



HUMANITIES CIRCLE

International Journal of Central University of Kerala, India

ISSN 2321-8010

● Volume 03 | Issue 02 | Winter 2015

The Anthropocene & the Human Sciences

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Design: B. Priyaranjanlal | Cover image: Aby Abraham

Printed at: Vibgyor Imprints, Calicut

₹ 200



Published by: Registrar, Central University of Kerala, Vidyanagar PO,
Kasaragod Dist., Kerala, India, Pin-671 123 Phone: +91 467 2232403
Email: registrar@cukerala.ac.in



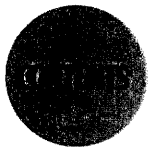
HUMANITIES CIRCLE

THE ANTHROPOCENE & THE HUMAN SCIENCES

Edited by Prasad Pannian



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Melody Jue

The Anthropocene's Negative Media

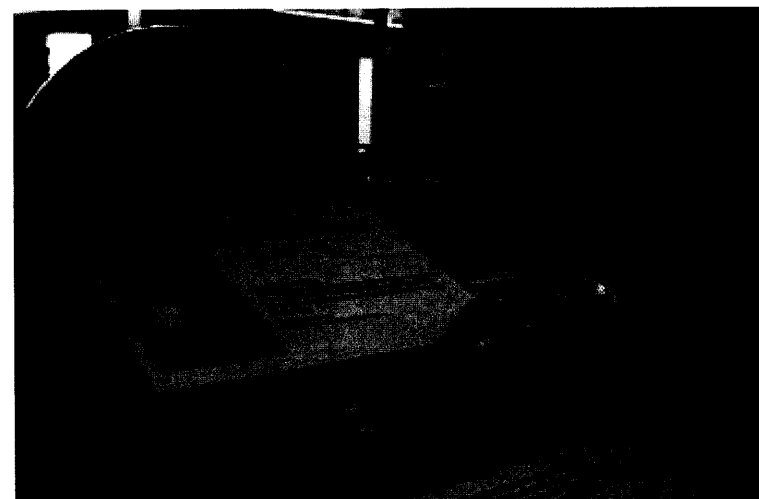


Figure 1: Fossil Elephant Bird egg and Lemur skull in the exhibit "Recording the Anthropocene," Duke University 2013.

What a big egg! My group had come upon an ancient Humpty Dumpty fossil, the size of a human head, nestled in the middle of Duke University's Fossil Primate Center. I had imagined seeing fossil lemurs at the center, but not such a

large egg, fractured into dozens of pieces that were carefully re-glued together. The egg was from a flightless Elephant Bird that had roamed Madagascar until only 500 years ago when it was hunted to extinction— an extinction so recent, in fact, that the millions of thick shell fragments can still be found strewn throughout the soils of Madagascar. Learning this, I felt robbed of the possibility of meeting such a large creature in my lifetime, of so many beginnings shattered. The purpose of the excursion, with Dr. Dan Richter and Christina Chia of Duke's Anthropocene Working Group, was to look for objects to include in an exhibit called "Recording the Anthropocene." The Elephant Bird egg drew our attention as a compelling, polysemous focal piece, a visual metaphor for the way that humanity is breaking the wholeness of global ecological systems alongside the hope that they might be reassembled.¹

As a material object, the Elephant Bird egg both exemplifies and undermines a key ideological orientation of Anthropocene discourse. The definition of Anthropocene is anchored in the field of Stratigraphy (science of rock layers) and its terrestrial conception of media, taking strata as recording media for Earth's history.² One of the primary debates amongst scientists and humanists alike surrounds the question of when the Anthropocene started, or when to place the "Golden Spike" of evidence that marks a transition in the geologic record. On the one hand, the Elephant Bird egg shards constitute stratigraphic evidence (albeit on a small scale), their existence in Madagascar soil signaling part of the broader "megafaunal extinction" that characterizes one proposed start date for the Anthropocene.³ However, while the shell fragments show how humanity's actions are forming a distinct new "layer" in the stratigraphic record, they also represent the opposite of a record: extinction, absence. The egg shards point towards a way in which the Anthropocene is not just about the deposition of a new layer of history, which presupposes a positive conception of media, but also the way in which the conceptual foundation of the Anthropocene also involves the unfurling of processes that destroy earth records and impair our ability to historically date objects. The Anthropocene attempts to name a historical shift in Earth history that is not only marked by layers and inscriptions, but also by forces of erasure and unmaking that are largely related to the anthropogenic rise of petroculture and resource extraction.

This article explores what I call the Anthropocene's "negative media." Negative media are instruments of plot disruption, breaking lines, fragmenting our ability to trace origins and string together

occurrences. They might also be called anti-media to the extent that they stand for what they foreclose the possibility of recording. They are not ontologically stable substances— like water or air— but perhaps rather processes, or anything that undoes the environment's informatic storage. Atmospheric carbon accumulation may be thought of in terms of negative media because of its role in melting glacial archives and acidifying the ocean. Negative media not only rely on a conception of the earth as a kind of medium or "book," but also *push against* the stability of the living system of the Earth as a record through their agency to dissolve gasses into water, erode away rock and soil, mutate genetic code, and other kinds of transformative processes. Negative media pose a threat precisely because they signal the disappearance of a record that would enable modern science to discover past conditions according to a linear model of history (as in records like geologic strata, the formation of glaciers, or the formation of tree rings). As Amanda Boetzkes puts it, "In this new geological epoch, the environment has become illegible."⁴ The Anthropocene thus describes a range of phenomena that straddle two conceptions of media: one where human agency is essential in shaping and marking a future stratigraphic layer, and one where human agency is complicit in dissolving, eroding, and destroying certain kinds of Earth records.

