



TORONTO BIENNIAL OF ART

THE DROWNED WORLD TORONTO BIENNIAL OF ART

CINESPHERE ONTARIO PLACE

CHARLES STANKIEVECH
GUEST CURATOR

Saturdays, 11:00 - 16:00
21 Sept – 30 Nov

Islands. Meteorites. Caves. Waves. *Agua Viva*. Spanning cosmological origin stories into a future extinction of civilization, *The Drowned World* contrasts the stretch of deep time with the cut of global ecologies and artistic resistance. Within this brave new world, the artificial boundaries of modernity's civilizations have evaporated, and life in all its forms continues to shift in ecstatic convolution. Diving into J.G. Ballard's 1962 archaeopsychic *cli-fi* novel, for the run of the Biennial, the *Cinesphere*'s spherical cinema is a world within world, mixing readings, films and sound art: genetically reconstructed screams of prehistoric creatures are echoed by the sonification of a dying star; a ritual in a palm oil plantation clashes with the submarine beats of Detroit's bubble metropolis; the sacrifice of a muskrat, the love of an octopus. In the same year the *Cinesphere* opened, Brazilian Clarice Lispector wrote in "The Waters of the World": "There it is, the sea, the most unintelligible of non-human existences. And here is the woman, standing on the beach, the most unintelligible of living beings. As a human being she once posed a question about herself, becoming the most unintelligible of living beings. She and the sea. Their mysteries could only meet if one surrendered to the other: the surrender of two unknowable worlds made with the trust by which two understandings would surrender to each other." An ark on the verge of lifting off from Ontario Place's artificial archipelago, *The Drowned World* turtles into its 1970's Utopian dome architecture before its 4th dimensional orgasm leaves ripples across the largest fresh water system on the planet.

ARTISTS

AKI INOMATA
ALVIN LUCIER
APICHA TPONG WEERASETHAKUL
ARYO DANUSIRI
BRANDON POOLE
CHARLES STANKIEVECH
CLARICE LISPECTOR
CYPRIEN GAILLARD
DARK MORPH
DREXCIYA
J.G. BALLARD
JAMES TENNEY
JEAN PAINLEVE
JULIAN CHARRIERE
JUMANA MANNA
KATARZYNA BADACH AND ALFREDO RAMOS FERNANDEZ
LISA RAVE
MARGUERITE HUMEAU
NILS-ALAK VALKEAPAA
PAULINE OLIVEROS
REVITAL COHEN AND TUUR VAN BALEN
VILLE KOKKONEN / COMME DES GARCONS
WHATEVER
WORLD SOUNDSCAPE PROJECT

Cover source image:
Boris Spremo, 1980
Toronto Star Archives
Toronto Reference Library

Far below them, the great dome of the planetarium hove out of the yellow light, reminding Kerans of some cosmic space vehicle marooned on Earth for millions of years and only now revealed by the sea.

J. G. Ballard. *The Drowned World*.

ARCHAEOPSYCHIC ARCHIPELAGO

A SPECULATIVE MAP FOR THE DROWNED WORLD



The following are islands of thinking that form a speculative map to an archipelago for *The Drowned World*. Navigation is not determined, rather trade winds and currents provide easier routes than others, but tacking against the wind originally—and still—provides a surprising lift in the journey.

ARCHAEOPSYCHIC

...so we are now being plunged back into the archaeopsychic past, uncovering the ancient taboos and drives that have been dormant for epochs. The brief span of an individual life is misleading. Each one of us is as old as the entire biological kingdom, and our bloodstreams are tributaries of the great sea of its total memory. The uterine odyssey of the growing foetus recapitulates the entire evolutionary past, and its central nervous system is a coded time scale, each nexus of neurons and each spinal level marking a symbolic station, a unit of neuronic time.



J.G. Ballard, *The Drowned World*, 1962

VOLCANOES

The first oceans on this earth were not composed of water but rather liquid rock. Without an atmosphere, the planet was a ball of gravitational fire with islands of volcanoes emerging from magma seas. Following our mythological imagination, the period was deemed Hadean, referencing the hellish fires of the underworld Hades. Ironically, volcanoes are the place today where you can witness not the oldest parts of the earth, but rather the newest development in the firmament. If you’ve ever climbed an active volcano, with sulfur gas clouds, steaming ground and deafening sounds, one feels the earth is vibrantly alive. They develop their own ecosystem with their own rapidly change weather, erasure of biomes, and new soil. Often volcanoes activity results in the genesis of a new island; they create a new microworld. Within our limited direct observation, new emerged islands are an interesting case study for species population. In one case, in south-east Asia, Krakatoa’s eruption in 1883 provides a biological *tabula rasa*. But within nine months, a spider was discovered on the volcano, parachuted in from an air current on which insects had been discovered to be floating as jetsam five kilometers high in the atmosphere. A quarter of a century later the island had been colonized by birds and reptiles, mollusks and insects. Dutch scientists determine that ninety percent arrived by air, the rest perhaps on floating driftwood.

METEORITES

When we think of evolution and meteorites, we usually think of the catastrophic event of a meteorite striking earth and wiping out the dinosaurs. Perhaps this is because it existentially feels the most relevant; at any moment a similar collision could end our own species’ existence. But an antithesis to the destruction of all life on earth by a meteorite also exists in several of the theories of the origin of life. One theory posits that the earth’s oceans, which provided the primordial soup for life to begin, are the collection of water delivered by a great bombardment of icy comets. Further theories of meteor bombardments are speculated to have created the planet’s atmosphere: either by their impact causing seismic activity that created volcanic eruptions releasing a variety of gases to create an atmosphere, or the impacts into an already existent ocean could have created a vaporous atmosphere. In either case, a newly created planet earth, now with an atmosphere, was necessary to create a hospitable environment for life to spontaneously emerge. Finally, there is the theory that life on earth did not spontaneously emerge (either from lighting strikes, deep-sea volcanic vents or terrestrial magma systems), but rather was seeded from an extraterrestrial source via a virus hitching a ride on a comet.



