Paintings by John Constable and other artists are aesthetically underpinned by the notion of land ownership and privilege. The paintings are the manifestation of the commercialization of art as an ideological tool of the new mercantile/landowner class. Colonization and capitalism are the matrix of the idea of modern nature in the West.

I’m interested in the way in which you, Mark, and Paul, deploy different aesthetic languages to offset this tradition of the Western landscape as truth, as given, and in the process, you construct something other. Can you want to tell us how that works; How you craft your aesthetic language and what you think it does?

MD: The idea of truth in the context of the landscape has been one that I’ve been thinking about for a very long time—throughout really all of my work for the last 10 years. In my work, I am not only looking at the concept of nature, or what we call nature in Western culture, through the lens of ecology and science but also through technology and design. Giovanni, you just brought up the history of Western landscape painting and the idea of nature being imaged as remote or sepa-



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rate—something over there, not over here. *A New Nature* has a way of simultaneously creating a version of nature that is far away, referencing the classical notion of Nature, while also bringing it very close through the design elements that are constantly entering and exiting the images. For example, at the beginning of the piece, the viewer finds a 3D chrome form reminiscent of a landscape that is in constant motion surrounded by bright blue formal design elements. These design elements and accompanying sound effects that are experienced throughout the work gesture towards interfaces found in the operating systems and apps of our personal devices.

These experiences are quite close to the user, literally found at the fingertips. When looking at an image of a landscape on a personal device, or when one takes a photo of a landscape with our personal device, you're looking through all these different interfaces. It should be noted that these interfaces, and their designs, are absolutely political in their function: they dictate navigation within the digital sphere. At this moment there is a collapse of space where the user is both far away from the subject—literally in that there is space between the user and the subject being photographed, but also metaphorically in that, the user is likely focused on the image, not the sensory experience that they are imaging—and very close as the subject has been rendered on the screen in their hands. Regardless, the image and subject are experienced in the presence of the operating system and its language of design, the different platforms that this image will be shared on, the different people that it will be shared with, etc. The image is never seen as an image alone, but as an image in the context of all these other visual languages relating to navigable political design—at this moment the platform,



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surrounding design, and device become part of the image itself. I argue that this is a kind of new pastoral where the device on which you see the image is inseparable from the image itself. The design elements in *A New Nature* begin to draw connections between the politicized history of landscape in Western art and the politicized nature of platforms and their design on how we are able to see, image, and distribute our experiences.

Towards the end of the film, there is a literal deconstruction when the landscape images begin to destabilize. At this point in *A New Nature*, Paul speaks about our relationship with what we call nature, and how the future of nature may not be what we want, but it's something that we should prepare for, suggesting that it might become a sort of grotesque version of itself. Through this visual destabilization and fragmentation, it becomes unclear whether the image and subject are falling apart or whether they are in a state of becoming and transformation. Through this confusion, the images are breaking down the traditional notion of the landscape image. At this moment, the interfaces and formal design elements are no longer present, and at first glance, the viewer finds a sense of relief in that they finally get what they think is a stable landscape image. But upon closer examination, the viewer begins to see that the landscape in front of them is a composite: portions of the landscape are seamlessly assembled, and other portions reveal the hard contours of the collage where the illusion is broken. Collectively a new kind of landscape image is produced that is almost pornographic, where illusion to the highest degree is present leaning into the hyper-saturated fictitious image of nature while also deconstructing that fiction by revealing its seams. The composite however is revealed in such a subtle way that you



