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Science/Art/Culture Through
an Oceanic Lens

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Abstract

Since the year 2000, artists have increasingly employed tools, methods, and aesthetics associated with scientific practice to produce forms of art that assert themselves as kinds of experimental and empirical knowledge production parallel to and in critical dialogue with science. Anthropologists, intrigued by the work of art in the age of its technoscientific affiliation, have taken notice. This article discusses bio art, eco art, and surveillance art that have gathered, or might yet reward, anthropological attention, particularly as it might operate as an allied form of cultural critique. We focus on art that takes oceans as its concern, tuning to anthropological interests in translocal connection, climate change, and the politics of the extraterritorial. We end with a call for decolonizing art–science and for an anti-colonial aesthetics of oceanic worlds.

INTRODUCTION

Historians date the science–art divide to 1834, when the term “scientist” was coined by analogy with “artist” (Jones & Galison 1998), replacing the early modern Renaissance man (*Uomo Universale*). Later assimilated to the putative split between the “two cultures” of science and humanities (Snow 1959), the division between science and art has recently been subject to epistemological and practical querying, particularly in the work of contemporary artists. Since 2000, artists have increasingly employed tools, methods, and aesthetics associated with scientific practice to produce forms of art that assert themselves as kinds of experimental and empirical knowledge production parallel to and in critical dialogue with science (see Anker & Nelkin 2004, Scott 2006, Kac 2007, Mitchell 2010, Ginsberg et al. 2014). Anthropologists, intrigued by the work of art in the age of its techno- and bioscientific affiliation, have taken notice and have, in some cases, joined in as collaborators in producing art as science as culture (see, e.g., da Costa & Philip 2008, Kirksey 2014, Tsing et al. 2017).

Today, no stable object of “art” or cohort of “artists” exists that has not already encountered some version of anthropology (Schneider & Wright 2010). As in the 1930s, when Surrealism drew avidly from a museum anthropology that provided provocative (if vexed) materials for cross-cultural estrangement (Clifford 1981), so now do present-day artists engage contemporary anthropology—through analyses that document the cultural construction of knowledge, science, and nature—to develop tools for mobilizing as well as critiquing the norms and forms of settled expert authority (see, e.g., Thompson & Sholette 2004, Debatty et al. 2011, Berrigan 2012, Enwezor 2012, Franceschini 2017). To review these crossings of science, art, and anthropology, we first discuss the recent history of such entanglements and then examine technoscientifically minded works that have gathered, or might yet reward, anthropological attention. To both circumscribe and deepen our discussion, we move toward works that take oceans as their concern, focusing thereby on translocal circulation, pollution and climate change, and the politics of the extraterritorial.

Our oceanic optic follows from the art. Oceans have become compelling for many artists today because seas are synecdochic for a “globe,” “planet,” or “world” in crisis and for politically and ecologically dispersed market and industrial processes that have local, visceral, and often surreal conditions of emergence and implication. Our choice also tracks renewed interest in anthropology in studying the oceanic as a site of science, governance, migration, diaspora, fishing, piracy, neocolonial networks, and much else (Helmreich 2009, Chalflin et al. 2014, Kahn et al. 2017).

Here, we do not rehearse debates over terms such as “art,” “science,” and “culture.” If, for Geertz (1976) or for Gell (1998), art was a “cultural system” that demanded that traditional questions of form and function (see Munn 1966) be thought of alongside matters of meaning, art historians have long told us that art must be examined not only with respect to its symbolic valences, but also in conjunction with its political, economic, national, and transnational arenas of production and circulation (see Jones 2016b). Anthropologists since Geertz have made kindred claims (Graburn 1976; Barbash & Castaing-Taylor 1993; Marcus & Myers 1995; Errington 1998; Myers 2002; Bakke & Peterson 2017a,b). Scholars of science and technology have said something analogous about their object—that technoscience must be known not only with respect to its theoretical frameworks, but also as socially located discourse and practice—that is, as culture (for anthropological enunciations, see Pfaffenberger 1992, Franklin 1995, Reid & Traweek 2000, Fischer 2007b). “Culture,” meanwhile, has been a contested analytic in anthropology since at least the 1980s (see Fischer 2007a), if not before. We emphasize that our focus here is not on long-standing discussions within traditional ethnology about definitions of Indigenous art and science or their antitheses (Boas 1927, Redfield et al. 1959, Maquet 1986, Price 1989, Kramer 2004; see also Kim & Laurence 2017). That said, we do highlight contemporary Indigenous projects that

aim to work against the colonial cast of these very discussions (see Martineau & Ritskes 2014, Haraway 2017, Liboiron 2017a).

Surveying the field of art engaged with science yields a distribution broader than either's intersection with anthropology as such. There are artists who engage physics and cosmology in works we do not discuss. Anthropological attention to contemporary art since 2000 has responded primarily to practices involving biological and ecological sciences, perhaps because of anthropology's enduring preoccupation with culture and nature, where "nature" has referred primarily to the organic, biotic world (see Ingold & Palsson 2013). At the same time, newer anthropological curiosities attend to science-art that grapples with the politics of engineered sensing—intimate, digital, remote, machine mediated (Jones 2006, Jones et al. 2016).