Vilém Flusser, *Vampyroteuthis Infernalis*, 1987

ARK

One of the most common myths around the globe shared by a variety of cultures is surviving the event of an epic flood: Nanabush in Anishinaabe stories, Noah in the Bible, or Manu in Hindu myths. In these stories, the whole earth is flooded and the world is repopulated. The geological record hesitates to tell the exact same story of total global submersion, but the planet has mostly been covered at one point or another with water — between ice ages, catastrophic events and tectonic shifts. Over half of the world as we know it today is covered by deep ocean that hasn’t seen any light since the oceans were first created. Noah’s ark created a genetic collection of earthbound species so they might survive the watery apocalypse. Today, the Norwegian government has created a Seed Vault on the remote Arctic island of Svalbard. Repurposing a mine deep in the side of a mountain, communities from around the globe have stored indigenous seeds, fearing their extinction brought about by monocrop cultivation, environmental collapse and a conflict scorched earth. Since the vault is deep in a permafrost landscape, it was unforeseen that global warming would create an unstable landscape around the mine itself, which has recently flooded.

CAVES

Caves are all interior; they have no exterior. Unlike architecture (built by animals, including humans) that can be surrounded and framed as an object that contains space, a discovered cave has no shell. On the other side of the cave wall lies not an exterior but the underworld; both literally and transcendently. Subverting twentieth century Eurocentric theories of art and racism based on the first discovery (or rather rediscovery) of caves situated in Europe, chthonic lacuna were incorporated into historical narratives from every inhabited landmass: Africa, Asia, Australia, and the Americas. Modernity’s dual drive of colonialism (which assimilated additional archeological sites around the globe into a comparative theory) and scientific advancement (in geology and radiocarbon dating) has both dramatically elongated the temporal epoch of Paleolithic Art along with a host of updated speculative theories. The earliest marks are not representations of animals but handprints—by mostly females, further challenging the canon and undoing default patriarchal claims about the origin of art. While technology has dramatically increased certain analysis of such sites, it has been important to continually return to the sensory experience of the caves to speculate on any meaning. Unlike the flash photography in textbooks, the spaces would be experienced as infinitely dark with only glimmers of localized illumination. The deep placement of much art signifies an intentional journey to produce the marks and not a simple passing of time during shelter. With reduced visual perception deep in the caves, the acoustic senses would be heightened, such as when navigating at night. Importantly, a correlation between the most acoustically resonant locations in caves coincides with drawings and mark marking, linking the drawings to musical or ritual practices. From the beginning of the twentieth century, writers (including Georges Bataille through to contemporary anthropologists) have imagined such marks should be interpreted as part of spiritual rituals akin to shamanism. In other words, Paleolithic art was no longer seen as fearful scratches against a chaotic void, but formative creations, oscillating between the first material expressions of thought or, more radically, the creation of the images that *generated* a new order of consciousness and society. Interpreted contextually, the undulating surface of the caves was not a canvas but a thin membrane between the artist and the spiritual underworld. The hand prints in this way are not symbols but the remains of a ritual in which sprayed pigment, and not paint as we think of it, sealed the hand into the wall—the hand becoming invisible against the rock surface, penetrating into the underworld. With a cosmology that believed in a tiered world of above and below, rituals became the events where such worlds connected. These unique caves were not a shelters but portals to the underworld that at times in its darkness (with a multitude of glow worms clinging to the roof) might converge with the infinite space of the stars or the depths of the ocean, swirling with bioluminescent plankton.

HALLUCINATIONS

Cosquer Cave was discovered in the late eighties via a deep underwater tunnel on the south coast of France. The cave is one of the preeminent sites for cave art, with hand prints and animal drawings dating back 29,000 years. The site has been so well preserved because the entrance—once opening onto a beach—now exists well below sea-level due to melting glaciers and warming oceans. Paradoxically, because of the world’s flooding, the cave has become an ark, preserving one of history’s most exquisite collections of prehistoric animal drawings, including extinct creatures like the auk. Among the impressive menagerie, a rare example of a hybrid human with a seal’s head can be found. As an exceptional time capsule, the site is considered to be one of the earliest sites where we can trace humans making medicine (possibly poultices and medicines made from minerals scraped from the stalactites). Across the Mediterranean Sea in Algeria, drawings in caves of the Tallasi Plateau depict floating human figures with large round heads and humanoid figures with mushrooms—speculated to be earliest recorded examples of hallucinogenic experiences. While the dates of these drawings range, the oldest preserved specimens of psychedelic medicine are reconstructed peyote cactus buttons in the Shumula Caves of the Chihuahuan Desert from 6000 years ago. Hallucinations can occur forcibly via ingested psychoactive plants (or today, synthesized chemicals), but hallucinations also occur via strategies, including sensory deprivation—an environment we can speculate best created in prehistoric times using a cave. As many cultures both ancient and new can attest, the use of rhythmic sound can synchronize both a collective of people and brain waves. Studies in and outside of the laboratory have shown “that low-frequency drum beats produced changes in the human nervous system and induce trance states, which, of course, include sensations of out-of-body travel.” Alone or in tandem, such strategies can focus one’s attention on the feedback loop of the nervous system, short-circuiting its normal process, reversing the sensory-memory flow, tuning it to sympathetic forces, dissolving its sense of boundaries or even doubling its perception of the self. As it is known that animals also ingest psychoactive plants, speculations have arisen that perhaps the origin of a sense of self in our ancestors might have occurred first as a hallucination before stabilizing into the ethereal identity we call self-consciousness—a trait that might not be unique to *homo sapiens*.

PLANETARIUMS

Nothing distinguishes the ancient from the modern man so much as the former’s absorption in a cosmic experience scarcely known to later periods. ... the exclusive emphasis on an optical connection to the universe, to which astronomy very quickly led, contained a portent of what was to come. The ancient’s intercourse with the cosmos had been different: the ecstatic trance. For it is in this experience alone that we gain certain knowledge of what is nearest to us and what is remotest from us, and never of one without the other. This means, however, that man can be in ecstatic contact with the cosmos only communally. ... Men as a species completed their development thousands of years ago, but mankind as a species is just beginning his. ... One need recall only the experience of velocities by virtue of which mankind is now preparing to embark on incalculable journeys into the interior of time, to encounter there rhythms from which they shall draw strength as they did earlier on high mountains or on the shores of southern seas.