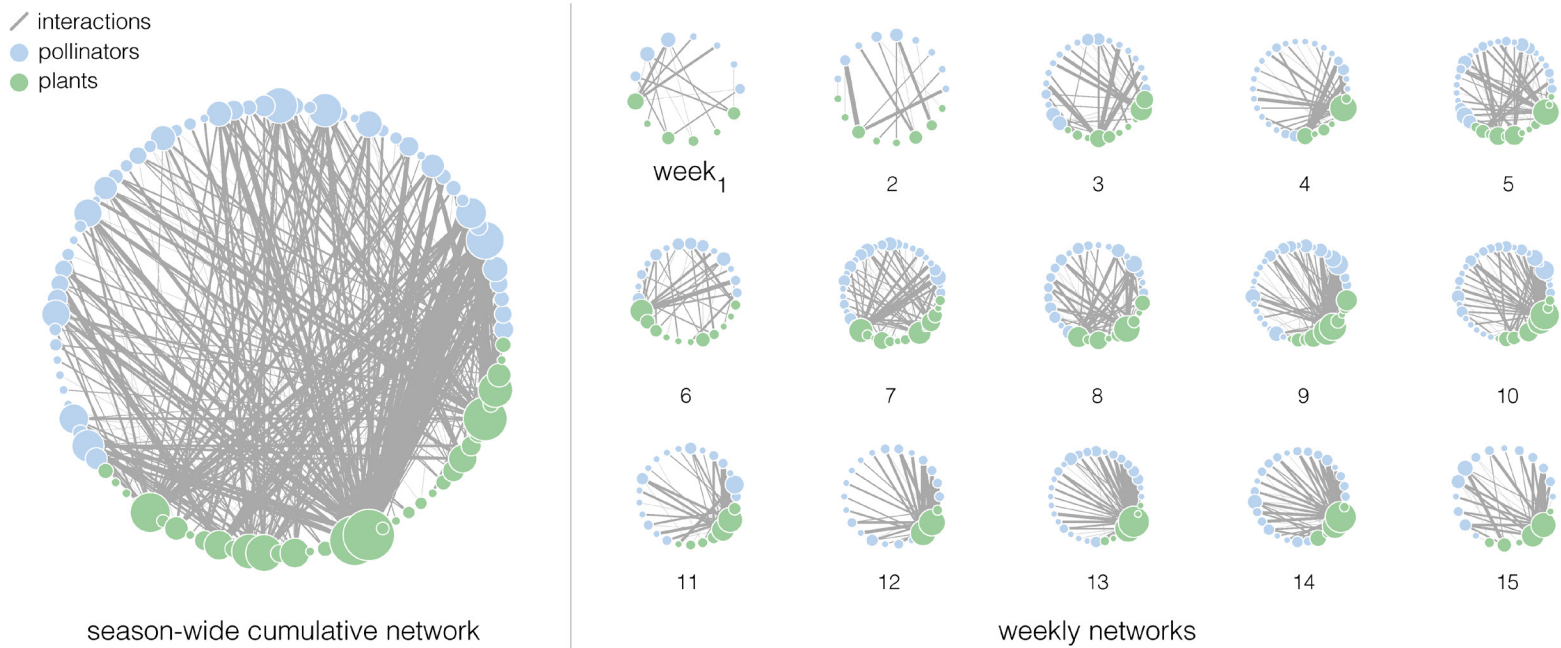
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might miss it. The combination of these techniques creates tension between these worlds. It brings them together, reveals their entanglement, but also pulls them apart. I'm constantly revealing and amplifying this tension between a sensory experience and a reality created by images. In mixing all of these elements together I gesture towards a planetary ecology that includes political systems, design, the internet, the way images move through digital space, and digital images themselves. All these elements coexist and affect one another—it's really not a future that *A New Nature* is trying to depict, a "new nature" points to the present in order to try to create space for us to think about what the future could hold for better and worse.

GA: You put on the map a very important idea: the notion of timelessness which is key to the aesthetic essence of sublime representations of forests especially, or open spaces, in Western art. Another rhetorical device that, we know, separates us from the rest of the natural—it objectifies the landscape as something to conquer. There is a romantic paradigm that relies upon an aesthetic alignment of timelessness that problematizes notions of commoditization. I am referring specifically to the design elements that you use to summon and foreground the presence of technological interfaces, in the construction of a "new nature". Our conception of nature is always mediated by some kind of technological interface. Painting is also a technological interface. We just don't tend to in common parlance, we don't tend to think about painting as technology, because in our minds technology is grounded in this modernist vision of the machine. That's when technology became industrial. But when you look at the history of technology through time and across cultures, any kind of prosthetic tool that reaches and ties me with the other; the very moment a description or interpretation of the other begins, we engage with technological representation—be it a brush, a chisel, or a pen. And the very moment you begin to describe a landscape in words, it no longer is that landscape. The very moment I use that word to define hillsides and slopes or mountains, I am representing it in a way that simultaneously makes manifest while creating distance. These are the inescapable intricacies of representation.