Around the early 2000s, objects and processes from the biosciences, the eco-sciences, and the sciences of sensing began to be taken up by artists as subjects, media, and vehicles for critical reflection on contemporary biosocial life in three domains: biotechnological, environmental, and under surveillance. In each of these technoscientifically themed arenas of art production—bio art, eco art, and surveillance/forensic art—anthropologists discerned sympathetic versions of their own project of "cultural critique" (Marcus & Fischer 1986). For many anthropologists, it had long been possible to read art as anthropology by other means (Calzadilla & Marcus 2006), and, indeed, art that took anthropology itself as one of its subjects contributed to the discipline's project of reflexive critique (Gómez-Peña 2000). Philosopher of aesthetics Gernot Böhme writes, "It is said of modern art in general that it is self-reflexive, that it makes art, art's social position, art's anthropological significance, art's very existence, into art's subject matter" (quoted in Bakke & Peterson 2017a, p. 3). It is no wonder that contemporary anthropology and art have so much to discuss.

With the technoscientific art of the 2000s, art as para-anthropology offered analytical companionship to the anthropology of science and to science and technology studies (STS) [for STS, see Latour & Weibel 2005; for anthropology as para-art, see exhibitions at meetings of the American Anthropological Association such as Ethnographic Terminalia 2011 (Ethnogr. Termin. Collect. 2011), which may deliver on Ingold's (2013, p. 4) call for anthropologists to develop their "speculative ambitions"]. In examining this development, we take a binocular view, looking out from the disciplines in which we authors are situated: anthropology and art history. We fix particularly on works of art that engage especially with oceanic domains.

BIO ART, ECO ART, AND SURVEILLANCE/FORENSIC ART

With the sequencing of the human genome around the turn of the millennium, bio art took the metaphor of life as a code to authorize a gamut of aesthetic recodings (imagined and actual) of genetic information and material (Anker & Nelkin 2004, Zurr 2004, Kac 2007, Kac & Ronell 2007). Artists meditated on the utopian and dystopian possibilities of genetic engineering, tissue manipulation, and species transformation and on what it might mean for biology (as genes, cells, flesh, and organisms) to become an artistic medium in an age when bioscience was becoming, as was the art market, a zone of intense market speculation. Entities such as Pittsburgh's Center for PostNatural History (2017), founded by artist Richard Pell as a storefront gallery in 2011, played with the science museum form to call attention to a nature altered by human enterprise (mindful of the precedent of the Museum of Jurassic Technology; Weschler 1995). Simultaneously, anthropologists began tracing how boundaries between nature and culture were being breached in the days of assisted reproduction, genetically modified organisms, and chimeric, cloned, and cyborgian creatures (see Haraway 2007, Franklin 2003, Marks 2013). Artists such as Patricia Piccinini and Eduardo Kac drew anthropological attention with sculptures that imagined uncanny, fantastical

cross-genera hybrids or, in the case of Kac's notorious bioluminescent rabbit "Alba," living transgenic pets. Other artists entered laboratories to do their own semierneest "experiments" (Zaretsky 2001), giving bio art its early positivist sheen—in turn inviting responses from practitioners who named alternative genealogies: Kelley (2016) argued that bio art had sources in 1970s feminism, and Jones (2016a) argued for its affinities with fiction, theorizing the genre of "biofiction," in which artists take up the tropes and materials of science—laboratory practice, taxonomy, agar medium, bacteria—to make interventions into how publics might reimagine the biological world (see also the Speculative Life group at Concordia University: <http://www.speculativelife.com/>).

Meanwhile, ecologically minded artworks began in the 1970s as an outgrowth of "land art," with attention to pollution and rehabilitation, and evolved to "social practice works" centered on the politics of chemical exposure, organismic modification, and environmental justice (Cheetham 2018). Steve Kurtz's Critical Art Ensemble aimed to produce art as "citizen science"—conducting assays in collaboration with communities to determine the biological makeup of their foods—before Kurtz was imprisoned by US government forces who were reactively concerned about bioterrorism in the wake of the September 11, 2001, attacks (Hirsch 2005). Artists and curators, operating on scales between the global and the local (see, e.g., Natalie Jeremijenko's Environmental Health Clinic, which saw Jeremijenko offer do-it-yourself assays of pollution in Manhattan's East River), spoke to anthropological concerns with the politics of territory, property, poverty, and the environment, particularly with respect to structural racism and Indigenous dispossession (Adamson et al. 2002, Reed 2009, Wallen 2012, Weintraub 2012). By 2015, much of this work expanded to address the Anthropocene, that nomination for periodizing the current geological epoch as registering a human impact (plantation–agricultural, industrial, nuclear) on Earth's geological record (Crutzen & Stoermer 2000). Such art sought to draw into relief the politics of environmental insult in the age of nuclearity, toxicity, plastification, and species extinction [see Berlin's Haus der Kulturen der Welt's "Anthropocene Project," particularly in Klingan et al. (2014)]. Such figures as Latour (2017) turned to Anthropocene art for tools to become "sensitive to Gaia." So vast is the corpus of art now accumulating around the Anthropocene concept that a large art historical literature has grown up around it (Davis & Turpin 2015, Cheetham 2018).

