Building on Pratt and Haraway’s ideas of the contact zone, we examine the soundscape in two maritime boundaries: the Bali Strait and the Strait of Georgia. Both places, imbued with colonial histories, are rich in ecological diversity and signify different degrees of violence perpetuated against those who attempt to cross their geopolitical boundary zones. Using practices taken from sensory, multispecies, sonic and autoethnography, we explore how sound and listening offer a textual analysis of space, a way to sense and experience histories and the possibility of listening as activism.

The relations between sound and power are especially potent in maritime boundaries. In these places defined by demarcation, sound, in effect, is a sonic blueprint of the assertion of power. Not just the power of nation-states, marked on the map through their bloodied histories of empire and colonialism, but also the power of the corporations behind the technological infrastructure in these spaces and the powerful behemoth that is capitalism. Through the accounts of two ethnographic case studies that used practices taken from sensory, multispecies and sonic approaches and autoethnography, this article interrogates the sonic blueprint of two maritime boundaries. Defined by different limits and ecosystems, but united through geopolitical histories that are disparate yet connected through forces of power and capital, building from the work of Mary Louise Pratt [1] and Donna Haraway [2], we name these fluid spaces Anthropocene Contact Zones. In this article, we present two case studies as examples of these zones.

The first case study, the Bali Strait, Indonesia (Fig. 1), is a stretch of tropical water in which the inhabitants of dead and living reefs negotiate the perils of pollution and the climate crisis, above a system of fiber optic cables (Fig. 2). The second case study, the Strait of Georgia, forms part of the Salish Sea, a network of coastal waterways flowing through southern British Columbia and northwest Washington State (Fig. 3). Inhabitants of these waters are subjected to intense levels of sound pollution from oil tankers and other ships [3]. While these two bodies of water are not unique, they are chosen for their positions at the frontline of our ecological crisis.
[4] and for being radically different spaces whose inhabitants, ecosystems and industries are molded by the geopolitics of capital.

This article views the articulation of sound and our experience of it as an interplay of material and conscious relations—a set of conditions that, in part, are predicated on the localized effects of the geopolitical. Following the work of Brandon LaBelle, who argues that sound documents connection [5]; Salomé Voegelin, who posits that sound that “invites” the body into physical awareness [6]; Anja Kanngieser, who considers sound a tool for political thought [7]; and Jennifer Gabrys, who understands listening as something that enables “new registers of becoming” [8], we offer these case studies as approaches to listening to the geopolitical, as a form of activism.

Referencing Salomé Voegelin’s philosophical proposition...
on the possibility opened up by a “sonic-visual understanding of the world that knows its surface but also appreciates the hidden mobility beneath” [9] and the potential of a sonic sensibility that can reorient the politics of visibility, we define approaches to “listening geopolitics.” The first, building on the work of Mark M. Smith, is a kind of textual analysis that deepens our understanding of that which we already know [10]. The second is an engagement with the geopolitical through sensory embodied practice and the potential to discover that which we do not know. Lastly, we reference Brandon LaBelle’s “listening as a form of resistance” to suggest the possibility of listening as activism [11]. Following LaBelle, we define this as an intentional orientation towards the sonic as a way to inspect political crisis and social response. Listening within the context of these provocations is a way to engage with the geopolitical in contested spaces and create an intervention through sensory embodied practice.

**Anthropocene Contact Zones: Spaces of Active Engagement**

In 2000, scientists Paul J. Crutzen and Eugene F. Strommer popularized the term “Anthropocene” to define our current geological epoch in which humans initiate global geological and environmental change. Since then, critiques to the anthropocentrism of the term—from Anthropocene [12], Chthulucene [13], Eurocene [14] to Capitalocene [15], to name a few—have made visible the term’s political implications. In solidarity with Heather Davis and Zoe Todd, we argue that the Anthropocene is the continuation of imperialist and colonial practices [16] and must be queried through lenses that both recognize what Donna Haraway calls the situated knowledges within science [17] and make space for Indigenous ways of knowing and being to unsettle geographic epistemologies. Building on this understanding of the Anthropocene, and employing a lens of feminist geopolitics, we draw attention to Mary Louise Pratt’s description of contact zones as spaces that involve “conditions of coercion, radical inequality, and intractable conflict” [18], in order to define Anthropocene Contact Zones: locations where species and their ecosystems play host to the geopolitics of corporate economics and technological infrastructure. Highlighting the imperial and colonial histories embedded within these spaces, we argue these relations are generative of the sonic. While geographically situated, Anthropocene Contact Zones are not linear; they loop and fold through a conglomerate of timescales, articulating the present as a densely textured entity. Anthropocene Contact Zones assemble material histories, for instance, the geology of media [19] or the extractive processes that transform the fossilized remains of phytoplankton and zooplankton—petroleum—into the plastic bags that float atop them. These contact zones are sites of “active engagement” [20]—junctures where bodies meet and places where identities are coconstituted as aentral interplays formulated within ecosystems in a more-than-human world [21].