I have divided the article into three sections: recording, melting, distilling. "Recording" begins with my participation in Duke University's "Recording the Anthropocene" exhibit in the first section, making a case for how contemporary Anthropocene discourse imagines the Earth as an archive, an archive that humans uniquely participate in, but also threaten through accelerated carbon emissions. In "Melting," I turn to several examples of scientific/artistic knowledge production around ice that offer an extended meditation on a concept of negative media, presenting an occasion to think about how so many phenomena in the Anthropocene disrupt our ability to trace linear history: the documentary *Chasing Ice* (2012); Greenpeace's "Vitruvian Man on Ice" (2011); Camille Seaman's iceberg portraits. These artworks draw attention to anthropogenic climate change through the media of ice and photography, dwelling on the ephemerality and melting of ice in a way where the loss of ice metonymically signifies the loss of something human. These artworks best illustrate the Anthropocene narrative that mourns the loss of the earth-as-archive. In face of this archival loss, I conclude with Pinar Yoldas' artwork "Distilling the Sky," focusing on its hopeful production of an ink that would serve as a fluid with which to develop (rather than capture) newly imagined stories and futures.

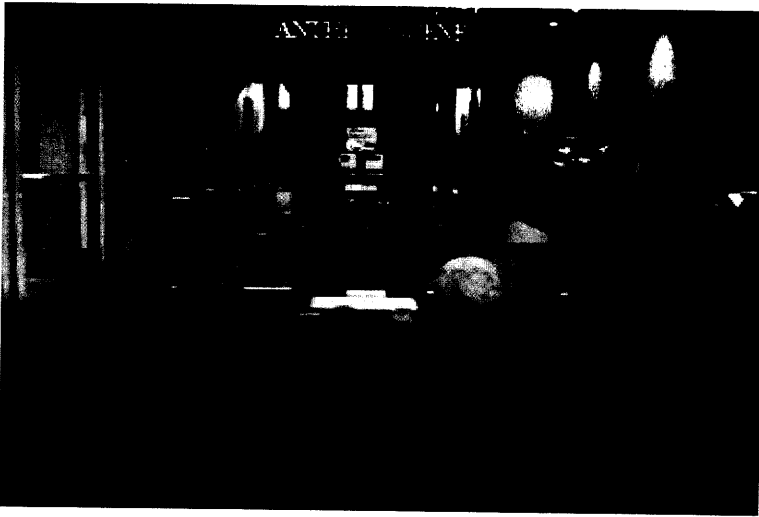


Figure 2: "Recording the Anthropocene" exhibit, Duke University Perkins Library, 2013.

I. Recording

I first began learning about the Anthropocene in a working group organized by Dr. Dan Richter of the Nicholas School of the Environment and the cross-campus group of scholars he gathered, coming together every few weeks to discuss a new cluster of articles.⁵ What was unique about the group was that it formed with the immediate aim of curating a library exhibit to educate the campus about the Anthropocene in its scientific, narrative, cultural, and visual dimensions. As our conversations progressed, the question of when the Anthropocene began emerged as an organizing principle for the exhibit.⁶ Such a beginning- or a "golden spike"- would be a point in the geologic strata that would mark the exact plane of transition in the rock layer from the Holocene to the Anthropocene, a kind of "bookmark" in the geological book of nature. The exhibit asked, what did each potential "golden spike" imply about agency, responsibility, and possibilities for mitigation?

Our final exhibit collected objects around four different golden spikes, each argued for by one or more scientific papers: the megafaunal extinction (approximately 10,000 BCE), the advent of agriculture (8,000 BCE), the industrial revolution (1800s-present), and the great acceleration (post WW2-present).⁷ Our group noticed different kinds of implications for telling the story of the Anthropocene: the megafaunal extinction implied something

inherently destructive about human nature, a violent tendency to eradicate (by hunting or habitat destruction) other species. The advent of agriculture implied a more distributed responsibility, where plants were also agents in climate warming. The industrial revolution and great acceleration implied a greater share of the responsibility with the West, affinity with ecological Marxism, and critiques of our global reliance on oil. Part of what we hoped for was that students and visitors from many backgrounds would be able to walk through the exhibit and feel that the story told by the Anthropocene was, to an extent, a story yet to be told. Perhaps the objects we collected- the Elephant bird egg, chunks of coal, stone arrowheads, cups of grain- would enable the possibility of new kinds of stories we could tell about the contemporary moment in relation to the deep past. The title of our exhibit, "Recording the Anthropocene," was partially a way of saying that the "Anthropocene" is very much still in the making at material and discursive levels, less about reifying a time period and more about opening new kinds of research questions.⁸ Curating the Anthropocene exhibit was a matter of bringing together a variety of different kinds and forms of recorded evidence, and synchronizing the material evidence into one cohesive concept.