Walter Benjamin, “To the Planetarium,” 1928

DOMES

In the middle of the middle of the volume of Peter Sloterdijk’s trilogy on the metaphysics of spheres, he indulges in a short excursus about the history of domes. Starting with the most ancient example, he traces a lineage from the spherical architecture of the Pantheon, which portrays a pantheistic concept of half an underworld and half a heaven, through the monotheistic raised dome of the Medieval cathedral atop pillars escaping the earth, into the modernist commercial glass roofs of the atheistic shopping arcade. Working from cross-sections of architecture, the movement through pantheism, monotheism, and atheism is a productive one, but Sloterdijk fails to elegantly align with his double articulation of orb formation as determined by Plato: that either a transcendent force compresses a sculptural form into a sphere or, inversely, an orb is formed as radiating from a centre point. Perhaps it would have been more productive, when engaging the atheistic age of the dome, not to follow the draftsman’s stroke

into nineteenth century arcade designs, but rather into the twentieth century planetarium? While Buckminster Fuller is known as the designer behind the popularization of the geodesic dome ubiquitously used by the military, hippy culture and world’s fair pavilions, the first example of a geodesic dome was the Zeiss planetarium in Jena, Germany. Fuller, as worked out in his patents of the dome, found a third way to escape the metaphysics of Plato: the integrity of the dome was neither sculptured gravitational pressure (like keystone masonry) nor radial outward pressure (like pneumatic domes before,) but rather a balanced network of tension and compression forces that creates a membrane independent of gravity or atmosphere. The dome’s heavenly aspirations went from complementing a solid base in the Pantheon, to resting on St. Peter’s raised pillars, to the flying geodesic suspended from a helicopter. Most famously, Buckminster designed the American Pavilion for Montréal’s Expo 67 to house an exhibit of the active Apollo space missions. Shortly after in 1971, as the wave of psychedelic culture crested into immersive cinema, the *Cinesphere* was built as if floating on the water of Toronto’s lakefront amongst an archipelago of artificial islands (architecture by Eb Ziegler and landscape by Michael Hough). With an enormous parabolic screen and surround sound, the *Cinesphere* was the first permanent home of the IMAX cinema system; it projected as its first spectacle a plane flying over the Great Lakes.

ISLANDS

Waterfront property has always been coveted. As the world became richer, it not only shifted the majority of its population from rural to urban habitats, it also migrated to coastlines. Reclaimed land and artificial islands are nothing new, global trade since Venice has encouraged ports to strategically increase their shoreline. Manhattan island’s perimeter has extended over the centuries, and today the city has a 171 billion dollars in precarious flood zone real estate. Ballast used to balance the exchange of trans-oceanic trade is often used as rubble for new islands. Toronto as an international port is no exception, with parts of the world integrated into its construction via ballast. Ontario Place was created by scuttling whole ships to form an outer reef. In the twenty-first century, Dubai radically terraforms for a speculative market and China dredges up islands in the South China Sea to argue for a larger swath of sovereign territory in highly contested waters—supported by building military bases on these newest landmasses emerging from the seas. As the water warms up, the lack of ice in the Arctic allows for navigation through the ill-famed Northwest Passage, creating new challenges to Canada’s sovereignty by both China and America. The military base CFS Alert, originally a spy station at Canada’s most northern point, functions more and more as territorial outpost observing increased traffic in a region that not long ago only allowed nuclear submarines under the ice and airplanes above. Usually, climate modelers and lobbyists connect a few degrees of climate warming with an increase in sea level: a warmer ocean expands in volume and glaciers melting release vast amounts of water as they have done many times before at the end of ice ages. Strangely, in the Arctic (and Antarctica), the melting of glaciers will have an opposite effect locally; sea levels will actual decrease in these regions. Along with the massive amount of ice dissolving into the ocean, the gravitational pull of the glaciers also dissipates much like the moon’s tidal pull. Additionally, the shear lifting of weight as glaciers calve into the ocean also decompresses the ground underneath, further changing sea levels relatively. As is rightfully the focus, other regions of the world will suffer the inverse effects of fluid mechanics and atmospheric physics. Some of the most populated places in the world are coastal cities that already were subject to flooding, and continue to dig their own watery grave. In the first part of the twentieth century, Tokyo’s lack of a centralized water system required citizens at the time to pump well water from aquifers that resulted in the city sinking four meters. Jakarta, Indonesia is sinking at a rate of twenty-five centimeters a year in some places due to the same problem of draining aquifers (a problem not isolated to coastal areas, inland monocrop, cash crop practices are also draining aquifers across South East Asia and the subcontinent). Flooding, like all of nature, is indifferent, but while richer economies can build dykes and other engineering marvels to hold forces at bay, remote communities are often affected the most. The low laying islands of the South Pacific are seeing whole islands and communities threatened. Vanuatu’s citizens were designated the first climate change refugees by the United Nations in 2005, but the consequences are far and wide. In Kivalina, Alaska, the ice that the Iñupiat people rely on to protect their fragile barrier island is disappearing, as is their island itself.

on the phenomenon called Sheppard Tones—named after his colleague at Bell Labs—the work creates an intense anxiety with its perpetual rising, creating shifting gestalts of the listener dropping or rising within the soundscape. For the fiftieth anniversary of the work, Tom Erb, Raven Chacon and Michael Winter worked together to make a multichannel sound version specifically for *The Drowned World's* venue, the *Cinesphere* at Ontario Place (an archipelago that each year floods more and more with the rising levels of the Great Lakes).

13:27

Brandon Poole

Carla's Island, 1981

Video
04:36
2019
Courtesy the Artist

A serendipitous discovery while rummaging through archival test footage for IMAX, Poole found rare frames of what is widely considered to be the first computer generated images of water, produced in 1981 by Nelson Max. Originally rendered on a supercomputer normally used for military simulations, the source code and footage has been lost. Poole scanned the 70mm IMAX negatives to create a seamless loop of waves endlessly crashing on the beach, accompanied by a soundtrack generated out of field recordings of an anti-nuclear protest at the supercomputer's site. While the cinematic scene constructs a pastoral image, the stuck loop of Poole's video sourced from a nuclear research facility, cuts to the core of Gene Youngblood's observation made at the SIGGRAPH conference the work was first premiered: "The Simulators of the Apocalypse should be honoured to share the SIGGRAPH spotlight with noble amateurs—heroic warriors of the Electronic Age—who shall inherit the world of simulation by living in the worlds they simulate."