**Geopolitics of Fiber Optics in the Bali Strait**

The sounding of the digital alarm merges with the predawn orchestra of frogs, crickets and birds that are endemic to the area: the yellow-vented bulbul, scarlet-headed flowerpecker, sacred kingfisher. It is still dark. I gather my recording equipment and walk through a murky corridor of bamboo trees. Behind me rise the mountains of the Buleleng Regency, Bali, their teeming mass of jungle cacophonous in the emerging light. My guide, Made, and I head out to sea in a jukung, a brightly colored wooden canoe traditional to the island of Bali.

We still the boat where the living coral ends and the dead coral begins, and we feel into the watery silence punctuated only by our movements and the ripple of water against wood. The Bali Strait is famous for its strong currents, and here a snake of plastic bag billows and oscillates in the water like dystopian marine creatures marking territory between the islands of Bali and Java. I take my recording here, using a hydrophone reeled down into the bleached coral. To my right, the east, at about 15 meters deep, sit large spindles of electrified iron: a reef regeneration project housing murmurations of seeding corals. To the north, south and west lie lying seas, and somewhere close sits the network of fiber optic cables. Like the metal structures that house seeding corals, the cables are situated in the daily lives of reef inhabitants and are entangled in what Una Chaudhuri calls the “vastly different sensoria” [23] of embodied experience within the ocean ecosystem.

Indonesian waters contain 12.5 percent of global coral reef systems; Indonesia’s marine life is some of the most diverse in the world, and it is also disappearing rapidly [24]. Indonesia’s oceans are becoming silent. Warming seas, pollution and adverse fishing practices are accountable for bleached corals and widespread death for reef inhabitants [25]. As Jim Shelton notes, when speaking of how to see a mass extinction taking place in front of you, it is here that specters dwell: “The ecological ghosts of oceans past already swim in emptied seas” [26].

As I listen to the recording, I think about these ghosts and the mediated conduit of digital technology that both blurs the “real” yet also invites the shy and inaudible to be made manifest. The recording documents a wave of clicks and snaps made by shrimp; the rhythmic clacking of crustaceans; the hollow, haunting whistle produced by various fish. I can hear the trill of a dolphin, too, seemingly unhindered by the sonic mark of an engine, monotone, humming in the background. The interactions are loud, complex and textured through layers of pitch and cadence. While indeed, the specters of oceans past assert their absence through silence, multiple species of saltwater shrimp can be heard. Shrimps such as the mantis have been “sounding” these coral reefs for millennia. The mantis’s clicking noises are used to attract mates, mark territory and fend off potential threats. Research shows mantises are communicating as part of a coordinated behavioral system [27] in which we humans are implicated.
via the residue of our waste. Unregulated pesticides from Balinese rice farming run through the subak, or irrigation system, directly into the ocean, alongside the flows of industrial effluent from Javanese mining and smelting of heavy metals and the huge amounts of plastic regularly deposited on local beaches via the tourist industry [28]. Toxic cocktails such as this have the potential to transform shrimps’ DNA structure and have been shown to leak endocrine disruptors, which can change a creature’s sex. Therefore, marine life in this highly polluted stretch of water is subject to changes, the evolution of which is yet unknown [29–31].

The waters surrounding the islands of Bali and Java, in all their sonic richness and complex multiplicity, have formed the geopolitical backdrop for colonial suppression for hundreds of years. The Indonesian War of Independence (1945–1949) turned Indonesia’s littoral waters red in the fight to end Dutch colonial administration and control. After Indonesia’s independence, a networked system of communication was created to form the connective tissue for the disparate islands. From satellites to a network of over 13,000 miles of fiber optic cables now named the Palapa Ring, this multimedia infrastructure links Indonesia’s 27 provincial capitals and situates the archipelago in the global IT community. This network was a postcolonial attempt at national identity formation, a reclaiming of Indonesia’s territories and the perpetuation of what Suharto, the second president of Indonesia, named the Insights of the Archipelago, Wawasan Nusantara [32].