MD: This connection between representation and technology is directly at the heart of *A New Nature* in so many ways. You speak about how "the very moment you begin to describe a landscape, it no longer is that landscape" – this is precisely what so many of these formal design elements in the video attempt to bring to the forefront. They are a constant reminder that the image itself, the chosen material or technology of representation, is in itself a translation that contains a spectrum of biases brought on by the maker and the tools that were used. The use of paint as a technology to represent landscape is no freer from these biases than a digital image is. To think that throughout the history of Western landscape painting, because these artists used technology such as oil paint to render an image of what we call nature, the painting is more "truthful" than that of an image produced within the world of digital media, I think can be a bit shortsighted. Because of the added dramatization, compositional adjustments, as well as social and political reasons for making these paintings in the first place, I think it's safer to say that these works were inspired by the ecological world that the artist experienced as opposed to seeing them as some kind of bucolic and pastoral direct reflection. This extended definition of technology has always been something of great interest to me—technology is something that extends back further than what you called the industrialized form of technology that is more commonly understood today. I like to think about how far you can trace back the influence of these pre-photographic image technologies like painting and drawing to see how they still influence expectations of the world today. I think this is a big portion of how we ended up with what I called earlier, a pornographic version of



Paul CaraDonna
Temporal flexibility in the structure of plant-pollinator interaction networks.
2020 © Paul CaraDonna

landscape. If you make a search on Google for the Grand Canyon, you'll find images that are neon purple, orange, and blue—images that have run marathons across the internet being downloaded, saturated, compressed, saved, opened, and closed, with each action leaving scars on the image every step of the way. Eventually, you end up with an image that has nearly no basis in reality whatsoever. There is an amount of humor there—a level of absurdity, but their effects on how people expect the world to perform are real. The desire to transform these images in such a way I think stems very much from the history of Western landscape painting. To make perfect the world in front of the maker. These are the kinds of images that I try to both produce and break down in my work.

PC: I'll add to this by referencing some of Mark's past work at the Rocky Mountain Bio Lab—his *Emergence* series from 2014. I found this work to be quite fascinating by the way Mark aimed to emulate the approaches and tools and processes we use in science. What Mark noticed was that as scientists, we go out into nature and we fracture the landscape into pieces as we set up plots and transects where we measure quantities of plants and animals, photosynthetic rates, and other biological processes. In Mark's interpretation of this process, he used his scientific tool—his camera—to capture pieces of the landscape as images. Then he reassembled all these images of the landscape into his own, artificial landscape, but one that has all the things we recognize as a real landscape. What is interesting here, is that this is analogous to how we, as scientists, take all this fractured information and data from the ecosystem and reassemble it to make sense of the ecosystem, which is supposed to represent truth or reality—or at least that's the assumption. We reassemble all sorts of information, data, papers, and ideas, and in this kind of conceptual and theoretical sense, we try and create this depiction



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of truth in nature, whether it is expressed as a mathematical theory or a series of hypotheses and evidence that points in a certain direction.

With *Emergence*, Mark was doing the same thing. Take, for example, *Reassemblage #3*, which is an image that most certainly looks like a mountain. In fact, it's basically an idyllic mountain, just like one that a child would draw: It's triangular and it's got snow on the top of it. We've even had some people ask where the photo of this mountain was taken from. But when we showcased this work to scientists at the lab, several in the audience immediately objected to the image, noting with strong reactions that it was not real for many reasons: its geology was nonsensical; there were duplicate pieces of mountains within the image of the mountain; and if you look closely, you can see that many of the trees on the mountain were growing sideways. I found this reaction from other scientists to be rather inspiring and telling. When we are faced with a reflection of our [scientific] process in this way, it really challenges the way that we assemble the world and understand nature with our scientific tools. I think it also reveals how this notion of truth, of what nature is, is quite fluid. It's a construct, and it's very much mediated by the tools that we use to understand it. Sometimes I think that in the sciences, maybe we're not challenged with this kind of thing as much as we should be. For example, although we use all sorts of tools and approaches to make sense of nature, it will always remain as some form of abstraction of nature.

For example, here is a scientific figure from some of my research. What we have here is a series of ecological networks depicting which plants and pollinators are interacting with one another over the growing season in the mountains. Within the context of this work, one point we've made is that as soon as we put things together in this way—here a network diagram—we're automatically abstracting reality. There are plenty of quantitative tools that we can use to analyze these ecological networks so we can better understand their stability and robustness to change—but it's still always some kind of abstraction, no matter how we look at it! I would argue, that as a whole, I wouldn't say that science is particularly comfortable with challenging the assumptions that we make, and how we try and generalize and make sense of the world. I think it's healthy to have work that can push against this. To be clear, by no means am I suggesting that what we do as scientists is wrong. Rather, I just think it is a nice reminder that it is all an abstraction of reality in some way mediated through human cultural constructs. It is just one way of knowing the world we live in.