"Recording the Anthropocene" depended on an expansive definition of the term "media," where media included not only man-made objects but also the Earth itself. Put another way: because the Anthropocene is discussed as a potentially new geologic where human impact is materially evident in Earth's very strata, the concept inherently views the Earth as a kind of recording medium. The focus of the exhibit was to show a *parallel* record or practice of recording the Anthropocene's emergence itself, where "recording" figures as both a human activity and as an earth process. Other scholars have offered similar perspectives on the relation between recording media and the environment. In *A Geology of Media* (2015), Jussi Parikka argues for a reciprocity in thinking about media and environment: he considers the earth as a recording medium, but also the ways in which technical objects like computers depend on rare earth metals. There would be no technical media without the earth media; to theorize media demands an attention to the substances and environments they depend upon for their existence.⁹ The history of media understood in this way would thus be entangled with the history of resource extraction, energy, capitalism, and thus the very forces responsible for producing the Anthropocene itself. For Parikka, then, media geology aims to produce a more ecologically-responsive and accountable kind of scholarship, "irreducible to the enthusiasm for software."¹⁰

So what human things, precisely, affect earth's geologic processes? One well-cited scientific paper that looks at a variety of anthropogenic processes driving climate change is, "The Anthropocene: Conceptual and Historical Perspectives" (Steffen et. al: 2011). The authors argue for placing the start date of the Anthropocene around 1800 during the Industrial Revolution, and as supporting evidence, include an impressive image of small graphs showing graphs of a variety of phenomena that increase from 1750-present. These phenomena include population, total real GDP, direct foreign investment, damming of rivers, water use, fertilizer consumption, urban population, paper consumption, McDonald's restaurants, number of motor vehicles, number of telephones, international tourism, atmospheric CO2 concentration, atmospheric N2O concentration, atmospheric CH4 concentration, ozone depletion, average surface temperature, flood frequency, % of fisheries fully exploited, shrimp farm production, loss of tropical rainforest, amount of domesticated land, and- last but not least- species extinctions.

The graphic visually argues for the interrelation of these processes through the fact of their approximate simultaneity, as well as their graphed form, culminating in the Anthropocene epoch. Yet what is curious about the graphic, for me, is its visual logic: all of the phenomena in the graphic are portrayed as graphs with a positive slope to ubiquitously show *increase*. Yet many of these could just as easily have been graphed in the opposite way with a negative slope, as a decrease. For example, the graph showing increasing water-use could have been graphed as a *decreasing* availability of fresh water; the graph of increasing ozone depletion could have been graphed as the amount of intact ozone *shrinking*; the graph of loss of tropical forest is depicted as "% of 1700 value" and looks like an increase, but could have been graphed as a decrease in the material amount of forest left; increasing species extinctions could have been graphed as "estimated remaining % of species." To a large extent, then, the assembly of positively-sloped graphs orients us to see human activity and its effects as *increases, as escalations, as piles, as spikes*, as commensurate visual forms. Even ontological loss (like species extinction) is framed as a kind of graphical presence, rise, or positive slope, such that the graphic is commensurate with the narrative of modernity's progress and growth. In other words: by imagining how many of the graphs could have been depicted as a *mixture* of rising and falling slopes (depending on the phenomena chosen), we see how the conscientious decision to synchronize their orientation to depict a rising slope, to synchronize them.

What are the implications of this data aesthetic? First, the rising slopes echo figurations of global warming that preceded Anthropocene discourse. Steffen's graphic gives continuity to images already existing in the collective consciousness, like the run-away graphs of temperature increase famously shown in Al Gore's *An Inconvenient Truth*. Indeed, the power of this Steffen's graphic is to show how all his listed phenomena are on the increase, with the visual slope giving force to and framing statistical numbers.¹¹ The Anthropocene concept acts as an umbrella term that gathers phenomena under the rubric of the positively sloped graph. Even though negative media – or phenomena that participate in the erasure or dissolution of earth's geologic records, glacial records, and species – are included in the graphic, we are visually persuaded to think only of increases, rather than absences or recessions. This contributes to the overall urgency of the moment, a gestalt for pattern recognition of all the phenomena under the frame of the Anthropocene.

Steffen's graphic may remind us of Carolyn Merchant's well-cited essay, "Reinventing Eden: Western Culture as a Recovery Narrative," which offers a way of thinking about the character of plot (or slope) in this particular scientific visualization.¹² Merchant identifies two dominant narratives about nature: the Edenic "fall" from grace (declensionist plot, or history as decline), and the "recovery" narrative (ascensionist plot, or history as progress). Contemporary environmentalism tends towards the declensionist plot, a gradual lapsarian fall from a pristine Nature that we have damaged and can never fully recreate or return to. In contrast, modernity, as an extension of the Enlightenment, tends towards an ascensionist plot, a progress narrative where science and technology might lead to better lives for all. Merchant's analysis positions us to see something interesting about Steffen's graphic: it depicts the Anthropocene as an *ascensionist* graph (increasing slope) that signals the *decline or fall* from a prior state of Nature. In other words, it looks visually ascensionist, but is discursively declensionist, of a future that seems progressive and disastrous all at once.