**GEOPOLITICS OF OIL IN THE GEORGIA STRAIT**

I take the recording perched on an outcrop of rocks jutting into the water, shiny black stone layered finely with striated seaweed; the rocks are slippery, and my attempts to balance on them intrude on the immediate soundscape. The cold air smells of salt and fish, gulls screech and swoop overhead and mountains construct the distant horizon, seemingly from all quarters. The piercing, angular call of gulls and the muffled sound of shuffling shoes and coat form a melody against which the monotone of a giant oil tanker constructs an abrasive drone. I lean out across the dark wet and drop the hydrophone. As I listen through my headphones, the noise of the ship is so pervasive all other marine voices are obliterated by a sound that can be likened to the drilling of concrete. It is uncomfortable to listen to and relentless in its onslaught. It speaks to what Steve Goodman et al. describe as an “affective tonality”; a “sonic experience” that is “immersed in a wider field of power” [33]. I listen for a few minutes and feel a wave of relief as I take the headphones off. Unfortunately, for those who are waterbound, escaping this affective tonality, or sonic assault, is not an option. Research shows that in busy shipping lanes sonic pollution is such a problem for orcas and other resident cetacean species that their foraging efficiency is affected, their sonic output is concealed, and they undergo extreme physiological stress [34].

The Strait hosts a rich marine ecosystem and has been the traditional fishing territory of First Nations communities for thousands of years. However, in 1846 a border was drawn between British Columbia and what was then called the Territory of Oregon. Native peoples were systematically forced from their traditional waters and the fluid space of the ocean was severed by a line on a map. Despite the continued movement of coveted salmon, this geopolitical boundary marked a remaking of Native space [35].

Geopolitics is still remaking Native relations to the Strait, which is one of the busiest shipping routes in North America. Constant freight ships offload at Canada’s largest port in Vancouver, and a steady flow of exports makes their way out. Natural resources such as coal, wood, copper, nickel and gold, mined from deep in British Columbia, are exported alongside 300,000 barrels of oil per day, transported from Alberta via the Trans Mountain Pipeline [36]. Built in 1953, the pipeline is undergoing a contentious expansion program, which is set to cross Indigenous territories, putting sacred sites and traditional lands at risk, affecting multiple First Nations communities.

In June 2019 the pipeline expansion was approved by the Canadian government, who argue the economic benefits outweigh risk of damage to ecological systems. The Tsimshian—Waututh Nation—whose traditional lands cover the eastern Burrard Inlet, a fjord that runs into the Strait—have, along with others, launched an appeal in court on the grounds of constitutional violations [37]. The treaty of 1846 ruptured the history of Indigenous relations to the Strait, so too, the movement of oil through this body of water “sounds” geopolitical processes in which voices that are considered “other” are discounted.

The Strait marks a collision of interests. Within its watery bounds, ecological life is inscribed by an inequality of power relations, played out in such a way that it is the voice of petrocapitalism that shouts loudest. The specters that dwell in these cold waters are not generated by the material pollution of unregulated industry; it is the sonic pollution of oil tankers that creates the ghosts of oceans past.

**ANTHROPOCENE CONTACT ZONES: SPACES OF ACTIVE ENGAGEMENT AND LISTENING AS ACTIVISM**

It is not lost on the authors that to listen to the sonic blueprint of Anthropocene Contact Zones through digital technology is to admit to a complicity in the capitalist system we seek to critique. The microphones we use, for instance, would not be possible without the smelting of heavy metals and the subsequent environmental fallout in places like Java. Despite this messiness, we seek to understand how engaged acts of listening can enable a deepened understanding of the geopolitical. To listen attentively to the sonic is to situate oneself at the intersection of geopolitics and sensory perception. To listen is to gain information, and information is power.

Following LaBelle [38] we therefore argue this conception of power is equitable to the practice of activism, which we define as the embodied resistance to hegemonic power structures. Listening as activism prompts an engagement with the rich and fluid connections between species, infrastructure, histories of colonialism and capitalism that are present in the sonic blueprint of Anthropocene Contact Zones.
References and Notes

22. In this article we switch to the present tense to narrate the ethnographies to reflect the way they are conducted.
38. LaBelle [11].

FREYA ZINOVIEFF is a sound artist and theorist whose research reimagines the contrary temporalities of digital technologies and deep and cyclical time in order to illuminate the boundaries between the political, the biological and the ecological, specifically in borderlands.

GABRIELA ACEVES SEPULVEDA researches the histories of media arts from a feminist perspective and produces interactive installations. She has degrees in graphic design, visual arts and cultural history.