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Searching for a Remnant in Pixels and Static: The Fleeting Materiality of Plane Crashes

Kathleen Williams
University of Tasmania

Abstract

Following the disappearance of flight MH370 in 2014, citizens, national governments, and agencies searched for acoustic and visual remnants of the plane in order to make sense of the tragic crisis. By turning to the physical and discursive remnants left in the absence of a plane, I argue that planes offer an insight into the role that materiality plays in a crisis, mitigating uncontrollable relationships between humans and their environment. This paper draws upon mass media coverage of the crisis in conjunction with recordings to recreate a visual assemblage of the impact of a missing plane in a globalized world. Extending existing studies of MH370 to conceptualize what a missing plane can mean for mediated materiality, I consider the relations between movement, the ocean, sound, and pixels in order to demonstrate how the material losses of a plane crash make material the networks and methods that connect us across the globe in their failure and absence.

Keywords

plane crash, disaster, broadcast, media technologies, news media

Introduction

As COVID-19 gained traction across the globe, plane travel was framed as one of the primary means of infection and spread between individuals and nation states alike (Nunes). Following

border closures of some countries and a decrease in passenger flying, planes were largely grounded. Planes not only came to symbolize potential infection but the very global mobility that facilitated widespread infection of the virus. Their grounding in socio- and geopolitical spaces of trade, migration, and tourism is such an anomaly that any airport which is typically categorized by a cacophony of industrial sounds is now eerily quiet. The enormity of both planes and of the airline industries has come to a halt at the time of writing, particularly in the author's part of the world—an island with its borders closed to its mainland country and continent, which also has its international borders closed to the rest of the world.

In this article I turn to a different plane—one that, for all we know, now only exists in material remnants and global imaginaries. By turning to the various traces of a missing plane, I seek to interrogate the material role that planes play in crisis, and how materiality functions in crises more broadly. If planes and the airports that disperse them symbolize the material international flows of people and finance, how have missing planes been understood? And, what does the emergency of an international plane's disappearance teach us about the role of materiality in the search for the resolve to a crisis that transcends geopolitical borders and occupies complex temporalities? This paper explores multiple aspects of the disappearance of one plane, Malaysian Airlines flight MH370, to reflect on how planes reflect understandings of data and disappearance, of mapping and search techniques, and the conceptualization of loss amongst geopolitical and social contouring of a landscape—both temporal and spatial. This paper uses the coverage and popular discourse surrounding MH370 to explore the relationship between technology and the natural world through the material iterations of a crisis, particularly in relation to sound and broadcast.

Malaysian Airlines MH370

On the 8th of March, 2014, Malaysian Airlines flight MH370 disappeared. In the process of travelling between Kuala Lumpur International Airport and Beijing Capital International Airport, the Boeing 777 carrying 239 passengers and crew vanished from sight and surveillance and has not been found since. Contact was lost with the plane less than an hour into the flight. There was no distress signal or message sent, and the plane's transponder was turned off as it crossed between the border of Malaysian air traffic control and Vietnam's airspace. A horrific and mysterious international incident captivating the attention of people globally, the disappearance of MH370 and other aircraft like it offer a rich entry point into the study of materiality in crisis. Following the disappearance, mainstream media and citizens across the globe turned to a myriad of tools and discursive structures to try and locate the plane and motives for its disappearance. How the disappearance and subsequent search was represented and understood offers a unique insight into the role that materiality plays in a crisis, and in navigating the relationship between technology and environment.

As the investigation developed, the broader public was informed of the relationship between planes, towers, and pings. We learned of automated information and manual communication and what the difference between the two means for understanding how the plane went missing and where it might be. The media coverage fixated as much on explanatory diagrams as it did on documenting the extraordinary grief and uncertainty experienced by the families of those missing. In the background sat the incessant speculation, buoyed by the joy of being a sudden expert, a sleuth (Robinson). Because of the rhetorical nature of much of the official announcements to the media, the ordinary viewer appeared to be being briefed as well. The nationalities of those on board, the mental health of the pilots, and numerous conspiracy

theories around terrorist plots to down the plane all gained traction with each data point shared with the public held up as evidence.