Yet must the future always extend linearly from the past? Merchant raises the question of the linearity of plot itself, asking why we always try to make plot into some kind of line going in a teleological direction. It is worth quoting her essay at length:

The declensionist and progressive plots that underlie the meta-narrative of recovery both gain power from their linearity. Linearity is not only conceptually easy to grasp; it is also a

property of modernity itself. Mechanistic science, progress, and capitalism all draw power from the linear functions of mathematical equations – the upward and downward slopes of straight lines and curves. To the extent that these linear slopes intersect with a real, material world, they refer to a limited domain only. Chaos theory and complexity theory suggest that only the unusual domain of mechanistic science can be described by linear differential equations. The usual – that is, the domain of everyday occurrences, such as the weather, turbulence, the shapes of coastlines, and the arrhythmic fibrillations of the human heart – cannot be so easily described...¹³

Taking inspiration from the non-linear movements of the weather, sea, and human biology, Merchant then raises the crucial question of what a history that is *not* framed by linearity might look like- a history with a different plot, which might include “a multiplicity of real actors; acausal, nonsequential events; nonessentialized symbols and meanings; many authorial voices rather than one; dialectical action and process, rather than the imposed logos of form; situated and contextualized, rather than universal, knowledge.”¹⁴ This history “perhaps can only be acted and lived, not written at all.”¹⁵ Air and water, through their nonlinear behavior, might inspire new ways of thinking about the relation between form and content – of history and its plots.¹⁶ It is to the element of ice that I now turn, specifically its relationship to the processes of negative media implied but occluded by so much Anthropocene discourse.

II. Melting

Ice holds a unique ontological position between solid and liquid, a record of past climates with “strata” consisting of layered deposits of material and trapped gas bubbles that, unlike rock, can melt with warming temperatures. Ice core samples from glaciers in areas like Greenland and Antarctica can give important clues about the past climate. Scientists use carbon isotopes trapped in the ice’s air bubbles to determine age and atmospheric composition at the time that the ice was deposited. Ice tends to be a good medium for preservation, preserving not only gas bubbles but also the remains of woolly mammoths, prehistoric humans, and other creatures for thousands of years. One reason we value ice is that it, cryogenically, staves off decay and dissolution. Yet as Jesse Oak Taylor notes, “ice becomes an archive only through the labor and resource-intensive processes of drilling cores up to three kilometers deep, transporting the samples

from distant drilling sites to the laboratory, cutting the samples into segments, and melting them in finely tuned instruments to register their chemical composition in a manner more palatable to science.”¹⁷ In the tradition of studying laboratory life pioneered by Sharon Traweek, Bruno Latour, and Steven Woolgar, Taylor points out just how large a technoscientific apparatus it takes for us to understand ice as a record we can discern.

To consider ice as an archive or recording medium also brings us to John Durham Peters’ argument for a more expansive definition of media beyond man-made technical objects, an argument in agreement with Parikka’s geology of media. Yet whereas Parikka looks at geology uniquely as an analytic, Peters argues for a broader elemental media theory that would do well to embrace a broader ecology inclusive of “repositories of readable data and processes that sustain and enable existence” – be they silicon data centers, ice cores, tree rings, or strata.¹⁸ This elemental approach- going beyond earth to include sea, sky, and fire – attempts to productively broaden the concept of media, inclusive of both man-made objects and technologies and the myriad ways that information might be stored or recorded in the environment. One of the implications of Peters’ expansive definition of media is that media theory – rather than cresting with the progressive waves of digital innovations – should consider the continuing significance of analog (or natural) media. The environment figures as a recording medium, a book whose “pages” we can decipher through the tools of geology, chemistry, biology – though, as Charles Darwin famously noted, many are tattered or missing.¹⁹ Yet where Darwin’s geologic “book” was tattered with pages missing, we might say that the more recent “book” of nature, told by glaciers, is in danger of liquefaction. As such, ice toes the line between a positive conception of media (information bearing) and negative media (information disappearing or disorganizing) when it melts.

This sense in which melting ice conveys a sense of lost data or history is also evoked by the artwork “Melting Vitruvian Man,” a temporary arctic installation outlined by copper strips located at 81.45 degrees north. Designed by artist John Quigley and assembled with the help of Greenpeace members, Quigley recalled, “We came here to create the ‘Melting Vitruvian Man’ ... because climate change is literally eating into the body of our civilization.”²⁰ The aerial photographic image of the work (Figure 3) is evocative of the Enlightenment and the dawn of innovation, but Quigley argues that because of climate change and our fossil fuel addition, “that legacy is in danger.”²¹

To put it another way, the melting Vitruvian man shows how ascensionist narrative of modernity and Enlightenment progress can easily turn into the declensionist fall from Eden. Although it remains bound to the linear graph, the artwork is evocative for the way that it places emphasis on the body. To say that climate change is “eating” the “body” of our civilization is the beginning of a broader critique of our consumption of oil and resources. Mourning the passing of ice becomes a way to mourn the passing of some kind of humanity, some kind of life, on an iconic level.