13:32

Kashya Badach

and Alfredo Ramos Fernández

Surfing Buena Vista

Video
3 mins
2007
Courtesy the Artists

Surfing Buena Vista documents youth in Havana, Cuba grabbing onto passing vehicles to leisurely propel them through the flooded main strip during a torrential downpour. As storm frequency and severity increases in the Caribbean, the island of Cuba is no stranger to strategies of resistance transforming challenges into a celebration of life.

13:35

Aryo Danusiri

Don't Forget to Wear A Smile

Video
5:30 mins
2018
Courtesy the Artist
Sensory Ethnography Lab and Film Study Center (Harvard) Production

Jakarta, monsoon season. Set in the house of a butcher in the riverside slum area of Ciliwung (the city's main river). While the father is at work, the children enjoy the moment. The shot was recorded a few months before the mass eviction of the area, part of the ongoing gentrification project with troublesome justification of making the city flood free.

13:43

Apichatpong Weerasethakul

Vapour

Video (silent)
21 mins
2015
Courtesy Kick the Machine

In a quiet village, a thick white vapour exudes from inside the homes, eventually taking over the whole landscape. Filmed in his home area

around Chaing Mai, Thailand, Weerasethakul's opaque dream narrative engages the darker side of land rights issues. Appropriating fumigation machines used for annual insecticide spraying, Weerasethakul creates a Surrealist film, in which an atmosphere descends on the village, drowning its people and resulting in a terrible violence.

14:04

Jumana Manna

Wild Relatives

Video
66 mins
2018
Courtesy the Artist

Manna's video follows the withdrawal of seeds from the deep storage vault on the arctic island of Svalbard to a displaced community in Lebanon affected by the crises of the Syrian war. Contrasting two different worlds and yet how they are connected, *Wild Relatives* tells a compelling story focusing on the smallest details of seeds and human emotions about how everything is connected when it comes to biodiversity, trade and conflict.

15:08

Julian Charrière

Iroojrilik

Video
21 mins
2018
Copyright Julian Charrière
Courtesy Dittrich & Schlechtriem, Berlin; Galerie Tschudi, Zuoz; Sean Kelly, New York; Sies + Høke, Dusseldorf

From out of the pages of J.G. Ballard's *The Terminal Beach* and into the landscape of the Bikini Atoll in the Marshall Islands. Charrière's video dives underwater to find military shipwrecks and then surfaces in the jungle at the foot of ruined bunkers. What remains are the remnants of nuclear experimentation during the Cold War that sustained a neocolonialism in the South Pacific — and a haunted nature that still radiates. A project created with Nadim Samman, together they also produced an accompanying novel, *As We Used to Float* (2018).

15:29

Whatever

ALMA Music Box

Video
2014
4 mins
Courtesy Whatever

The collective *Whatever* (formerly known as *Party*) worked with the scientists at the ALMA astronomical observatory to create an artistic visualization and sonification of a dying star. In order to make the sound, they designed a music box that translated the electromagnetic data into childlike notes recalling the famous tones from *Close Encounters of the Third Kind*, which were played by a child on a xylophone in 1977.

15:33

Alvin Lucier

Sferics

Audio
8 mins
1981
Courtesy the Artist

Sferics, short for atmospherics, is a sound recording of natural radio phenomena that Lucier first attempted to capture with Pauline Oliveros in the sixties. It took until the eighties, however, before he successfully developed a system that could translate the electromagnetic energy of solar radiation and lighting strikes as it interacted with the ionosphere. In Ballard's *The Drowned World* (1962), it is the destruction of the ionosphere, which protects the earth from excessive solar radiation, that triggers massive climate change.

EPILOGUE

15:42

Clarice Lispector

Waters of the World

1971
Read by Natalia Gomez
Translation Stefan Tobler
Courtesy New Directions Publishing
Ø

Written in 1971 (the year the *Cinesphere* was built), Lispector's short story lays out the themes she later develops in her mystical masterpiece *Água Viva* (1973) in which everything is connected. Literally translated as "living water" with all its mystical power, in the Brazilian dialect it also refers to jelly fish—one of the earth's most ancient and potentially deadly creatures. In *Waters of the World*, after she becomes one with the ocean, "She knows she has created a danger. A danger as ancient as the human being." With the origin of life emerging from the oceans, and each human's own life cycle beginning floating in the womb, life and death comes full circle in our current relationship to the sustainability of our oceans.

15:47

Solar Drumming

PREVIEW SCREENING

THURSDAY, SEPT. 19TH

*See above for work details.

J.G. Ballard
*The Drowned World**

World Soundscape Project
*Ocean Sounds**

Pauline Oliveros
*Troglodyte's Delight**

Marguerite Humeau
*The Opera of Prehistoric Creatures**

Apichatpong Weerasethakul
*Vapour**

Julian Charrière
An Invitation to Disappear
4K Video
76 mins
2018
Copyright Julian Charrière
Courtesy Dittrich & Schlechtriem, Berlin; Galerie Tschudi, Zuoz; Sean Kelly, New York; Sies + Høke, Dusseldorf

Shot in Southeast Asia, Julian Charrère's film *An Invitation to Disappear* records a psychosocial transcendent rave set in the fields of a monoculture palm oil plantation. A linear camera shot through nauseatingly infinite rows of trees is underpinned by the mesmerizing pulse of natural sounds and techno beats, developed together with the British DJ and producer *Inland*. The film also marks the first outcome of the artist's collaboration with philosopher Dehlia Hannah, responding to the 200th anniversary of a volcanic eruption in Indonesia that plunged the world into darkness and extreme weather—a climate cooling crisis remembered in Europe as the "year without a summer." The delirium of the rave feels increasingly alienating within the man-made grid of the plantation, culminating in feelings of unease competing with the temptation of intrigue. Fog, flashing strobes, and overwhelming sounds turn the palm grove into a melancholic party zone in which the lack of people only exacerbates the dystopian vibe.

Ø Denotes specially remastered and/or mixed for the IMAX multichannel sound system of the *Cinesphere* by Charles Stankieveh.