A geographic picture emerged over the days following the disappearance that extended between multiple countries, oceans, and flight trajectories. It's based on the last known traceable data from the plane from both manual and automated interactions, the weather conditions, and capabilities of the plane. In this time who can claim to be an expert is also slippery and contested. Who deserves the right to speculate on what happened to the people on board, and what work or education background is relevant in making these claims? No answers emerge, other than a series of 'most likely events,' pieced together from fragmented evidence and logic—and, at times, conspiracy (Richardson).

International flights are incredibly ordered and planned movements (Knorr Cetina), "where all transactions take place with a future goal in mind—safe landing at a projected destination" (Bremner 10). From the process of a passenger booking a ticket through to the disembarking and cleaning of the aircraft at the end of a journey, planes are highly regulated objects of movement. People on them who are either travelling or operating elements of the plane's features are subject to international mapping of data and the policies of the institutions that collect that data. That knowledge is not shared with everyone who partakes in travel, as that is seen as being a threat to security—but everything is recorded and, we are led to presume, cross-referenced.

What MH370 came to expose in part is the patchwork nature of these systems, which do not overlap seamlessly between national borders, and the time-sensitiveness to their relevancy. A plane crash or disappearance is a break down in the effectiveness of those systems to protect. As part of an unspoken contract, the privacy of individuals seeking to enter

a plane is mitigated in exchange for safety—the argument goes that the more is known about those on the plane, the safer all people will be. A plane crash is a material crisis of the ineffectiveness of those systems and a tragic evocation of the failure to meet that contract. A plane's disappearance has a slipperiness to its materiality, and an extended period of searching for an entire plane and later fragments further heightens the intensity of this breakdown as the search continues but nothing is found.

Despite being the most expensive search in aviation history (Bier et al. 159; "Considerations on Defining a Search Area"), MH370 is significant for more discursive reasons. As Bier et al. contend:

> … the mystery presents a unique inquiry into media coverage of a crisis because multiple nations are involved and there is no clarity about what happened to the flight: This is a crisis without a known cause and, thus, without an individual, organization, or nation to attribute blame. (159)

Thus, the crisis while being material in its impact, was immaterial in terms of its blame, or at least resisted that logic with no concrete evidence. Maximilian Mayer and Michele Acuto speculate that the search for MH370 is "one of the, if not *the*, largest search and rescue mission[s] ever recorded" (661). It involved "14 countries, 43 ships, 58 aircrafts" which resulted in a search that "mobilized coordinated analysis by states, private deep-sea exploration companies, the datasets of communications and satellites giant Inmarsat, all to identify the still-uncertain location of the wreckage" (661). At times during the search, the area was broadened to cover 1.5% of the earth's surface (BBC) before being narrowed again in the crucial time where a flight recorder would still be transmitting pings. Temporality and spatiality are entirely enmeshed in the material evocations of the crisis.

As Mayer and Acuto recognize, the search for MH370 brought into the public discourse a continuing and evolving conversation about the role and function of multiple niche technologies, typically contained to the realm of experts. This technology was also drawn upon in details of the traumatic impact the event had on families of the passengers.

> The search for MH370 assembled discussions of radar communications, aircraft-satellite 'hand-shakes,' deep-sea exploration thresholds, with those of international maritime borders, international rescue collaborations and even terrorism, with regional tensions between, for instance, China and Malaysia. Highly technical data, a plethora of 3D, GIS and geolocation maps, as much as scores of scientists and engineers, all took center stage besides the more familiar (to IR scholars at least) presence of ambassadors, spokespersons, CEOs and military personnel involved in the search efforts. Yet this is not a matter of sheer discursive presence. (662-663)

Anyone paying close attention to the disappearance through mainstream media outlets was exposed to any combination of these ideas and people. The governing apparatuses and informational networks that enable a plane to fly through the sky also can rapidly ground our untethered belief in their ability to function at all times. The failure of these networks, institutions, and objects makes material the relations between them, even though the plane itself remained immaterial until portions of it later washed up on the shores of remote islands.