Finally, the genre of surveillance or forensic art—centered on critiquing the security state, on turning official monitoring practices against themselves, and on questioning worldwide military and corporate networks of observation and listening (e.g., Paglen 2009, Farocki 2010, Abu Hamdan 2012, Raad 2012)—offered a "para-ethnographic" (Holmes & Marcus 2006) or "para-fictional" (Lambert-Beatty 2009) approach to the anthropology of states and corporations. With lineages reaching back to Institutional Critique in the 1980s, this genre (cf. Levin et al. 2002) draws heavily on cultural studies, visual studies, and critical media practice (e.g., Parks & Starosielski 2015, Gabrys 2016), while holding on to the persuasiveness of technoscience for a forensic aesthetics (Dziuban 2017).

In what follows, we further examine bio, eco, and forensic art, analyzing the strategies these genres have taken toward representing technoscience and how these have drawn from, contributed to, or, occasionally, missed out on anthropological conversations about science. We are interested in the interplay between the playful (ironic, para-, surreal; see Biagioli 1995) and the empirical (including strategic deployments of the data-driven) and in how the (desired) ratio between these stances has shifted (for artists, for anthropologists) over the last decade or so.

Given the literature on these art forms, this task is large. We pursue, then, a closer reading of art/science/anthropology conjunctures using a particular lens: the oceanic—the marine, maritime, aquatic, and coastal. Inspired by the "blue humanities" (Gillis 2013) and by anthropologies of water and sea space (Strang 2015, Rasmussen & Orlove 2017), an aquatic anthropology of the science/art/culture nexus adds biophysical, territorial, and political specificity to transnational

artistic production, while provincializing those European and American forms that have dominated discussions of science-driven art.

BIO ART'S ANTHROPOLOGICAL DEPARTURES AND VOYAGES

In the late 1990s and early 2000s, bio art captured the attention of anthropologists who discerned a kindred critical activity of reflecting on how life as an object of scientific theory and social practice had been modulated by biotechnology. Anthropologists had been attending to the “implosion” of nature and culture (Haraway 1997) as they tracked how genetics were reconfiguring dominant idioms of inheritance, family, gender, race, species, and more (Strathern 1992, Franklin 2003, Goodman et al. 2003). Along with other humanistic social scientists, particularly in STS, anthropologists saw bio art as promising a “tactical biopolitics” (da Costa & Philip 2008), a set of tools through which the facts of life might be denaturalized and rewritten in dialogue with science, culture, and art (Heon & Ackerman 2000, Bureaud 2002, Thompson 2005, Jones 2006, Kac & Ronell 2007, Terranova & Tromble 2016). Anthropologists working in “multispecies ethnography” (Kirksey & Helmreich 2010) and in feminist ethnography animated by “cyborg anthropology” (Downey et al. 1995) were drawn to the work of such artists as Caitlin Berrigan, the Bioart Kitchen, Natalie Jeremijenko, Claire Pentecost, and others, whose art made use of laboratory rhetoric and techniques. Taking up the example of the Critical Art Ensemble (2000), such artists sought to bring humans, animals, plants, and microbes into novel relations, to stage new hospitalities among creatures, or to draw attention to the market calculations behind engineered life. It must also be said that, in some cases, the production of such artworks replicated the very ethical conundrums upon which artists sought to comment [see Vaage (2016) on the Tissue Culture and Art Project’s use of fetal bovine serum and on how bio artists wrestle with the ethics of instrumentalizing organisms]. An affinity for ethically attuned ethnography within these conversations manifested in the Stanford and Edinburgh University collaboration Synthetic Aesthetics, a group of biological engineers and artists who invited sociologist of science Pablo Schyfter to join the team (Ginsberg et al. 2014).

Shifting our thinking about bio art into the oceanic directs us to artistic works that seek to reimagine waterborne relations among biological substances, property claims, knowledge forms, and human biopolitics. Consider the Future Farmers’ “Seed Journey,” a public art sea voyage that traces the routes of seeds from colonies to metropolises by going “backwards,” offering, through such forays, to “reverse” Humboldt, Darwin, Cook, and Magellan (Future Farmers 2017). In September 2016, a wooden sailboat set out from the former port of Bjørvika in Oslo, Norway, on its way to Santander, Spain, where it arrived in May 2017, carrying a store of seeds from an assortment of locales in the Northern Hemisphere, sourced (per the artists) “from the very formal (seeds saved during the Siege of Leningrad from the Vavilov Institute Seed Bank) to the informal (experimental archaeologists discovering Finnish Rye between two wooden boards in an abandoned Rihii in Hamar, Norway)” (Future Farmers 2017). At sea with the sailboat were different sorts of people: “A rotating crew of artists, anthropologists, biologists, bakers, activists, sailors and farmers join the journey and share their findings at host institutions along the route from small harbors to large ports from barns to museums (contemporary art, natural history and maritime) to social centers” (Future Farmers 2017).