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THE DROWNED WORLD

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OIL

Illuminating and lubricating the modern world, the oil industry has a long history. Burning forests for fuel in the medieval era was a global endemic, whether in China or Europe (and later Brazil to replenish a barren Europe). Fossilized coal was a welcome new method of carbon withdrawal from the deposits of the earth, opening up deep time debts. With such a move, the carbon illusion first manifested. What appeared originally as a short circuiting and a greater sense of control over nature, instigated the current crisis of extreme weather and climatic disasters. As the steam engine's eclipsing of waterpower in Britain demonstrated, coal was immune to seasonal growth and drought, while oil could be stored and transported to locations with the greatest capital value and labour exploitation opportunities. Perhaps not surprisingly, the British's meddling in petropolitics we are so familiar with in the twentieth century Middle East is also not the origin of their colonial annexing of the black ooze. Burma could be considered, according to Amitav Ghosh, as the first petroleum state, with a practice of extraction and use dating back a millennium. With deposits seeping directly onto the surface of the earth at Yenangyaung, specific communities scooped and brokered the resource to supply oil for primarily illuminating lamps but also greasing axles (among a variety of medicinal and construction uses). Intervention by the British Empire in the 1850s propelled the King to nationalize the oil fields and develop an advanced oil refinement and production economy—only to finally be usurped by the British in 1885. From the Industrial Revolution to the Iranian Revolution, oil refuses to be easily controlled, slipping through the clutches of those that attempt to hold on to it, resulting instead in the scorching of nations and landscapes. Coming full circle, the paradox of oil returns to trees. In Southeast Asia today, the largest fields of oil production are again not deep in the ocean or require drilling, but instead lie on the surface, born out of jungle burning, making space for palm oil plantations. From the tar sands of Canada to the palm plantations of Indonesia, oil continues to be a site where indigenous claims, political land use and global consumer demand clash.

CLOUDS

The chemical changes which thus take place are constantly increasing the atmosphere by large quantities of carbonic acid [i.e. carbon dioxide] and the other gases noxious to animal life. The means by which nature decomposes these elements, or reconverts them into a solid form, are not sufficiently known.

	Charles Babbage, <i>On the Economy of Machinery and Manufactures</i> , 1832	
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WEATHER

If climate is the history of weather, then it’s a collection of stories and data gleaned from dusty archives to remote field stations, from oral myths to satellites. Surprisingly, one of the most important storytellers has always been the military. The weather has always been essential in order to plan and execute invasions and other military maneuvers. In more contemporary times, weather modeling in both big and small ways is intertwined with the military concern with atmosphere. Major leaps in the field of meteorology occurred in the twentieth century due to the explosion of computational power. The source of this power stemmed from the need to analyze data from the air, but not of the organic sort. Rather, air defence systems in the Cold War were developed as the first real-time processing computers to analyse flight patterns and detect invading forces. IBM’s *Whirlwind* (the world’s first computer defined as we use it today) was not built to track hurricanes as its namesake might suggest, it was built to track bombers. In the fifties, Canada and the United States built a *Joint Arctic Weather Station (JAWS)* at the tip of the Canadian archipelago under the fog of meteorology, but the station was more importantly a classified signals intelligence station to spy on the Soviets and to provide the northernmost triangulation of a radar network called the *DEW Line*. One could argue with a list longer than mentioned here, it is not a coincidence the military keeps borrowing codewords from the weather. While guarding borders and espionage are some of the greatest forces working against international collaboration (and it is often told that the world wide web we ubiquitously use comes out of military resources), inversely, controlling air traffic and modelling climate has been among the greatest forces for creating global networks, such as the Intergovernmental Panel on Climate Change (IPCC). The atmosphere can only be understood if approached from a global perspective with global participation. Climate is not

local. Where originally climate studies was born out of national infrastructure that only states could afford to invest in (often directly under the control of colonial and military logistics,) the future of climate data is shifting more and more towards the megacorporations that can afford satellite launches . Such a pooling of data also means it’s for sale to the highest bidder. It serves to remember that one of the most bombastic counterculture movements in the was called the *Weather Underground*.

FEEDBACK

There are few theoretical models that went as viral in the last century as feedback. Biologist Jakob von Uexküll in the twenties established a diagrammatic understanding of a looping feedback between the organism and the environment. Basic biological theory now agrees there are two feedback loops: 1. an organism senses the world and reacts to the world, this reaction changes the world and in turn is newly sensed by the organism, thus creating a new reaction, and so on; 2. this loop into the underworld must be copied as an innerworld loop in the nervous system to register the organism’s own actions. Without this second internal loop, the organism would not be able to distinguish between what has changed in the environment from external causes, and what has changed due to its own actions. Or inversely, it might mistakenly think the world has rotated around itself, when in fact the organism has only rotated its own view. Nervous systems of all sorts have evolved different feedback loops, optimizing for various functions from breathing to mobility. The hunting of prey combines several feedback loops as well as a higher order of predictive feedback. Philosophers posit this predictive process might be one of the steps to the origin of consciousness: to predict the future actions of prey, the position of the self must be accounted for. Prey evading predators similarly entails positing the intentions of the hunter, self-consciousness derived from a strategy of positing minds in others. A few decades after von Uexküll sketched out his theories, Norbert Wiener (who for a stint was a zoologist grad student but eventually focused on mathematics) worked during World War II on the problem of air defense: How does one control in real time the trajectory of anti-aircraft fire when the target is continuously moving? Out of this project, he developed a systems theory of feedback which became the backbone for the field of cybernetics. By the time the West Coast counterculture movement demanded to see a *Whole Earth* image and inspire the environmental movement in the sixties, the concept of ecology was based on computational feedback—literally applying ecology models to a landscape by processing it in a circuit board. “Nature” moved beyond entropic theories into sets of data to be managed as closed worlds. Silicon Valley, as a Brand, dreamed of an upgrade from a carbon mine. The most powerful form of artificial intelligence based on deep learning, which is modeled on neural network feedback loops, is now utilized for everything from optimizing consumer services to revolutionizing weather forecasting. On the immediate horizon, Luddites fear losing jobs to the thinking machine; on the far horizon, the terror of the immortality of the one percent if they can upload their consciousness into synthetic circuits or transplant cerebral organoids.