GA: It's a series of very interesting points, Paul. As a scientist, you navigate a very different territory, and yet one that overlaps with artistic questions. I wonder, too about the speculative dimension of what art does, and the speculative dimension of science. I have, at times, encountered resistance from the sciences in the context of collaborations that entailed the word "speculative". This resistance is particularly surprising given that always speculates at one point or another at least before it finds an epistemic path.

I might be wrong about this. You can correct me, Paul. On the opposite side of the spectrum, art is by nature speculative, at least contemporary art is—speculation is what makes art capable of seeing into the future and connecting principles, ideas, and events in ways that surpass the boundaries of classical taxonomies.

Mark said, "I don't feel the responsibility to provide an answer". Some don't agree with this idea and the discrepancy between the expectations of what science should do and what it does are also difficult to negotiate. I'm interested in this question of truth because I feel that the very idea of truth can eventually hinder our thinking and limit our relationship with the world around us. What I'm interested in is the idea of responsibility. I agree with Mark that contemporary art doesn't have to provide an answer. It would be, it feels wrong for the times in which we live philosophically, and culturally. But people expect science to produce truth. How do we negotiate these tensions in art and science projects?



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PC: I feel like I put on different hats at different times. When I'm writing a scientific paper, there are important formal constraints on how we share and present information. Everything needs to be very clear, explicit, and repeatable. It needs to be framed in the context of the field at that given time. We always have some kind of speculation and interpretation of our results in the discussion part of any scientific paper. But it is a measured amount of speculation. And of course, we have our scientific peer review process, where a reviewer might slap you on the wrist if your speculation and interpretation don't logically follow from your empirical results. But at other times, as the author, you might feel the need to push against the reviewer and make the argument that this is an important point that we need to make. For example, this is where we think the field is heading. We might be wrong, but knowledge is fluid, and we think this is where it is going. And this is our job to continue to figure out where the evidence brings us.

When I'm teaching undergraduate students, I find that there is a common notion that scientific evidence proves that some phenomenon is true. But I always counter that by saying that we don't really prove things in an explicit sense in the sciences because we recognize that our knowledge is fluid and changing in some way. We can never fully capture reality. It is sort of a subtle hint that as scientists, we know that we can't fully capture reality. But I do think that some people convince themselves that what they're learning is a pure reflection of reality. That the evidence that is found is indeed the truth. I disagree with this notion completely. It's just one perspective on reality, and if done well, and in a reproducible way, this perspective can shed light on the mechanisms of how things are working in nature. If the evidence is moving in a particular direction in a consistent manner, we start to have confidence in a prediction for the future. But we'll never really be able to put our finger on the truth.

I'm not always sure that we have these types of discussions in science as much as we should. It's one of the things that I really like about the sort of collaboration and relationship that Mark and I have. I really get to think with someone who, I would argue, is in more of a position to explore that nebulous space. I find that really stimulating because I don't get to do that with my own scientific work all that much. Personally, I don't find any of this at odds with being a scientist. I see it as a different toolkit to address different questions.

With respect to my role as a scientist, I do think it is part of my responsibility to try and figure out how to fix things [in nature]. For example, if we don't understand the problem, then how do we expect to fix it?

For example, how will climate change affect human society in 10 years or 20 years? Are we going to have wild bumble bees pollinating plants in 30 years? Is my daughter going to get to experience these amazing creatures that I have so passionately studied for so many years? I feel it is my responsibility to provide some estimate of the probability that something like this will happen or not, and why.

I also see it as my responsibility as a scientist to help people understand and appreciate the gravity of these problems without needing to understand all of the hardcore scientific details. I think it is really important to help people appreciate the amazing beauty that's out there in nature. That this world that surrounds us is something worth appreciating. And we rely on it to exist! We're part of it! To me, collaborating with Mark allows me to move into this realm in a way that feels a lot harder to do with standard scientific education tools. Nature is not just facts and quantities, there's only a subset of human society across the entire planet that can actually take in that information and make sense of it and do something about it. Even when we have a popular science article written for a general audience, so much of it gets boiled down and lost.