Turning to more explicitly material concerns, Sophie Day and Celia Lury deploy "surfacing" in the visualization of MH370 as a way to reference how "relations of observation are constantly shifting, implying and sometimes precluding points of view, and providing ever-changing conditions for visibility and invisibility across situations" (53). Visualizing or searching often produces new objects while making something visible. The various ways in

which the plane was searched for and represented offer perspective into how the crisis was visualized or brought into being. The availability of satellite imagery to people in their homes—which didn't even necessarily represent any area that the plane had actually been in—created new compositions framed through their relation to the crisis, changing the nature of the pixels encountered to be the potential resting place of a few hundred people and the answer to a mystery.

For Day and Lury, the disappearance itself is the result of a *double blind*—the 'blind spots' that we cannot see, enigmatically described by the authors as "gaps, corridors, or out-of-focus patches" (57). That is, between the various maps and systems of surveillance, a plane was able to wind in and out of sight. They write:

> The disappearance revealed that there are edges … in today's apparently boundless surface of visualization, even if we do not always know where they are or how they operate, where or when we might fall into a crevice or over an edge. (57-58)

How are these edges or corridors visualized or understood, and what practices and objects emerge from our exploration into them? Is this where the crisis exists, a material object shrouded in both visibility and invisibility? While the search continued for MH370, the plane was highly visible in our imagination and in the constant searching for material traces, but absent in the physical sense and entirely unlocatable for years. The fragments that we can piece together of the plane and the journey make visible all of the methods and systems of communication that enable flight in the first place, and therefore, materialize the ways individuals and states are connected through mobility, and how that mobility can break down into sheets of metal.

Static: Searching for Sound

The sonic materiality of planes and their disappearances is a crucial, and underdeveloped, element to understanding the relationship between technology and environment in moments of crisis. Planes are equipped with multiple methods of sonic communication that are both automated and manual, designed to avert or lessen crisis. The flight recorder, or black box, is popularly understood to be the key to answers about air crisis, and in the case of MH370, it became clear that the window to find a black box is quite small—around thirty days or when the battery runs out, whichever comes first. If a black box was to hold the answers for how the plane went down, this potential was negatively mitigated by the realization that unlike many other things in contemporary society, access to a black box and the information it holds depends on *physical access*. Without knowing where the plane was, the black box was a concept—ethereal and unlocatable, knowledge without transmission. The black box for MH370 presumably remains on the ocean floor somewhere, rendered useless by time and the expiry of its beacon, a material remnant of a past answer to a question that remains open. Closure is now inaccessible both temporally and spatially.

While the role of unanswered broadcasts from the black box has been addressed by Lindsay Bremner in relation to the materiality of the ocean specifically, I want to extend this discussion to use this example to think about mediated representations of loss and obsolescence, and the limitations of the materiality of objects such as planes to adequately represent the past. Just as the depths of the most remote parts of the ocean are unlived by humans but are imaginable, so too are the horrific last moments of people on board a plane aimed toward the ocean. While the mass media turned to whatever traces of human interaction people who were onboard MH370 had, the audience is left to imagine and calculate the toll of

this loss not only on those left behind but those who experienced the descent of the plane. The fragments of information that help to pinpoint the plane also offer the last broadcast from those who lost their lives in this crisis; the broadcast handshakes and pings offer embodiments of last breaths and goodbyes. Without drawing upon any specific person on the plane or minimizing the extraordinary grief and unimaginable horror felt by those who have lost loved ones on this flight, I want to turn to the broader impact of automated or failed broadcasts from crises, and use these broadcasts to frame further explorations of the materiality of the plane, from satellite imagery to fragments.

In a time where traditional broadcast media is evolving in its reach and uses, the idea of a flight recorder capturing conversations or knowledge is captivating. It is captivating not only for its content as it answers many pleas for explanation but also because of its conditional materiality. The increasing ubiquity of media on demand is not applicable here. Instead, the broadcasting black box losing its battery is reminiscent of older affects and practices such as a telephone call ringing out in a public space, utilized as a trope for loss or mystery in films and television shows. Not only that, but it brings to bear the role the ocean plays in the delivery and failure of our communication systems. Underwater cabling unites states and countries in communication networks—invisible until their failure.

