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Drift

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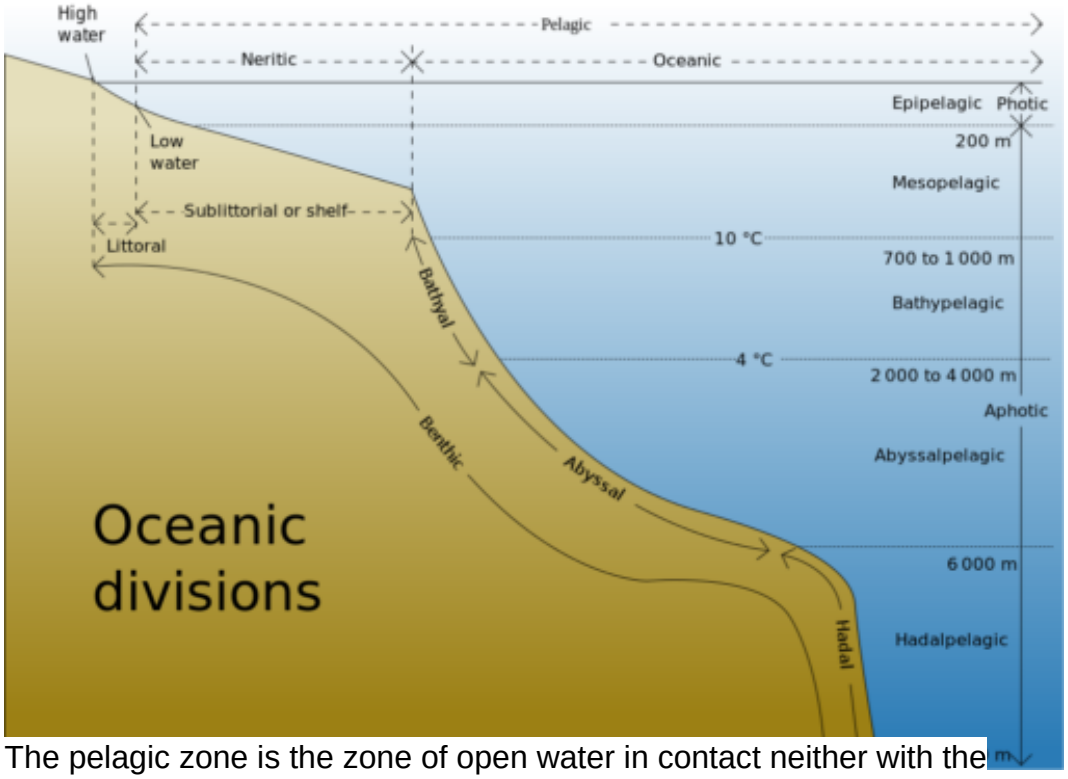
By Charne Lavery

The ocean has long been considered the ideal location for the disposal of waste—including, among many other things, treated and untreated sewage poured easily into the sea, the vast quantities of sand and earth displaced into continental margins by harbor dredging, and the irredeemable byproducts of nuclear reactions secretly sunk. The ocean's vastness, viscerally encountered and culturally reproduced, has seemed a guarantee of disappearance. But that sublime image—wild, limitless, outside—is pockmarked by reminders of both past and distant disposals. Most famously, the now familiar plastic island in the Pacific, made up of vast quantities of slowly broken-down plastic collected in an ocean gyre, so large as to be visible from space. And, a recent scan of the floor of the Pacific Ocean which revealed that even the deepest parts of the ocean, up to four miles down, are littered with humanity's detritus.

It is often very difficult to adequately represent environmental destruction, because it happens so slowly and anonymously—and the ability to imaginatively represent is politically important, linked to abilities to prevent and prosecute (Nixon 2011). As Nick Caverly writes in this series, the toxic impacts of dust are lagged and uncertain because it can so easily be blown or washed away; Michelle Murphey (2016) vividly describes the way in which chemical pollution is displaced not only spatially but temporally, 'such that accountabilities exceed the scope of individual lives, bioaccumulating or persisting over time, across regulatory regimes, beyond research grants and into the conjectural future." One way of doing the difficult work of imagining environmental destruction—so often delayed, anonymous and dispersed—that I would like to explore here, is through the idea of oceanic drift.