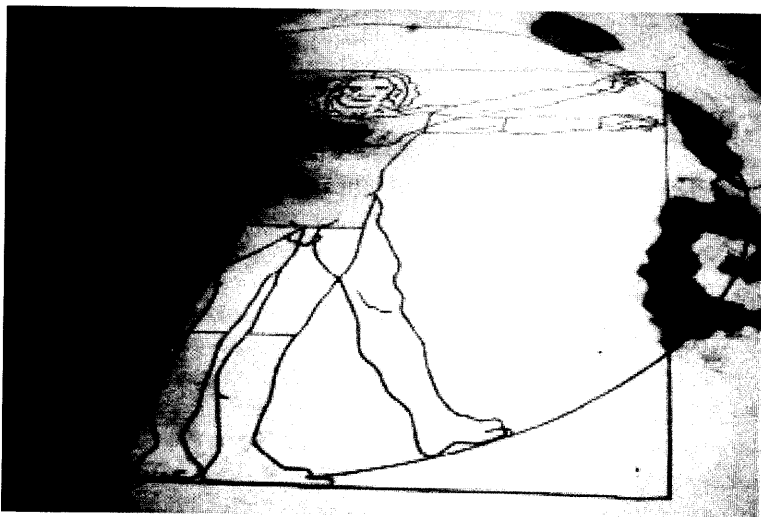


Figure 3: “Vitruvian Man on Ice” by John Quigly (2011).

The documentary *Chasing Ice* (2012), which received an Emmy Award for Outstanding Nature Programming in 2014, also concerns itself with the disappearance of global ice. Created over five years, the documentary production involved setting up time-lapse cameras in polar regions with incredibly harsh weather. The cameras that survived were able to document the recession, and in some cases disappearance, of ancient glaciers- a phenomenon that the documentary poses as incontrovertible evidence for the reality of global climate change. Through the visual arguments of time-lapse photography, *Chasing Ice* shows the immediacy of global climate change through the tangible disappearance of the world’s glaciers. Contrasting the titanic mass of glaciers (in all their awe and terror) with the minute size of the human explorers, *Chasing Ice* represents the loss of glaciers as nothing less than the impending loss of the sublime itself. This is particularly clear in one “calving” event, where

explorers waited for three solid weeks to witness and record an ice mass the size of *Manhattan* fall into the sea.

Chasing Ice sets up a number of parallels between photography and ice as distinct kinds of recording media. Where ice “freezes” bubbles of ancient air, the camera similarly freezes or captures distinct moments of glacial form. In one particular scene (Figure 4), James Balog, the expedition leader of Extreme Ice Survey, revisits one of his stationary cameras and is surprised to see that large parts of the glacier have disappeared. He carefully inspects the camera to see if it is still functioning (it is), and then withdraws the SD card. He turns to the video camera and says, “This is the memory of the landscape. That landscape is gone. It may never be seen again in the history of civilization, and it’s stored right here [holds up SD card]” (Figure 4). The visual record of the glacier (although not its data-bearing air bubbles) now survives only in its digital incarnation. Yet the materiality of the film is not unlike an ice core itself: a compression of years of recording into a few seconds of time lapse, or in the case of ice cores, a compression of years of snowpack into interpretable frozen strata. Both ice and film compress the slow passage of time into something perceivable on a human scale, the massive glacier now seen to be in as precarious a position- able to be lost- as the tiny SD card.



Figure 4: Chasing Ice explorer James Balog holds up an SD card next to a camera, holding the last remaining images of a glacier that has melted.

Consider the parallels between the medium of ice and the medium of photograph: their stillness, their aim of capturing a single moment in

time. Film scholar Peter Wollen took inspiration from the elements to muse that, “film is like fire, photography is like ice. Film is all light and shadow, incessant motion, transience, flicker, a source of Bachelardian reverie like the flames in the grate. Photography is motionless and frozen, it has the cryogenic power to preserve objects through time without decay.”²² In other words, Wollen saw an affinity between photography and ice as respectively technical and natural media of immobility, of stillness. He further noted that “we sense something paradoxical about the photograph which signifies an event, like a frozen tongue of fire.”²³ In the case of iceberg and glacier photography, then, it would seem to be an ideological affinity between signifier (photograph) and signified (ice), as states of arrest. Yet the reality that *Chasing Ice*, “Vitruvian Man on Ice,” and Camille Seaman’s photography (which I discuss next) portray is one of endangered ice: where we know that the ice we are shown has already melted back into the sea. Even ice photography is, then, at work impossibly trying to capture an element in motion. This constitutes a break between media form and content, between photographic signifier and the materiality of the signified. In light of our awareness of the mortality of glaciers, photographs accumulate into an archive parallel to the material loss of glacial archives. Ice turns out to be one of those things that photography could never repeat existentially, to quote Roland Barthes.²⁴