The traveling “museum-event” had among its number the anthropologist Michael Taussig, who wrote, in advance of the journey,

We can speak of this voyage as return or a retracing of a very ancient route combining human and non-human initiative by which wheat was domesticated from the wild and then slowly made its way

through gifts, trade, winds, and sea currents, from the highly cultured Middle East to the barbarians of the north . . . Seeds like these, declared illegal by European law and US corporations, come loaded with an underground history at once social and biological . . . The return of ancient seeds is like reverse engineering, taking apart fold by fold this long history. (Taussig 2015)

Where early bio art might be accused of gene fetishism, taking too seriously the promises of biotech (see Haraway 1997, Strathausen 2017), the Future Farmers project emphasized the material qualities and transport of larger-scale germination units, locating these too within an oceanic history. “Seed Journey” pointed to the travels of biotic substance, not in circuits of biotech but in precapitalist seafaring—even as the project, in parodying colonial travel, could not escape a certain recapitulation of gentleman science-commerce. Drawing similar nets around voyaging histories (and with similar risks of activating a colonialist optic, even if ironically), artist Anicka Yi imagines bioprospecting among the riparian currents of the Amazon in her 2017 three-dimensional film *The Flavor Genome*. The form of the traveling art-science journey has appeared elsewhere, as the Vienna-based Thyssen-Bornemisza Art Contemporary Foundation (TBA21) invites artists onto its live-and-work-aboard boat, the *Dardenella*. One such voyage was partially documented in an oceanic exhibit entitled *Tidalectics*, after the Barbadian poet Kamau Braithwaite (Hessler 2018).

Think, next, about the “Crochet Coral Reef Project,” a collaborative, distributed art-craft project inaugurated by Margaret and Christine Wertheim, codirectors of the Los Angeles-based Institute for Figuring (IFF), “an organization dedicated to the poetic and aesthetic dimensions of science, mathematics and engineering” (<http://www.theiff.org/>). The Wertheims promote hands-on apprehension of such scientific and natural forms as the Fibonacci series, the snowflake, and the sea slug through the modeling and making work of weaving, knitting, and origami—a fusion of calculation and fabrication. The “Crochet Coral Reef Project” is a networked enterprise inaugurated in 2005 that creates a material homage to the beleaguered Great Barrier Reef through concatenating “loopy ‘kelps,’ fringed ‘anemones,’ and curlicued ‘corals,’” fashioned through the craft of hyperbolic crochet, a technique invented by Cornell mathematician Daina Taimina in 1997 to model hyperbolic geometry in three dimensions (Inst. Fig. 2017). Emphasizing the topology of the hyperbolic surface, which proves biologically efficient in maximizing surfaces for energy exchange in aquatic environments, hyperbolic crochet forms eerily mimic evolutionary outcomes. Scholars in anthropology, history of science, and STS have found this project provocative for thinking through oceanic stewardship and representation (Roosth 2013, Helmreich 2016a, Haraway 2017). The *New York Times* called the reef an “environmental version of the AIDS quilt” (Cohen 2008), meant to draw attention to the anthropogenic destruction of reef systems, a significant concern of the Queensland-raised Wertheim sisters.

In a more human biopolitical register, Atelier Van Lieshout, in collaboration with the Dutch feminist activist nongovernmental organization Women on Waves, designed a portable gynecology unit for ships to provide safe abortion on international seas, a piece welcomed into waters off the 2001 Venice Biennale. Where early genetic art often bypassed the question of reproductive politics, Women on Waves leveraged the power of installation art to act in the world. As Laetitia Wilson & Tarsh Bates (2015) argue in a review in *Anthropology Now*, “The Women on Waves project has generally been discussed as feminist activism, but its own claim is broader: Women on Waves sees itself as a hybridisation of art, politics and medical technologies, mobilised to interrogate and intervene in global relations of biopower.” It “capitalizes on the perceived irrelevance of art to traverse complex geo-political waters in ways that an otherwise activist project would struggle to accomplish. The banner of art enables greater mobility for the vessel; the collaborators are conferred a ‘special status’ through art—which is perceived as less problematic than political

activism.” Art historian Carrie Lambert-Beatty (2008) suggests that the project’s “brilliance is in recognizing the special power of . . . using bodily care to do representational work” (p. 320).

Examining bio art through the lens of the oceanic brings into view the politics of travel, colonialism, exile, and rootlessness. As a realm often imagined as surreal, the sea—at surface and depth—also affords an optic for refracting the biofictional and the biofactual through one another.

ECO ART AND ANTHROPOCENE ART FROM LAND TO SEA

Much eco art and Anthropocene art is indebted to the idea of “social sculpture,” a notion articulated by German conceptual artist Joseph Beuys in the 1970s. For Beuys, social sculptures were large-scale undertakings (e.g., a thousand tree plantings in a city) that invited public participation in the service of social critique (for anthropological meditations on Beuys’s sensibility and fieldwork method, see Stoller 1989, Walters 2010).

Consider OCEA(n), the Ocean Commons Entanglement Apparatus (in the absence of the concept of “Nature”), by the art collective “spurse.” Sponsored by the Whitney Museum of American Art in 2010 and held at the Kitchen (NY) as part of a study program entitled *Undercurrents: Experimental Ecosystems in Recent Art* (Fournier et al. 2011), spurse’s OCEA(n) was animated by the group’s interest in civic society and community outreach. As they described it, “OCEA(n) is a series of three collapsible and portable field station units that travel the total length of the Northwest Atlantic. From the coast of Maine to Chesapeake Bay, OCEA(n) is designed to catalyze the building of human and nonhuman alliances across the ecosystems of the Northwest Atlantic seaboard” (spurse 2010).