Drift, as a slow, fluid movement along lateral and three-dimensional currents; a languorous and unpredictable move from one place to another; a spatial and temporal lag. And oceanic because the ocean is both familiar and strange: easy to picture but also far larger than the human scale and spatially foreign in its three-dimensionality. This is captured by the word 'pelagic', which refers to open seas, water that is not close either to the bottom or to the shore. These are the regimes of the sea—the deep and distant ocean—in which plankton and plastic continually drift. As Jatin Dua

notes in this series, the elemental difference between land and sea has a long legal and imaginative history, must of which revolves around the inhospitability and strangeness of the ocean. However, it is important to not just give in to sea-blindness, or replace it only with 'fluid ontologies'. Rather, he suggests that we trace some sense through stories of things that land up on shore—alongside which I offer stories of those that drift out at sea.



The pelagic zone is the zone of open water in contact neither with the bottom nor the shore. Source: K. Aainsqatsi at en.wikipedia – https://commons.wikimedia.org/w/index.php?curid=3251432

The following then are three cases—real stories that may speak to the imagination—which point to ways in which drifting operates in very distant and very deep parts of the ocean (primarily here the pelagic Indian Ocean) in relation to unusual forms of disposal.

Drift away

The first case is one of unintended consequences, an industrial fishing technique that is premised on natural drifting, intersects with pelagic fish life, and finally results in dangerous detritus.

Schools of fish in the open ocean tend to congregate around natural

floating objects, such as a log washed down from a river in Kenya and carried by currents or the monsoon into the wide Indian Ocean. These objects make valuable fish such as tuna much easier to find and catch. But while the advantages of fishing around floating objects have long been obvious to captains, opportunities to do so were limited by the number of natural floating objects in the ocean—just not quite enough flood-born logs to meet the global tuna demand. In the 1980s, however, purpose-built objects began to be constructed, known as drifting fish aggregating devices (FADs).

Fish aggregating device, copyright Greenpeace/Paul Hilton http://www.greenpeace.org/australia/en/photosandvideos/photos/slideshows/Whats-in-your-can-of-tuna-/A-Fish-Aggregating-Device-FAD/

This drifting-device method is so successful that it has reshaped fishing particularly in the Indian Ocean, leading to worries that it might, if left unchecked, “exacerbate issues of overcapacity” (Davies et al 2014).

But a stranger impact emerges from the fact that the devices are often lost—sinking, drifting away into areas with poor fishing prospects, being commandeered by other fishing boats—such that fishermen constantly deploy new devices. As FADs have proliferated and been repeatedly misplaced, they have effectively created a perpetual artificial floating object habitat across, for instance, much of the northwest Indian Ocean. The consequences of this proliferation are largely unknown, because little is known about why these devices work at all. One hypothesis is they act as indicators of good hunting grounds; another, that they facilitate social interaction among fish, acting as drifting meeting points in an otherwise unmarked sea. In other words, here we have a man-made device that is

modeled on natural, drifting detritus—the FAD drifts and fish congregate around it, and sometimes are thereby caught. But FADs also drift away and are lost, so that the mock-log begins to function again just like a log, a meeting point for fish.

Like the important distinction between flotsam and jetsam there is similarly in this case a sort of doubled drift—both the objects themselves, drifting sometimes aimlessly and sometimes effectively around the ocean, and their meaning and use, from detritus to device and back again. Except for the artificially accelerated proliferation, with its unpredictable, likely ominous, consequences for fish life.

Drift across

This all troubles the image of the ocean as a space into which it is possible to throw anything away, while at the same time, paradoxically, confirming our still immense ignorance about the pelagic sea. Against constructions of the ocean as limitless and beyond human affairs are thrown these uncomfortable reminders of its vulnerability and finitude; and yet, in the other direction again, evidence of impact rests uneasily against indications of ignorance.

Both are highlighted by the search for the lost Malaysian Airlines flight MH370, whose continued, baffling failure can be explained not only by the particularly little-known nature of the southern Indian Ocean, but also by its surprising pollutedness. The search has been so prolonged and wildly expensive partly because that part of the ocean is so distant from human affairs and almost entirely unmapped, but also, in apparent contradiction, because it turned out to be full of distracting debris. The surprisingly numerous patches of debris identified by satellite imaging and flyovers—raising hopes of the plane's discovery and repeatedly dashing them—turned out instead to be "abandoned fishing equipment, the carcass of a dead whale or other pieces of marine trash" (Bremner, 2015).