Photographer Camille Seaman’s recent “portraiture” of icebergs hints at their mortality in an anthropomorphic way. In an interview with TED (Technology, Education, Design), Seaman described how she saw ice as life, not water frozen as ice: “I wouldn’t go so far as to say I see icebergs as sentient beings, but each one was arranged in such a unique, individual way. I couldn’t help but see that each iceberg has its own personality, and each one reacts differently to its circumstances. When I photographed them, I had the intention and perspective of photographing them as though I were making a portrait.”²⁵ In other words, the ice was not simply an archive, but also a kind of *face*, of water that was once and would one day again be part of human bodies. In a different interview, Seaman attributes this perspective to her upbringing:

My grandfather used to make us do this exercise where he’d have us sit outside in the sun on a warm summer day and tell us, “Just wait.” And then we’d start to sweat. As we were sweating, these small white puffs of clouds would start to appear in the sky and he’d say, “That’s part of you in that

cloud.” He walked us through the process of how this cloud becomes a bigger cloud; then it rains and feeds plants and the plants feed animals, we eat them, and it becomes part of a larger cycle. The icebergs are potentially and literally our very ancestors. They’re sweat turned into a cloud that fell as snow to finally become ice.²⁶

This blurring of boundaries between subject and environment evokes Stacy Alaimo’s concept of “transcorporeality,” highlighting the way that organisms and environment connect through material flows.²⁷ Seaman’s perspective is more similar to Alaimo’s new materialism than to the kind of iconic or metonymic gesture made by the “Melting Vitruvian Man.” Instead of simply standing in metonymically for the body of humanity, the ice lives through the way that it materially *circulates* through human bodies, where watery materialism signifies both kinship and ethical obligation. When ice is viewed as not only a kind of record of the past, but also part of the body of humanity, its loss is even more poignant; for to lose the body of data held by the glacial archive or ice archive is, in a way, to lose part of our own body and knowledge of where we came from as a species, as well as the possibility of retrospectively tracing a linear history from the present. We are able to see ice and glaciers as human-like because of their melting. Yet the icy “faces” of Seaman’s portraiture are, of course, spectral- and already white as ghosts.

Ice photography registers a particular anxiety over the disappearance of natural archives. The narratives surrounding sea ice and glacial melting in the three artworks I examined all point to the facet of the Anthropocene that concerns the informatic unraveling of earth’s records, or what I am calling negative media. Atmospheric carbon accumulation is precisely such a form of negative media that disrupts the entire logic of delimiting, declaring, and measuring time periods themselves. It drives not only global warming, but also disrupts that holy process of scientific measurement: radio-carbon dating. Heather Graven, a climate-physics researcher at Imperial College London, offered a harrowing prediction that, “today’s rate of fossil-fuel emissions is skewing the ratio of carbon that scientists use to determine an object’s age.” By “diluting the fraction of atmospheric carbon dioxide containing radiocarbon,” the atmosphere will increasingly appear as though it has “aged,” or lost radiocarbon by radioactive decay occurring over time.”²⁸ According to Graven, by 2050, “the large amount of carbon dioxide in the atmosphere will make new organic material appear to be 1,000 years old based on

today's carbon-dating models. By the year 2100, the atmosphere will have a radiocarbon age of 2,000 years old."²⁹ Carbon dating will no longer be reliable by the year 2030, meaning that scientists will not be able to distinguish between new materials and objects that are thousands of years old.³⁰ This represents a particular crisis for ice archives, because radio-carbon dating has been especially important in dating strata in glacial ice cores, through the comparison of current radiocarbon with radiocarbon found in past bubbles.³¹ What will become lost, then, is a reliable metric by which to verify the historicity of objects. Ice, as a history-bearing medium, is thus under threat not only by global warming, but also by the negative media of accumulated atmospheric carbon.

III. Distillation

In face of negative media- of the archival loss accompanying the melting of history-bearing ice and glaciers, as well as the immanent cessation of radio-carbon dating as a reliable metric – included in but repressed by contemporary Anthropocene discourse, what should be our response? To argue for preservation of species, glaciers, and information? To digitize what is disappearing? Or possibly, to rethink “preservation” as the primary goal of our media technologies? Might the transcorporeal material flows of water, as Seaman discusses, position us to think differently about melting, glacial loss, and the broader informatic dissolution of earth media? Might we view glacial melt in at least two ways- as a loss, but also as a material recirculation into the global body?

As a manner of concluding, I will turn to one final artwork that responds to these questions: artist Pinar Yoldas' 2015 Guggenheim-winning proposal, “Distilling the Sky.” Yoldas plans to “compress polluted air particles into a kind of ink for this generation's stories,” and then present this ink to “calligraphers and poets and ask them what they would write with this ink of our time.”³² Yoldas' distillation figures as a counter-extraction to the oil extraction that produced such air pollution in the first place, tracing a journey of carbon from animal bodies, to underground reserves, to the air, and finally to bottles of ink. Like Donna Haraway's figure of the cyborg, this distilled ink is not innocent; though made of pollution, it has the potential to form new kinds of relations and connections.