Describing floating field stations “packed with nets, maps, tide books, a GPS-enabled computer and modular furniture,” spurse imagined the piece as a “mobile social sculpture” that extended their earlier project “Working Waters” (spurse 2010). In that enterprise, inaugurated in 2005 at the behest of Coastal Enterprises, Inc., a Maine-based rural business development concern, spurse asked how community fisheries and working waterfronts—displaced by tourism around North America—might be supported by public art. The result of “Working Waters” was an archive of oral histories, maps, and diagrams created in interview–collaboration with Maine fishers, lobsterers, clambers, and oyster and mussel farmers, and it was presented at the Maine State House (compare Brandon Ballengee’s 2001 displays of New York City fish market biodiversity; <https://brandonballengee.com/the-ever-changing-tide/>). With OCEA(n), commissioned by the Northwest Atlantic Marine Alliance, spurse aspired not only to bear witness (a common mode of eco art), but also, perhaps, to enact what organizational theorist John Shotter (2006), inspired by Haraway, calls witness, a working with-in community, a project that requires ongoing exercises in navigating trust, avoiding unequal relations of representation, and keeping in critical view the boundaries between ethnography and tourism.

Threats to maritime ways of life are just one matter of concern for eco artists. Also significant are extractive economies that wound ocean ecologies, tying together far-flung places in conjoined damage. Zurich-based video artist Ursula Biemann does work she describes as “strongly research oriented,” involving “fieldwork in remote locations” where she investigates “climate change and the ecologies of oil, ice and water” (Geobodies 2018). Biemann’s 2013 video essay, *Deep Weather*, tracks between “the ‘Carbon Geologies’ of the tar sands in the midst of the boreal forests of northern Canada” and “the ‘Hydrogeographies’ of the near-permanently flood-threatened Bangladesh—two remote and simultaneously occurring scenes connected through their atmospheric chemistry. The linking of these two landscapes is pursued through two narratives, one about oil, the other about water—vital ‘ur-liquids’ that form the undercurrents of all narrations as they are activating profound changes in the planetary ecology” (Biemann 2016, p. 375). Biemann’s work takes a roving, global approach and might be complemented/critiqued by recent

anthropological scholarship on less abstractly embodied and territorialized chemical damage (e.g., Murphy 2017), ethnographic accounts of highly specific relations among “corrosive atmospheres and the play of enzymes, affects, and reagents,” and “chemical species in water, soil, air, human bodies, and emergent ecological assemblages” (Shapiro & Kirksey 2017, pp. 482, 481; see also Neimanis 2012). It may be that new genres of chemo-atmospheric-ocean art can both draw from and cut down to size a sometimes-too-overarching Anthropocene analytic (see Davis & Turpin 2015). Contrasting with Biemann’s “ur-liquids,” for example, would be the oil summoned up by Nigerian painter Jerry Buhari, who, with *Melting Planet* and *Spillage of Black Gold (in the Pipeline)*, summons the gleam of oil poisoning the Niger Delta through the medium of acrylic paint (Obodo & Anike 2014, Milbourne 2017; compare Schuppli 2015 on the aesthetics and forensics of oil slick photos).

Anthropocene eco art can reach far out to sea (or into the deep; see the films of Mariele Neudecker and Armin Linke). Consider artists who have commented on—and derived materials from—the Pacific Gyre, a high-density area of microdebris swirling in the Pacific Ocean (Decker 2014). American conceptual artist Mark Dion was invited to explore the gyre and its deposits on Alaskan islands, offering a “cabinet of curiosities” produced from the industrial fishing waste that dominates this refuse (see Erickson 2017). Artist Pinar Yoldas (2014), in a contrasting approach, asks what life forms might look like if they evolved from the damaged contemporary sea (see **Figure 1**). Her exploration of the “plastisphere” (see Zettler et al. 2013) in *An Ecosystem of Excess* imagined surreal creatures emerging from the poisoned sea (on the ocean as a site of the surreal, see Hayward 2005)—a speculative extension of anthropological accountings of the gyre as the production of a *Homo detritus* (Monsaingeon 2017) snarling other creatures into multispecies “plastic naturecultures” (De Wolf 2017).

Many artists have focused, like Dion, on the coastal effects of waste, looking at it in situ. Alejandro Durán’s “Washed Up” series is a photographic and installation-based presentation of trash washed up in Mexico’s largest federally protected reserve, Sian Ka’an on Yucatan’s Caribbean coast. Durán employs scientific maps of ocean currents to show where shore waste at this UNESCO site is likely to have come from. Ecocritical scholar Lizabeth Paravisini-Gebert (2019), in her forthcoming “The Debris of Caribbean History: Literature, Art and Archipelagic Plastic,” writes that waste-based waterscapes such as Durán’s “intervene in the reimagining of ‘landscape’ as it has been understood in the European/colonial/tourism imaginary while giving voice to deep concerns about the health of the [Caribbean] region’s coastal environments.” She also discusses Jean-François Boclé, whose *Everything Must Go* employs “imperial debris,” using “cobalt plastic shopping bags as artistic material [to] link environmental pollution to the pernicious and lasting impact of the institution of slavery, connecting global consumer exchanges and the disposal of trash to the discarding of African lives during the Middle Passage . . .” Boclé’s work evokes the ocean as a site of loss and of seaborne racism (see Spillers 1987 for a canonical articulation; consult also Hayward 2016).