Those few bits of plane debris that have been recovered have been picked up very far from the original site of the crash. Different pieces have drifted across almost the entire expanse of the Indian Ocean, turning up in South Africa, Mozambique, Tanzania, Réunion and Mauritius. The likely dispersal pattern is captured in the video below, which projects from the proposed crash site to drift patterns over the course of a year.

Debris like this, as well as ghost ships, toy ducks and other recognizable flotsam, are employed by oceanographers to test models used to try to

understand the notoriously complicated, little-understood movements of ocean currents. This is in addition to the many floatation markers intentionally set adrift upon the sea. But the scientific markers are expensive and therefore supplemented by these this other more contingent debris—known by the picturesque terms “passive tracer” or “Lagrangian drifter”.

They also include this list of objects that were washed offshore by the 2011 Japanese tsunami and which drifted all the way across the Pacific to arrive on North American shores, including a fishing dock, a radioactive tuna, and a Harley Davidson. But in both cases—the planecrash and the tsunami—the horrible fact is that some of the human detritus in the oceans are the humans themselves, many lives lost. A forensic pathologist in Japan interviewed five years after the tsunami described what happens to a body that gets taken out to sea:

> “If a body is taken into the ocean and disappears,” Takagi told me, “it’s hard to say what happens to it. No one ever really knows how the sea moves or flows. If a body is pulled down to a certain depth, it stays there. If it catches in fishing equipment, it might float across the Pacific and turn up in Hawaii. A body in the sea will mostly become soft as cheese, so that if you touch it, the skin falls apart. In other cases the body may become encased in a substance called grave wax that makes it turn hard like plaster.”

The same aimlessness, and anonymizing effect, of oceanic drifting gains then a more intimate, tragic aspect when applied to the human body.

The anonymity yet pervasiveness of human impact on the ocean, embodied by these images of drift and dispersion, sits uneasily with a level of unmappedness which allows us to still lose in it whole tankers, planewrecks, and people.

Drift in, and conclusion

From the intimate scale of the body to the scale of the planet, is the vertiginous scalar elasticity required by thinking about the Anthropocene or climate change. A final, short example of drifting, in this case on a planetary scale but with perilous human consequences, is a vast energetic flow of heat into the Indian Ocean. In a report published in *Nature Geoscience* last year, the authors found that a large amount of atmospheric heat is being taken up by the Pacific Ocean, which, confusingly, does not show a correlated increase in temperature. Instead,

the Pacific appears to be transferring much of its extra heat to the Indian Ocean, which now holds more than 70% of all the heat absorbed by the upper ocean since 2003. The Indian Ocean is therefore acting as a global air conditioner, causing a perceptible hiatus in the rise of global atmospheric temperature. And, like the ancient trades in spices, opium and indentured labour, almost all the warmer water is flowing from the Pacific into the Indian Ocean through the Indonesian islands, particularly the Makassar Strait (Sang-Ki Lee et al, 2015).

Warm ocean water can, in the time of anthropogenic climate change, be considered a kind of waste or toxicity, one which seems to be drifting uncontrollably into the Indian Ocean. It is certainly toxic on the local level, as so far the warming has been associated with a 20% decrease in the quantity of microscopic marine life (Roxy et al 2015). But also on a planetary level, associated with the unpredictable, unintended consequences of global climate change. This can possibly be best imagined through the idea that the over-warmed water is not only drifting from one ocean to another, but also sinking into the deep ocean. These regions are largely unknown—as both the search for MH370 and the uncertain pelagic itineraries of drifting fishing devices reveals—which means the effects of that warming will be too.

Floating logs and fishing devices drift into and out of species-specific usefulness; plane parts, plastic and bodies float across vast ocean basins to sometimes land on distant shores; warm water flows inexorably from one ocean to another, and from the surface to the deep. These are stories of ignorance coming up against impact, of small techniques and events spanning immense scalar shifts from intimate to oceanic, and of unknown unknowns—exemplifying, but maybe also going some way towards meeting, the representational challenge with which we began.

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