Using liquid metaphors to describe communication technologies as oceanic is something that came about with the invention of wireless telecommunications (Sconce 14). The airwaves that connected disembodied voices between telephones or radios seemed to counterbalance the dominant narrative that media connects, with some characterizing the wireless as "hovering in the ether, not as a community, but as a lonely realm of distant and estranged consciousness, a vast ocean where the very act of communication reminded the

operator of his or her profound isolation" (Sconce 14). Once the handshakes of MH370 became partial and then stopped altogether, a black box and flight recorder presumably lay at the bottom of the ocean releasing unheard pings for thirty days. This lonely journey contained the voices and data of those hideously taken from their planned utterances, unable to make it beyond the vast density and distance of the ocean to share what really happened aboard MH370. Instead, the sonic materiality of MH370 is one of silence, of static. In the absence of sonic materiality—which would provide answers and closure as it can truly encapsulate and communicate the past—the search expands in its scope and interest, all with the intent of locating noise in amongst silence.

An Ocean of Noise: The Sonic Materialities of the Ocean

Planes carry two types of recorders, both of which are typically referred to collectively as a 'black box': the cockpit voice recorder and the flight data recorder. Neither of these is distinctively black—in fact, the flight data recorder is typically more brightly colored to allow a greater chance of it being found—but both emit pings for thirty days after they have been part of a crash, including from the bottom of the ocean.

Crucial to the search for sound and physical aspects of the plane was the ocean. The ocean's currents not only acted as an agent in the dispersal of parts of the plane, but it concealed the likely end point of its journey. Following analysis of acoustic pings, the surface area of the arc through the Indian Ocean was explored extensively before the parameter of the search changed. The Australian Government, in collaboration with Malaysia and China, coordinated the widespread search of an incomprehensibly large area of the Indian Ocean—approximately 120,000 square kilometers (Pattiaratchi and Wikeratne).