Are all human material additions to the ocean garbage? British figurative sculptor Jason deCaires Taylor is noted for his Museo Subacuático del Arte (Underwater Art Museum), off the coast of Isla Mujeres, Mexico. Claiming to use “nontoxic, pH neutral marine grade cement, free from harmful pollutants,” the artist installs life-size, conventionally rendered human forms on “barren sandbanks” to “draw tourists away from . . . existing reefs,” consciously alluding to 1970s Earthworks to privilege in-person underwater visitation (deCaires Taylor 2018). Literary theorist Melody Jue (2018) describes the installation in *Wild Blue Media*:

Comprised of clusters of human figures placed below 30 feet of seawater, the Underwater Museum is home to vibrant communities of sea life, shaped by the materiality of the ocean environment . . . Here,



Figure 1

Pinar Yoldas's "Petrogestative System: Digestive System for Plasticsphere Birds," glass, water, various types of plastic, air pump, 35 cm × 25 cm × 70 cm, from *An Ecosystem of Excess* (Yoldas 2014), a biofictional series of artworks imagining what life forms might look like if they evolved from today's damaged sea. Figure used with permission of Pinar Yoldas.

seawater itself—the carrier of coral eggs and other life forms—figures as an artistic and evolutionary force that transforms the sculptures into colonies of organisms. It is not difficult to see these sculptures as views of a posthuman future, of coevolution between human and other species, and a blurring of boundaries between subject and environment.

DeCaires Taylor's work has been taken up by popular commentators as a pronouncement on the Anthropocene (indeed, one work, a submerged sculpture of a Volkswagen Beetle featuring a person huddled up against its windshield, is entitled "Anthropocene"). But these sculptures, in which human and nonhuman deliriously come together, may in some ways reinstall the boundary between nature and culture, with nature now simply overgrowing culture.

Compare such work to the social sculpture of the Brazilian dance group Cargo Collective, which has created "Mar" (Sea). Under the direction of Marina Guzzo, dancers working with silver thermal rescue covers (of the sort used to warm people who have been treading water in the sea but originally developed for astronauts) generate choreographic waves that evoke beauty, the trial of refugees, and ecological damage (<http://cargocollective.com/marinaguzzo/Mar>). Performing the dance at an anthropology of science conference in São Paulo, Brazil, in May 2017, the Cargo Collective emphasized that whatever the material "nature" of the ocean is today, it is multiple—high-tech, low-tech, sublime, dirty, lively, deadly—not simply an ahuman force with which one might, as human maker, negotiate.

Continuing with the politics of sea and social space in the Global South, the multimedia exhibit *SOAK: Mumbai in an Estuary* was staged in 2009 at India's National Gallery of Art in New Delhi under the curatorial direction of Anurandha Mathur & Dilip da Cunha (2009). Inviting artists to think about hydrology and urban planning in the wake of the Mumbai floods of 2005, the exhibition was dedicated, as anthropologists Appadurai & Breckenridge (2009) wrote in their foreword to the catalog, to thinking about how "Mumbai's apparent hard edges are the historical product of a determined effort to imagine lines where none exist and then to make them survive in the face of an *aqueous terrain* which constantly defeats their materiality" (p. viii, emphasis in original). Artworks at *SOAK* imagined new ecological infrastructures, looking through "the lens of flood." In *Hydraulic City*, an ethnography of Mumbai's water pipe infrastructure, Anand (2017) draws on *SOAK* to underscore how urban Indian water geographies have been formed through political-aesthetic intervention. Think of *SOAK* as a genre of what some anthropologists who research land-sea exchanges call "amphibious anthropology" (see ten Bos 2009, Gagné & Rasmussen 2016, Krause 2017, Pauwellussen 2017).

The technoscientific mapping of fluid incursions into urban infrastructures also motivated artist Charles Lim Yi Yong's *SEA STATE*, about the politics of land and sea around Singapore (<https://www.charleslimyiyong.com/seastate>). Exhibited at the 2015 Venice Biennale, this series draws on hydrological survey data to map Singapore's underground liquid hydrocarbon storage facility, a map that, as anthropologist Fischer (2016) has noted, underscores the sheer technicity of this island nation.

The tensions between technical solutions and the forces of accelerated entropy govern much Anthropocenic art. In Jakarta, artists Irwan Ahmett and Tita Salina (2015) have created a fiercely ironic work entitled "1001st Island—The Most Sustainable Island in the Archipelago," so named because it is made of marine debris and may be able to float above the rapidly sinking Indonesian megalopolis. With similar irony—though in the wake of a much more sudden oceanic disaster—"Don't Follow the Wind" is "a collaboration between 12 Japanese and foreign artists who have put together what might be the most inaccessible art exhibition in the world" (McCurry 2015), interrogating the coast of Japan following the 2011 tsunami and Fukushima nuclear plant meltdown. Installing the exhibition on the site of the irradiated city and coast, artists and curators ensured that installations could be neither accessed nor safely documented.