“Distilling the Sky” promises to facilitate the kind of planetary consciousness, without the desire for transparency and thus potential for domination of the satellite's perspective.³³ Rather than a site from

which to view totality, “Distilling the Sky” shows us the atmosphere as a site of vulnerability and endangerment, such as the air pollution in Beijing. Here, Yoldas notes, “We've lost a sky.”³⁴ In a similar vein, German philosopher Peter Sloterdijk has referred to the contemporary fragility of the global atmosphere as the state of living in “shell-less times.” Shell-less times denotes an ontological crisis of the loss of protective world membranes, from the harmonious “crystal spheres” of Renaissance cosmology to the ozone layer in the present: “Now networks and insurance policies are meant to replace the celestial domes; telecommunication has to reenact the all-encompassing. The body of humanity seeks to create a new immune constitution in an electronic medial skin.”³⁵ Yet what I find most hopeful about “Distilling the sky” is the way that Yoldas plans to present this toxic, distilled ink of our times to artists and writers. What this effectively does is transform the negative media of air pollution into a new form of liquid media- of creating a new form of viscous writing out of that which threatens earth records in the first place.

Distillation suggests a novel method of responding to conditions of erasure, melting, and dissolution, by turning the negative media (and disruptive agency) of air pollution into a new means of writing, recording, communicating, all the more poignant for its non-innocent origins. It breaks us out of the rather dialectical view of media that I earlier put forth- of positive media in the making, and negative media of erasure. Instead, distillation is one kind of re-circulatory process of media among others we might imagine. Where Carolyn Merchant has advocated the imagination of new kinds of non-linear plots, I take inspiration from “Distilling the Sky” to image new kinds of writing media. To live in the Anthropocene, wherever we mark it, perhaps what is required is a perspective shift on what we want our media to do, and how we define ourselves in relation to our media. Rather than giving up hope at the sight of melting glacial archives, we might embrace the invention- or rather *individuation*- of new kinds of elemental media to carry our stories and facilitate the degree of consciousness and creativity necessary to work towards a better future. ●

(I would like to thank the members of Duke's Anthropocene working group for two years of lively discussions: Dan Richter, Christina Chia, John Mathew, Jules Odenthal-James, Priscilla Wald, Rebecca Evans, Calina Ciobanu, Margaret Brown, Angela Zoss, Thomas Struhsaker, and Peter Haff.)

Notes

1. Recording the Anthropocene, <http://exhibits.library.duke.edu/exhibits/show/anthropocene/intro/intro>, accessed 07/30/15.
2. I present a longer discussion of the terrestrial bias of recording media in Melody Jue, "Vampire Squid Media" *Grey Room* 37 (2014).
3. P. S. Martin, *Twilight of the Mammoths: Ice Age Extinctions and the Rewilding of America* (Berkeley: UC Press, 2015). C.E. Doughty, "Preindustrial human impacts on global and regional environment" *Annual Review of Environmental Resources* 38 (2013), pp. 503–527.
4. Amanda Boetzkes, "Ecologicity, Vision, and the Neurological System" in *Art in the Anthropocene* (London: Open Humanities Press, 2015), 271.
5. Dr. Richter is on the international Working Group on the Anthropocene that will recommend whether to formally adopt the term: <http://quaternary.stratigraphy.org/workinggroups/anthropocene/>, accessed 09/22/15.
6. Duke's Anthropocene Working Group included members across the sciences, performance, and humanities. See: <http://exhibits.library.duke.edu/exhibits/show/anthropocene/intro/curators>, accessed 9/22/15.
7. Scientists have proposed several different start dates for the Anthropocene. These include 50,000 years ago: P. S. Martin, *Twilight of the Mammoths: Ice Age Extinctions and the Rewilding of America* (Berkeley: UC Press, 2015). C.E. Doughty, "Preindustrial human impacts on global and regional environment" *Annual Review of Environmental Resources* 38 (2013), pp. 503–527. 8,000 years ago: W.F. Ruddiman, "The Anthropocene," *Ann. Rev. Earth Planet. Sci.*, 41 (2013), pp. 45–68. Around 1800 CE: P. Crutzen, E. Stoermer, "The Anthropocene," *IGBP Newsletter* 41 (2000), p. 12; P.J. Crutzen, "Geology of mankind," *Nature* 415 (2002), p. 23; Steffen et al: "The Anthropocene: conceptual and historical perspectives" *Philosophical Transactions of the Royal Society* 369 (2011), pp. 842–867. Around 1950 CE: Zalasiewicz et al., "When did the Anthropocene begin? A mid-twentieth century boundary level is stratigraphically optimal" in *Quaternary International* (January 2015).
8. According to Dr. Dan Richter, very few soil studies have been conducted in urban environments; most have been in either farms or "natural" areas. Taking the Anthropocene seriously means asking how human communities may be impacting soil formation in cities as well as farms and forests.
9. Jussi Parikka, *A Geology of Media* (Minneapolis: Minnesota Press, 2015).
10. *Ibid.*, 28. Parikka's work is commensurate with the argument put forth by *Greening the Media* (2012) by Richard Maxwell and Toby Miller, which traces the large volume of waste produced by obsolete media technologies.
11. This is not to say that the graphs are not factual; it is, rather, to argue that there are always implications to the visual forms that we give to data, and that when we think how data could have been displayed otherwise we can better interpret the implications of existing graphical choices. To concur with Lisa Gitelman (2013) in her book of anthology of the same title, raw data is indeed an oxymoron.
12. Carolyn Merchant, "Reinventing Eden: Western Culture as a Recovery Narrative," *Uncommon Ground* (New York: Norton, 1995).
13. *Ibid.*, 156.
14. *Ibid.*, 157–158.
15. *Ibid.*, 157–158.
16. Pursuing the relation of content and form, of history and how it is told, might lead us to the following thought experiment: what does the history of the weather look like? Or the ocean? A marine biologist I once spoke with suggested that the ocean is, from one point of view, ahistorical but also insistently present- or ancient and new all at the same time. The ocean does not stay still or exist as strata, but constantly mixes and circulates in paths that change over time. Tobias Menely has recently asked a similar question regarding air, and how the West has tended to regard air as an ahistorical medium. Thus even though it is possible to graph phenomena like increasing CO2 concentrations in the ocean or air, there is also a way in which the ocean and air evade a kind of strictly *linear* material historicity because of the way that substances varyingly saturate, dissolve into, chemically change, erode, or otherwise alter them as media. The non-linear history of an environment like the ocean, if it were told in a way that took inspiration from the ocean's materiality and agency, would perhaps take some non-linear form, approximated in science fiction or experimental poetry/film.
17. Jesse Oak Taylor, "Auras and Ice Cores: Atmospheric Archives and the Anthropocene" *Minnesota Review* 83 (2014), 79.
18. John Durham Peters, *The Marvelous Clouds* (Chicago: U of Chicago Press, 2015), 4.
19. Gilleen Beer, *Forging the Missing Link: Interdisciplinary Stories* (Cambridge, Cambridge University Press: 1993), 19.
20. "Vitruvian Man on Ice," <http://mission-blue.org/2013/04/leonardo-da-vincis-vitruvian-man-on-ice/>, accessed 08/10/2015.
21. *Ibid.*, accessed 08/10/2015.
22. Peter Wollen, "Fire and Ice" in *The Photography Reader*, ed. Liz Wells (London: Routledge, 2003), 78.
23. *Ibid.*, 78.
24. Roland Barthes, "Camera Lucida" in *The Photography Reader*, ed. Liz Wells (London: Routledge, 2003), 21.