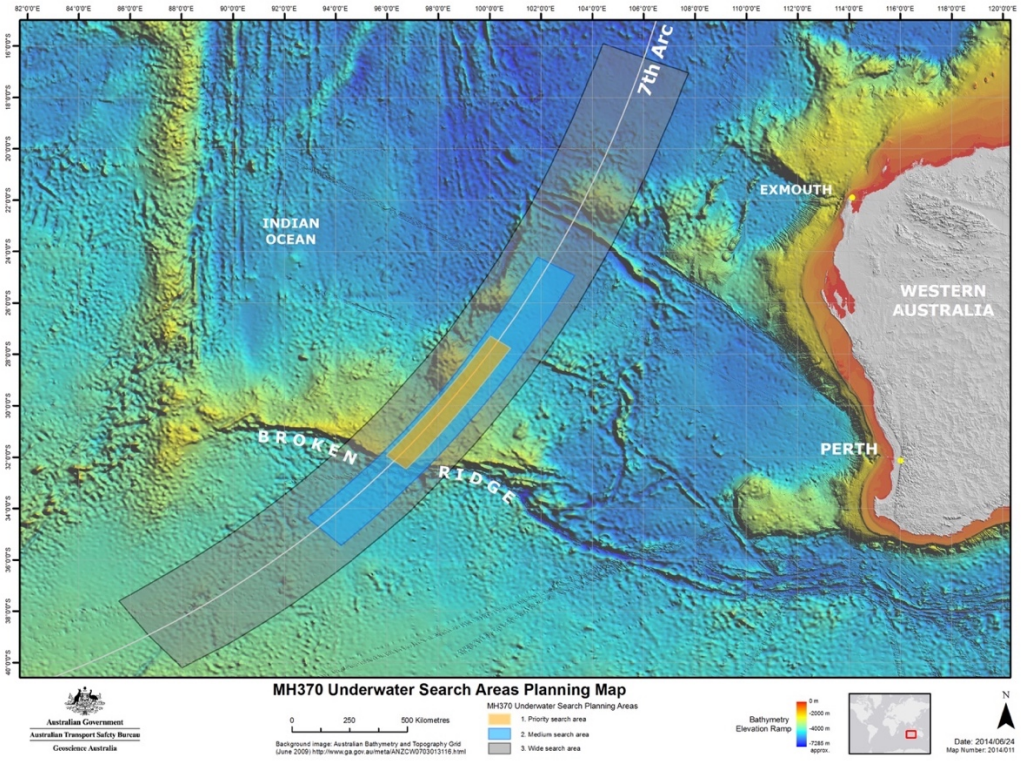

Fig. 1. MH370 Underwater Search Areas Planning Map ("MH370 – Definition of Underwater Search Areas").

It was not only the vastness of the ocean in terms of width that was being imagined in popular media but also the barely evoked ocean depth—which for much of the search area varied between 2000 and 4000 meters. The topography of the seafloor became part of the media narrative and a rich if unseen site for speculation. Mirroring the landscape above the surface, the floor of the ocean is replete with valleys and peaks; we learnt a new topography through the experts on television, one that is only made available through crisis and loss. The search for MH370 revealed new information about the ocean floor, which prior to this expensive and time sensitive expedition was limited (BBC). During the initial deep-sea search period, the search was routinely narrowed and then broadened following new analysis from organizations involved in the search, including the Australian Government, following

particular “acoustic signals” that it was hoped belonged either to the flight recorder or some part of the plane’s remainder. Later in 2014, a Dutch owned ship and a Chinese survey ship both undertook mapping of another portion of the sea floor in order to see if submersible vehicles would be able to be sent safely down.