Australia has a long tradition of eco art—and while Western notions of nature as an increasingly fragile sublime have informed much of this work, Indigenous peoples on that continent have actively contested such approaches, posing land and water not as pristine and unoccupied arenas, but as full of social relations. “Indigenous artworks,” writes art historian Catriona Moore (2007), have “showed how European regional landscape traditions have been premised on the invasion and ruination of other peoples’ country” (p. 366). Yorlju maps of sea country created as bark paintings in the 1990s, for example, have been positioned as legal documents to support Indigenous claims to fishing and sea space around Yirrkala (Buku-Larrnggay Mulka Cent. 1999), and water-themed Indigenous works—about river reclamation, drought and dispossession, and technocratic water table management—insist that the hydrodynamical is enmeshed with the social relations of sea country. Think of *Wutharr: Saltwater Dreams*, a 2016 film by the Karrabing Film Collective (which includes American anthropologist Elizabeth Povinelli) that offers an “improvisational realist” documentary-fiction working through technical, political economic, and religious explanations for the travails of travel by sea. Farther south, Chinese-Australian artist Jane Quon turns to technical materials to track ecological damage in Tasmania, particularly in her 2000 installation, *Ballast Exchange*, which “was developed from a combination of phenomenological and scientific research on coastal ecology gained through her work as a diver” (Moore 2007, p. 379). As Cheetham (2018, p. 190) observes, “Ecological art is often motivated by artists’ commitment to act in the face of climate change, whether as protesters, restorers, educators, witness, or mourners.” Sculptor Mary O’Brien (2017) affirms that environmental scientists and artists often share a sense of social responsibility that implicates them within the ecosystems in which they work.

SURVEILLANCE AND FORENSICS AT SEA

The genre of surveillance art is increasingly folded into forensic art. This term emphasizes how artists are increasingly availing themselves of highly technical investigative tools (algorithmic data mining, night vision, hydrophones, undercover sensing) to surveil surveillance. Taking aim at regimes of government and corporate electronic harvesting of biometric and other data, this art queries how surveillance technologies infringe on privacy and liberty, contribute to ethnic and racial profiling, and (mis)recognize planetary environmental crisis (see Levin et al. 2002, Paglen 2009, Remes & Skelton 2010, Abu Hamdan 2012, Forensic Archit. 2014, Siegel 2014).

Artist and geographer Trevor Paglen has pursued classified or “dark” sites, recently taking to scuba diving to document on film those “underwater fiber optic cables that compose the physical infrastructure of the internet, specifically the places where the NSA taps them to mine personal data” (Sokol 2015). Paralleling these efforts in the domain of sound art, Charles Stankieveh listens to the “Distant Early Warning (DEW) Line constructed between 1954–56 near the Arctic Circle,” which “was a joint venture between the US Air Force and the Royal Canadian Air Force. A long-distance radar and communication system, the DEW Line created an electromagnetic boundary able to detect airborne invasion” (Helmreich 2016c, pp. 152–53). Stankieveh repurposes this technology of territorial sovereignty, listening not up into the air for enemies, but down, using submerged microphones, to hear, in the ice-melting flow of the Yukon and Klondike Rivers, the effects of global ecological change (Helmreich 2016c), revising technologies of Cold War surveillance to monitor global warming. Jana Winderen produces sound art from the plosives of melting arctic ice [listen to, e.g., “Spring Bloom in the Marginal Ice Zone” (from 2017): http://www.janawinderen.com/exhibitions/spring_bloom_in_the_marginal_i_1.html; see also Wendy Jacob’s “Ice Floe” installation, with sounds sourced from bubbling arctic ice: <http://www.mfa.org/exhibitions/maud-morgan-prize-2011>]. In vision and sound, the forensic aesthetic edges toward the empirical. As with early bio art, forensic aesthetics mimic the scientific regimes from which they borrow.