EXTINCTION

While the biodiversity of the earth flourishes with its vastly different ecosystems, the frank reality is that ninety-nine percent of the species to have ever swam, crawled or flown on the planet have already gone extinct. On the dark side, the odds on surviving are not that favourable, but on the bright side, the planet over time has had an incredible range of mutations in constantly shifting climates. The pressing question is about the future. Normally extinction occurs at a slow rate for each individual species with a life span of about one to ten million years before a variety of factors snuff out its genetic identity. Occasionally, mass extinctions occur that cross the boundaries of a species and affect whole food chains, ecosystems and biomes. Major volcanic eruptions disrupting the atmosphere or asteroid impacts are the popular theories in some of the five mass extinctions registered in the geological strata. Currently, scientists are describing the onslaught of a sixth great extinction — but this time the cause is internal and caused by one of the species: *Homo sapiens*. Many Anthropocene arguments anchor the inflexion point with the rise of capitalism and fossil fuel burning in the Industrial Revolution, but *Homo sapiens* have a much longer rap sheet when it comes to wiping out their planetary cohabiters. For the most part, with every new home *Homo sapiens* colonized they wiped out mass populations of megafauna. Evidence is easiest to track on an island where, after

leaving their birthplace of Africa for Madagascar and Australia, then the South Pacific, one by one each biome was devastated by the presence of humans. New Zealand, only first touched by humans 800 years ago, provides the clearest record of human arrival decimating the local ecosystem. The Americas were no exception to a mass extinction of most large mammals, coinciding with when humans first arrived millennia ago (though the debate still continues about the causes of extinction: human or climate change, or most likely a complex combination). Ironically, much later, some species, like horses, were replenished by long extinct relatives with the arrival of European colonizers, although of course along with much more damaging invasive species, including themselves, echoing once again the regular devastation of newly contacted worlds. The exception to the basic outcome of *Homo sapiens* versus all other mammals occurred on the connected mega landmass of Africa-Eurasia where humans evolved alongside large mammals—each in turn countering each other’s adaptive evolutionary turns. A combination of factors—such as overhunting, disrupting the food chain and the destruction of habitat for agriculture and terraforming—has long been the source of blame for the current extinction of a broad range of species. And as technology in food production and medicine has exponentially maintained human population growth, the effects are felt more and more. Paradoxically, in evolutionary terms, humans have had an inverse effect on certain species. The most successful gene pools on the planet, if counting biomass is a factor of evolutionary success, are humans and their domesticated DNA, such as wheat, cattle and chickens. Livestock accounts for double the mass of humans and the world’s population of chicken tallies around 23 billion. The domestication of wheat considered to be the catalyst for sedentary civilizations in the Golden Crescent has evolved to have five times the amount of DNA as compared to humans, arranged in a robust hexagon structure. With humans accelerating species extinction rates by 100 times, *Homo sapiens’* 200,000-year-old age suddenly faces an expiration date.

PULSARS

In 1967, Pulsars were discovered and first thought to be signals from aliens because of their regular radiating patterns. Eventually astronomers deduced they were instead a fast-rotating neutron star and not radio signals. As America’s frontier continually expanded beyond the West Coast and the South Pacific into outer space, it followed a line of ideological friendly first contact myths, such as the Hollywood blockbuster *Close Encounters of the Third Kind* (released in 1977). Outside of the fictional world of aliens trying to communicate with humans (also in 1977), Carl Sagan famously organized the “Golden Record” as an artifact to be placed on the *Voyager* satellites. In the shape of a musical disc, Sagan attempted to crystalize a portrait of humankind in the hopes it might be found by an intelligent being outside our solar system. A rare project that seemed to be an alternative to the normal military industrial complex trajectory of space research at the time, the *Voyager’s* message in a bottle tossed into the cosmic ocean is unlikely to finding intelligent extraterrestrial life—especially before human beings become extinct. The gesture at best might serve as the satellite encountered in *Star Trek’s* episode “First Light,” where humanist Captain Jean-Luc Picard discovers a probe from a planet with a civilization that has gone extinct because of climate change. A culture evaporated by a desiccated planet, Picard’s hallucinogenic encounter with the probe leaves him as the sole witness to their vanquished civilization--the only remnant of their culture passed on by his learning to play one of their musical instruments.

AGUA VIVA

It’s with such profound happiness. Such a hal-lelujah. Hallelujah, I shout, hallelujah merging with the darkest human howl of the pain of separation but a shout of diabolic joy. Because no one can hold me back now. I can still reason—I studied mathematics, which is the madness of reason—but now I want the plasma—I want to eat straight from the placenta. I am a little scared: scared of surrendering completely because the next instant is the unknown. The next instant, do I make it? or does it make itself? We make it together with our breath.

	Clarice Lispector, <i>Agua Viva</i> , 1973	
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CHARLES STANKIEVECH

Written at Mount Etna, Sicily and Toronto, Canada.

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THE DROWNED WORLD

BIOS



AKI INOMATA is an artist and visiting researcher at Waseda University. Focusing on how the act of “making” is not exclusive to mankind, she develops collaborations with living creatures into artworks. Her major artworks include *Why Not Hand Over a “Shelter” to Hermit Crabs?*, in which she created city-like shells for hermit crabs and *I Wear the Dog’s Hair, and the Dog Wears My Hair*, in which the artist and her dog wear capes made out of each other’s respective hair. Her recent exhibitions include *The XXII Triennale di Milano*; *Broken Nature: Design Takes on Human Survival*; *Aki Inomata*, and *Why Not Hand Over a “Shelter” to Hermit Crabs?*, at Musée d’arts de Nantes, France, 2018.

ALFREDO RAMOS FERNANDEZ was born in 1964 in Havana. He lives and works in Berlin. He earned a Geography graduate degree and worked for a time as a researcher at the Academy of Sciences of Cuba. From 1993 to 2001, he worked with theater groups, but in 2001 he devoted himself entirely to his photographic work. Recent exhibitions include *Fabrica de Arte Cubano*; *ESMOA*, California; *Das Esszimmer Raum für Kunst*, Bonn; *Robert Mann Gallery*, New York; *Jenkins Johnson Gallery*, San Francisco; *PuNcTuM Espacio*, Mexico City, as well as the *Fototeca de Cuba*, Havana. He is represented in the collection of the *Museo Nacional de Bellas Artes*, Cuba among other collections.