With *A New Nature* (and Mark's other work), we take a very different approach that hasn't distilled down everything to a few simple factoids or nuggets. I think it really gives the viewer a sense of the vastness of the problems that we're dealing with, but it also provides the viewer with the ability to navigate this vast space, and perhaps even shift their perspective or relationship with nature in some way. I think this is incredibly valuable. I'd like it to be part of my responsibility to help people explore this space.

MD: I like that you brought up the "factual", or quantitative quality in your work, Paul. It feels like you're saying that it's not always useful to think in this concrete manner. Keeping in mind that I am not a scientist, I agree with you. I work towards something similar in my own practice. Personally, I enjoy the essayist flavor of video and contemporary art that is steeped in theory, but that's not really what I'm setting out to do. Rather than quoting theory or quantified facts, in my work, I try to push a sense of emotional knowledge and emotional exploration, albeit informed by theory, towards the environments in which we live. I want to get somebody to feel something through image and sound—whether that is lens-based imagery that is supposedly "factual", I know we've talked about this all afternoon, or a 3D rendered image, or a fully abstract image—it's a unique power of art to speak directly to this emotional response as opposed to the concrete numbers based understanding.

GA: There's an important question here. It's about translation, translation of data, scientific data, translation of discourses that are too specialistic, or that employee jargon that is too cryptic to the public. These collaborations can really help make something tangible and accessible surface. Something audiences can take away and make theirs. This is important if we want to change the course of events, and if we want to effectively motivate people. It seems to me that the conversation has gone far too quickly from not caring about nature to caring about saving the planet without developing a good understanding of plants, animals, ecosystems,

and so on. This is certainly what's happened in the arts. Starting roughly with the Renaissance all the way to Romanticism, nature was dismissed as a subcategory in art and culture. The artistic hierarchy reflected Aristotle's *scalae naturae* and it prioritized anthropocentric subjects like history, mythology, and religion. Nature became a "feminine" subject—a genre lacking moral supremacy. That process of marginalization and erasure came to an end more recently at the beginning of the new millennium with the climate change emergence and the sudden rise in interest in social justice. Finally, climate change is a legitimate topic. But I think that we just rushed to the environment without really understanding the nature problem, how we inherited this concept. Where does it come from? And what we need to do in order to move past it. There has been comparatively little focus on animals and plants per se. And of course, there's been quite an amount of work done in philosophy. In truth, now animals and plants remain subcategories of climate change.

PCD: Something Mark had mentioned just a couple of moments ago was this idea of emotional maturity with our relationship with nature. In science, the tools we use to make sense of nature, truth, and predict the future, however accurate, really have nothing to do with our emotional relationship with nature. This is especially the case, for what Mark referred to as our emotional maturity with nature. Also, Giovanni, you were getting to a similar point too, that perhaps things have moved a bit too fast.

I think it's a really important point to make, and I like to think that our collaboration helps to put us in a better position to consider these kinds of ideas. Where are we with our relationship? What might it look like in the future? And, as we say in *A New Nature*: "We can't break up with nature. This is it. We're stuck with it."

I don't think we spend enough time thinking about this: whether our relationship is one that's emotionally mature. Thinking about this more and grappling with this challenge and creating the space to think about it—is incredibly important.

Mark Dorf is a New York based artist whose practice utilizes photography, video, digital media, and sculpture. Often working directly with ecologists and technologists in the production of his works, Dorf is influenced by human's perceptions of and interactions with what we call "Nature", urbanism, design, and virtual environments. As opposed to seeing these subjects as categorically separate, Dorf reveals their entanglement and integration with one another as an inclusive and lively planetary ecology. Being both self-aware and critical of their own means of production, Dorf's works craft a vision of an ecological future that navigates away from environmental collapse in the Anthropocene and imagine *A New Nature*.

Paul CaraDonna, PhD, is conservation scientist and professor at the Chicago Botanic Garden and Northwestern University. He conducts field-based ecological research at the Rocky Mountain Biological Laboratory in Colorado, USA, each summer. He and his research group focus on the mutualistic interactions between plants and pollinators as a focal system for asking fundamental ecological questions and understanding the consequences of global change. CaraDonna has published more than 30 peer-reviewed publications in scientific journals, and he is the co-founder of the Art-Science Exchange, an artist in residence project that seeks to enhance the intellectual collaboration between the arts and the sciences.