25. TED blog, "Touching the Directions: Fellows Friday with Camille Seaman," <http://blog.ted.com/touching-the-directions-fellows-friday-with-camille-seaman/>, accessed 08/19/2015.
26. TED blog interview with Camille Seaman, <http://blog.ted.com/tedfellow-camille-seamans-photos-give-life-to-ice/>, accessed 08/19/2015.
27. Stacy Alaimo, "States of Suspension: Transcorporeality at Sea" *Interdisciplinary Studies in Literature and the Environment* 19:3 (Summer 2012).
28. Global Warming Could Make Carbon Dating Impossible, <http://www.theatlantic.com/technology/archive/2015/07/global-warming-carbon-dating/399398/>, accessed 08/19/2015.
29. Ibid., accessed 08/19/2015.
30. Ibid., accessed 08/19/2015.
31. Antarctic Glaciers, <http://www.antarcticglaciers.org/glaciers-and-climate/ice-cores/ice-core-basics/>, accessed 9/27/15.
32. "Distilling the Sky," <http://dailybruin.com/2015/04/15/qa-alumna-talks-receiving-fellowship-hopes-for-her-project/>, accessed 08/19/2015.
33. Based on an idea from Gayatri Spivak, Dipesh Chakrabarty usefully distinguishes between the planetary and the global, where the global is the singular human story and the planetary describes a "perspective to which humans are incidental" developed out of planetary science in the solar system inclusive of, but not limited to, Earth. See Chakrabarty, "Climate and Capital: On Conjoined Histories," *Critical Inquiry* 41:1 (2014), 23.
34. "Ink from the Sky," <https://gradschool.duke.edu/about/news/ink-sky>, accessed 9/25/15.
35. Peter Sloterdijk, *Bubbles* (Cambridge MA: Semiotexte, 2011), 25.

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The Anthropocene: Call for an Ontological Unity in Nature

As *anthropocene* explains the influence of behavior and activities of humans over environment, this paper attempts to trace the possible philosophical roots which might have had influenced and generated the drives in humans to 'subjugate' nature. It creates a dialectical situation while debating the 'dominancy' (of human) either as an immanent predisposition inherent in nature or as a nurture-product imposed upon *Homo sapiens* by the history of thought which is highly anthropocentric. Besides the *logocentric*² understanding of the teleological power-relations of the world of objects, the orthodox religious/philosophical thought processes often encourage the human supremacy in nature. What is natural here is treated as environmental. The universality of hegemonic human comportment demands the need for a comprehensive understanding of the human 'being-ness' other than the evolutionary superficial understanding of it as one among the many species, that is, belief in no-ontological divide. The worry about the drastic environmental changes caused by human is eventually rooted in the future of existence (of humans?). Hence, it is a way of thinking in which both antecedence and consequence are pointed onto a single entity, that is, human. It seems that the *anthropocenic* way of thought does not argue for a constant nature/environment so that, the 'swift change' is a matter of concern