ALVIN LUCIER has pioneered in many areas of music composition and performance, including the notation of performers’ physical gestures, the use of brain waves in live performance, the generation of visual imagery by sound in vibrating media, and the evocation of room acoustics for musical purposes. From 1968 to 2011, he taught at Wesleyan University, where he was John Spencer Camp Professor of Music. Alvin Lucier was awarded the *Lifetime Achievement Award* by the Society for Electro-Acoustic Music in the United States, and received an Honorary Doctorate of Arts from the University of Plymouth, England.

APITCHATPONG WEERASETHAKUL lives and works in Chiang Mai, Thailand. Working in the space between cinema and contemporary art, Apichatpong Weerasethakul creates installations, videos, short and feature films that are often non-linear and transmit a strong sense of dislocation and otherworldliness. Through the manipulation of time and light, Weerasethakul constructs tenuous bridges for the viewer to travel between the real and the mythical, the individual and the collective, the corporeal and the chimeric. His art projects and feature films have won him widespread recognition and numerous festival prizes, including three from the *Cannes Film Festival*.

ARYO DANUSIRI is a video artist and anthropologist. His works have been exploring the mobilities of keywords, violence, and memory in reconfiguring the political and social landscape of post-authoritarian Indonesian in 1998. Those works have been exhibited both in theater and gallery settings including (selected) *Yamagata New Asia Current* HKW Berlin; *Camera Austria*; *Ethnographic Terminalia*, Toronto; *Mead Festival NYC* and the *2014 Whitney Biennial*. At present, he is completing his Ph.D. in the Social Anthropology program and Sensory Ethnography Lab (SEL) at Harvard University.

BRANDON POOLE is a Master of Visual Studies candidate (2020) at the University of Toronto. He graduated with a Bachelor of Fine Arts from the University of Victoria. He was shortlisted for both the 2016 and 2017 Presentation House Gallery’s Phil B. Lind Emerging Artist prize. and is a recent recipient of a Social Science and Humanities Research Council (SSHRC) grant.



CHARLES STANKIEVECH diverse body of work, which includes installations, curatorial projects and performance lectures, has been shown internationally at institutions including the Louisiana Museum of Modern Art, Copenhagen; Palais de Tokyo, Paris; Haus der Kulturen der Welt, Berlin; National Gallery of Canada, Ottawa; Thyssen-Bornemisza Art Contemporary, Vienna; Musée d’art contemporain de Montréal; Canadian Centre for Architecture, Montreal; and *documenta*, and the Berlin, *Venice* and *SITE Santa Fe Biennials*. He was twice a finalist for the Sobey Art Prize, and his curatorial project *CounterIntelligence* and his solo exhibition *Monument as Ruin* won OAAAG best exhibition awards, in 2014 and 2015 respectively.

CLARICE LISPECTOR (1920-1977) was born to a Jewish family in western Ukraine. As a result of the antisemitic violence they endured, the family fled to Brazil in 1922, and Clarice Lispector grew up in Recife. Following the death of her mother when Clarice was nine, she moved to Rio de Janeiro with her father and two sisters, and she went on to study law. With her husband, who worked for the foreign service, she lived in Italy, Switzerland, England, and the United States, until they separated and she returned to Rio in 1959; she died there in 1977. Since her death, Clarice Lispector has earned universal recognition as Brazil’s greatest modern writer.

CYPRIEN GAILLARD studied in Lausanne and lives and works in Berlin. He has been the recipient of a number of awards, including Melbourne International Film Festival Award for Best Experimental Short and the Preis der Nationalgalerie für junge Kunst. Solo exhibitions include: MoMA PS1; Hammer Museum, Los Angeles; Centre Georges Pompidou, Paris; KW Institute for Contemporary Art, Berlin; and Tate Modern, London. Major group shows include the *Venice Biennial*; *Biennale de Lyon*; *Gwangju Biennial*; and the *Berlin Biennale*.

DARK MORPH is the project name for Jónsi Birgisson and Carl Michael von Hausswolff’s work, developed between 2018 and 2019, as an attempt to collaborate with inhabitants, environments and activists concerned about catastrophic pollution and the destruction of the oceanic world. The name Dark Morph is taken from a type of Fijian heron. Dark Morph is in collaboration with TBA21-Academy. The duo’s first album premiered live at Ocean Space, an installation at the Church of San Lorenzo in Venice, May 2019.

DREXCIYA (1992-2002), a duo based in Detroit, became one of the most celebrated and influential names in American experimental techno. One of the few groups to use techno as a political tool in effecting criticism of racial inequity and inner-city recovery, *Drexciya* brought a wider social and aesthetic agenda to a style in which allegiance to the beat is typically the only prerequisite. Closely associated with the label *Underground Resistance*, and operating in the classically covert tradition of “faceless” techno (the pair’s identities remain a mystery), the music found release through such internationally renowned labels as *Warp*, *Rephlex*, *Tresor* and *Clone*.

J. G. BALLARD (1930-2009) was born in Shanghai and lived in England from 1946 until his death in London. In 1954, he was stationed with the Royal Air Force in Moose Jaw, Canada where he discovered science fiction magazines on the military base. He is the author of nineteen novels, including *Empire of the Sun*, *The Drought*, and *High Rise*, with many of them made into major films, including *Crash* directed by David Cronenberg.

JAMES TENNEY (1934–2006) was a pioneer in the field of electronic and computer music, working with Max Mathews and others at the Bell Telephone Laboratories in the early sixties to develop programs for computer sound-generation and composition. He wrote works for a variety of media, both instrumental and electronic, many of them using alternative tuning systems. He was the author of several articles on musical acoustics, computer music, and musical form and perception. A teacher since 1966, he was Distinguished Research Professor at York University (Toronto), where he taught for twenty-four years, and last held the Roy E. Disney Family Chair in Musical Composition at the California Institute of the Arts.

JEAN PAINLEVE (1902-1989) studied medicine, physics and geology. He was a pioneer of scientific cinema, who managed to defend the film medium as a serious means of research within the scientific community. From 1925 to 1982, Jean Painlevé made more than 200 films, mainly dedicated to the marine world. He projected his vision of society onto nature, giving an ironic colour to his strange and brutal films. He was a dissident of the Surrealist group and refused André Breton’s authority.