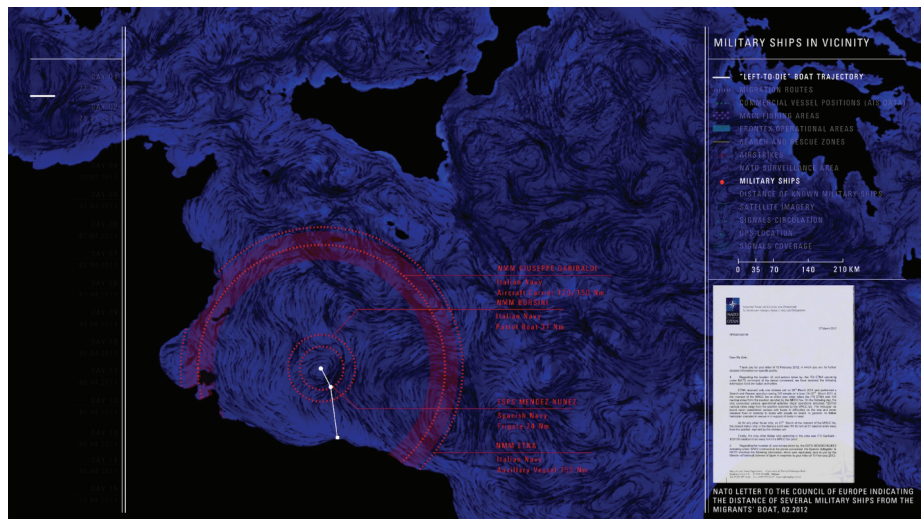


Figure 2

A still from the video “Liquid Traces—The Left-to-Die Boat Case” (Heller & Pezzani 2014), for the Forensic Oceanography project: <http://www.forensic-architecture.org/case/left-die-boat/>. Figure used with permission from Forensic Oceanography.

Forensic art can also overlap with the biofictional. Walid Raad’s “Secrets in the Open Sea” (from 1994 and 2004) is a series of prints meant to draw attention to what Claude Lévi-Strauss would have called the effects of maleficent water: “To the unsuspecting viewer, these large, monochromatic pigmented inkjet prints in various shades of blue are a post-Minimalist answer to Color Field Painting. But in the lower right-hand corner there’s a small, barely discernible, bleached-out black-and-white image of people posing for a group portrait” (Micchelli 2015). The people, viewers are informed, are men and women “who had drowned, died, or were found dead in the Mediterranean between 1975 and 1991.” Raad’s fiction of the ocean “developing” the photographic portraits of the dead points to the often-refractory reality of humanitarian crises.

The group Forensic Oceanography returns to a sober forensic aesthetic with their “Left-to-Die” boat project, in which they examine how technologies of surveillance were used systematically, if perhaps not always in a coordinated way, to avoid rescuing migrants who “lost their lives while drifting for fourteen days within the NATO maritime surveillance area.” As Forensic Oceanography explains their project, “By going ‘against the grain’ in our use of surveillance technologies, we were able to reconstruct with precision how events unfolded and demonstrate how different actors operating in the Central Mediterranean Sea used the complex and overlapping jurisdictions at sea to evade their responsibility for rescuing people in distress” (Heller et al. 2012) (see **Figure 2**). Forensic art motivates a kind of applied, activist anthropology, where data are gathered to critical effect.

CONCLUSION

Artists have parlayed scientific motifs and materials into broad circulation, often with anthropology close at hand. The future, we speculate, will be driven by the energies of queer science and anti-colonial practice, conjoined activities that forego the “witness” of science and its putative objectivity in favor of the “witness” of mutual implication (Shotter 2006). Anti-colonial initiatives



Figure 3

From Max Liboiron's series, "Seeing Like a Scientist," digital image of 0.25–.40-cm plastic fragments ingested by a dovekie from Newfoundland (in 2015), presented in the style of a nineteenth-century microscope slide, illustrating Liboiron's argument that "pollution is colonialism." Figure used with permission of Max Liboiron 2016.

draw from anthropological tool kits to dismantle the circuits of legitimation that construct, of science, a discrete culture. One exemplar comes from Canada: a science project organized by feminist environmental scientist, STS scholar, and art activist Max Liboiron. Drawing on and contributing to Canada's vital discourse on Indigenous and First Nations rights and reparations as well as on her own standing as Métis, Liboiron and those in her laboratory work with Indigenous communities seeking environmental justice and pursue questions of science and technology via aesthetics and citizen science (see Liboiron 2017a; see also Murphy 2017, Myers 2017). Take the sober/tongue-in-cheek application by Liboiron's Civic Laboratory for Environmental Action Research for intellectual property in the Plastic Extraction Nautical Instrument System, a surface trawl "designed to collect then display marine plastics to both raise the issue of endocrine disruption and its links to infertility, as well as develop queer, feminist scientific citizenry" (Liboiron 2017b) (see also **Figure 3**). The acronymically apt P.E.N.I.S. is registered as an invention with a Creative

Commons License, allowing it to roam the seas of art/activism in the name of environmental justice, “employing phallic and sexualized imagery” to call out the ways that “plastics enter our own bodies . . . rendering us as infertile and blighted as the lands we pollute” (Quigley et al. 2015), underscoring Liboiron’s (2017c) argument that “pollution is colonialism.” As Liboiron makes clear, an anthropology is built into this project of monitoring, collection, and forensics because it requires citizen participation in hashing out research priorities, seeking to work against imperial modes of knowledge production and possession.

Neither art history nor anthropology has fully caught up with the biofictional, Anthropocenic, and anti-colonial energies of the artists reviewed in this article, and yet we have argued, equally, that those artistic endeavors have thoroughly imbibed both disciplines. Anthropological notions of cultural critique, to say nothing of the discipline’s views of the constructed character of nature and of science, have fueled artists’ practices of “social sculpture,” even as that aesthetic concept was itself a radicalization of art history toward the anthropological. Science, which may have been a separate culture only in the Cold War British class system in which C.P. Snow claimed his kin, has been read by us through the liquid lens of oceanic art–science, forms of knowledge and making that are now fueling a burgeoning aesthetic and activist production in fluid exchange with contemporary anthropology.

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