JULIAN CHARRIERE, born in Morge, Switzerland, currently lives and works in Berlin. A former student of Olafur Eliasson and participant of the Institut für Raumexperimente, Charrière has exhibited his work at the Parasol Unit, London; Musée des Beaux-Arts de Lausanne; Centre Culturel Suisse, Paris; Haus der Kulturen der Welt, Berlin; Kunsthalle Wien, Vienna; TBA21 in Vienna; Neue Nationalgalerie, Berlin; Reykjavik Art Museum, Iceland; Museum of Contemporary Art, Tokyo; *Kochi-Muziris Biennale*, India; *12th Biennale de Lyon*; and the *Venice Biennale*. Charrière was awarded the Kiefer Hablitzel Award / Swiss Art Award in both 2013 and 2015. In 2018, he won the GASAG prize at the Berlinischer Galerie.

JUMANA MANNA is a Palestinian artist whose work shifts between sculpture and film, body and land, narrative and form. Her practice explores how power is articulated through relationships, often focusing on the body and materiality in relation to narratives of nationalism and histories of place. Manna is a graduate of CalArts, Valencia and Oslo National Academy of the Arts.

KATARZYNA BADACH was born in Gdansk, Poland in 1975. Badach works predominantly in the medium of painting. She completed the Academy of Fine Arts in Karlsruhe, Germany with distinction as Meisterschülerin of Prof. Helmut Dorner in 2001. Her work has been presented internationally. Recent exhibitions include *Until we grow wings* at Galerie Raskolnikow, Dresden; *Caida Libre* at Centro de Desarrollo de las Artes Visuales, Havana; *Cubanscapes* at Christa Burger Gallery, München; and *Compositions*, Horst Merkle Gallery, Stuttgart. She is represented in the collections of the Deutsche Bank, Commerzbank and Regierungspräsidium Karlsruhe, among others. She lives and works in Havana, Cuba and Berlin, Germany.

LISA RAVE currently lives and works in Berlin/Germany. She studied film at the European Film College in Denmark and at the Universität der Künste, Berlin. In 2010, she received the Elsa-Neumann-Scholarship and was the winner of the Bremen Award for Video Art 2012/2013. Her exhibitions and screenings include: the Centre for Contemporary Art Singapore; Lofoten International Art Festival (LIAF); Arsenal Berlin; Thyssen Bornemisza Art Contemporary, Vienna; Glasmoog Cologne; Württembergischer Kunstverein; *3rd Istanbul Design Biennial*; FLORA ars+natura, Bogota; Meulensteen Gallery, New York; Chisenhale Gallery, London; Neuer Berliner Kunstverein, Berlin; Haus der Kulturen der Welt, Berlin; and *International Short Film Festival Oberhausen*, Oberhausen.

MARGUERITE HUMEAU lives and works in London. Recent solo exhibitions include Tate Britain; Museum Haus Konstruktiv, Zurich; Schinkel Pavillon, Berlin; Nottingham Contemporary, Nottingham, UK; and, Palais de Tokyo, Paris. Her work has been included in group exhibitions at the Hayward Gallery, London; Haus der Kunst, Munich; Château de Versailles; Les Abattoirs Musée FRAC Occitanie, Toulouse; High Line, New York; Kunsthal Charlottenborg, Copenhagen; *Manifesta 11*, Zurich; Thyssen-Bornemisza Art Contemporary, Vienna; the Museum of Modern Art, New York; and elsewhere. Humeau received the Zurich Art Prize in 2017, and the Battaglia Foundry Sculpture Prize in 2018.

NILS-ASLAK VALKEAPAA (1943-2001), known as Áillohaš in the Northern Sami language, was born into a reindeer herding family. He played an important role in the revitalization of the traditional Sámi yoik, which he described as: “A way to calm reindeer. To frighten wolves. The yoik is used to recall friends, even enemies.” The yoik steps into another spiritual world. He was awarded the *Prix Italia* for the composition *Goose dušše (The Bird Symphony)* in 1993 and performed at the opening ceremony for the 1994 Olympic Games in Lillehammer. He was awarded the Nordic Council’s Literature Prize for his lyrical work *Beaivi, áhčážan (The Sun, My Father)*.

PAULINE OLIVEROS (1932-2016) career spanned fifty years of boundary dissolving music making. In the sixties she influenced American music profoundly through her work with improvisation, meditation, electronic music, myth and ritual. She founded “Deep Listening” as a way of listening in every possible way to everything possible, to hear no matter what you are doing. She was the recipient of four Honorary Doctorates and among her many awards was the William Schuman Award for Lifetime Achievement, Columbia University, New York.

REVITAL COHEN AND TUUR VAN BALEN are London based artists working across objects, installation and film that explore process of production as cultural, personal and political practices. Their work was recently shown at the Renaissance Society in Chicago; Serpentine Cinema, London; Fotomuseum, Winterthur; Para Site, Hong Kong; Thyssen-Bornemisza Art Contemporary, Vienna; HKW, Berlin; Museum of Contemporary Art, Tokyo; and Congo International Film Festival. It is part of the permanent collections of the MoMA, New York and M+ Museum in Hong Kong.

VILLE KOKKONEN is a Finnish industrial designer born in Helsinki and based in Zurich. Since starting his own practice in 2004, Kokkonen has worked with leading companies in the field of design and technology, focusing on strategic design and product development, with clients such as Nokia, Iittala, Wärtsilä, Elixair, Ensto, Stora Enso and UPM. Between 2005 to 2014 Kokkonen worked with Artek, first running its R&D program and from 2008 onwards as Design Director of the company. Ville Kokkonen currently holds the position of Professor of Practice at Aalto University, School of Arts Design and Architecture in Helsinki, Finland.

WHATEVER is a creative studio that makes whatever. Based in Tokyo, New York, Taipei, and Berlin, they are a team of multidisciplinary designers, coders, engineers, and producers with years of global experience. Together, they encompass a wide-ranging gamut of technical and design skills, allowing “us to come up with dream-like concepts that we can bring to life.”

WORLD SOUNDSCAPE PROJECT was established as an educational and research group at Simon Fraser University during the late sixties and early seventies. The original group of researchers included: R. Murray Schafer, Hildegard Westerkamp, Barry Truax, Howard Broomfield, Peter Huse and Bruce Davis. Their recordings were composed first of local tapes recorded in Vancouver, then in villages across Europe and on a tour across Canada. Over the decades, the catalogue of recordings continued to increase, including returning to the same sites to measure the difference in the soundscapes due to human development.



THE DROWNED WORLD