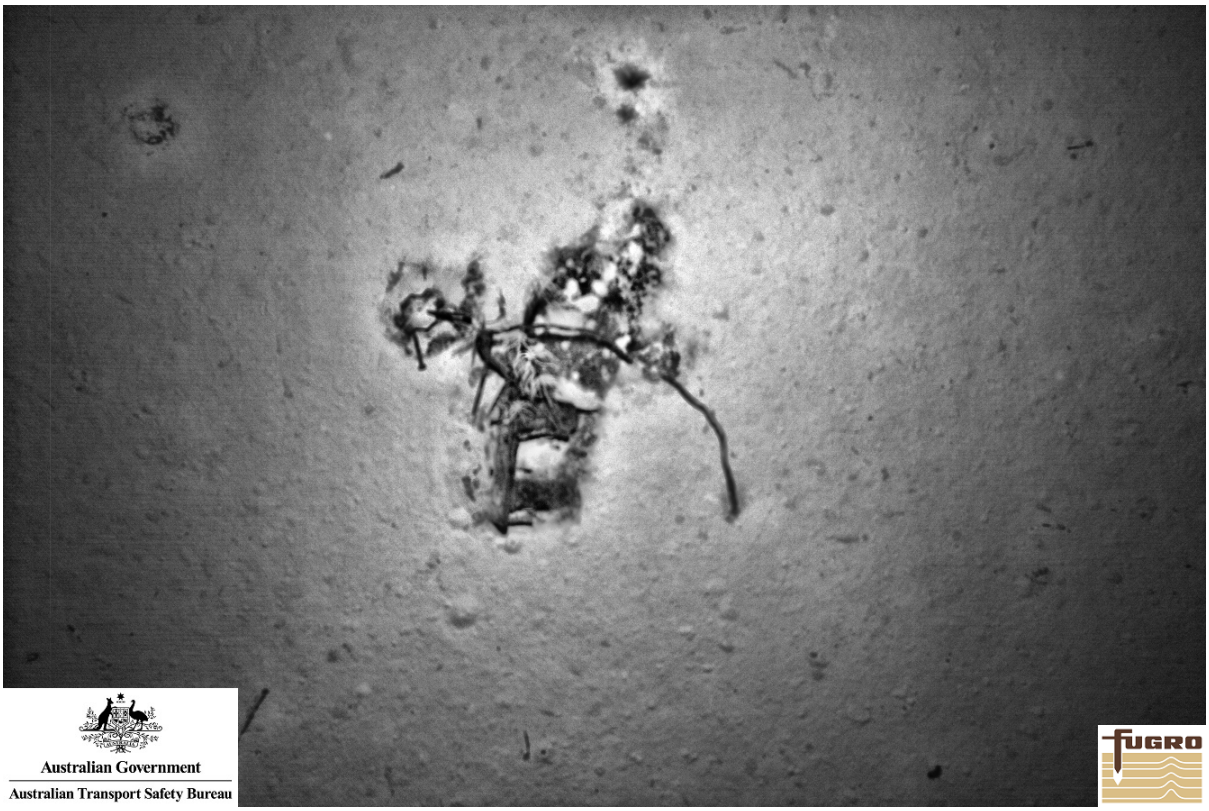

Fig. 2. Unrelated Debris Mapped on the Ocean Floor. (“MH370 Dataset: Shipwreck Photos”)

The unanswered pings that are broadcast by the black box on the ocean floor are not made for human ears. These pings are emitted at a frequency made for other technologies to find them, under dense water, kilometers from the surface. In 2014, when searching for the black box was a matter of urgency, six recordings were made of ultrasonic pulses similar to a black box. The Australian Defence Force released videos to accompany those recordings, as

Bremner explores, visually translating the sounds into wavelengths that were reminiscent of heartbeats (17). It later became apparent that these sounds did not belong to the black box but were likely either an echo of the search ship itself caught in a feedback loop or other parts of the ocean including marine life or debris, which Bremner argues is part of the "increasingly urbanizing marine environment":

> Not only had the ocean been shown capable of lying and the instruments used to listen to it proved faulty and prone to error, but the screen-based media that filtered and translated their data had been shown to be cruelly deceptive. Its effect was not a reduction of uncertainty in the face of disaster, but its magnification, increasing the feelings of anger and helplessness in families of the crash victims and affirming, more generally, the 'dangerous threshold of existence' in a contemporary world where survival is increasingly dependent on such remote sensing technologies. (Bremner 17)

This devastating blow meant that those heartbeats were silenced. In the following weeks as many claimed to be cornering in on the location of the black box, major media outlets started to explore the depth of the ocean in greater detail, trying to create a visuality and materiality to an impossibly large, invisible mass of ocean. As Bremner explores, this took the form of comparing the ocean's depth to the World Trade Center towers, the Washington Monument, and other buildings. This infamous diagram in the *Washington Post Online* was replicated across other media outlets—an attempt to reorder the ocean into life inhabited by humans, where human logic can impact the outcome of a crisis.

The ocean was also responsible for the distribution of the material elements of the plane that had become untethered to the bulk of the aircraft. Over the years following the disappearance, materials that have either been directly attributed as belonging to MH370 or

another unidentifiable plane have been found on multiple shorelines. For those living in coastal areas, foraging metal could have led to a material discovery of the plane. Mapping the potential movements of debris, before the confirmed discovery of part of a wing in 2016 on the West Indian island of Reunion, involved tracking the past through the ocean's currents as well as speculating on the past's wind in largely unchartered waters (Green).

Bremner's rich and poetic work analyzes how the search for MH370 uncovers the "unassailable materiality and opacity of the ocean" (8). Through a study of the "apertures into ocean space"—seven satellite pings, debris, and six underwater sonic recordings—Bremner thoughtfully includes the temporality of the material qualities of the ocean and the plane's entry into and out of it.

> The clues took the search into a remote part of the ocean where land and land-based material, experiential and legal frames of reference receded together. The power and agency of a vast, little known, intensely mobile ocean come into play, stretching to the limit and ultimately confounding all attempts to call it to account for the aeroplane's disappearance. The aeroplane's ongoing invisibility provided a privileged, if tragic, moment to see beyond a world constructed by humans and to get a little closer to understanding the properties of the ocean itself… (Bremner 9)

Like a puzzle of pixels that came to represent an opaque cover on an entire world below, those searching satellite images were not able to materially *see* the ocean, but instead were called to look for debris or shadows of objects belonging to human life outside of the water. The surface of the water was instead more akin to a field, broken up into grids and then pixels, not dissimilar to the methods used in archaeology to dig up relics from the past.

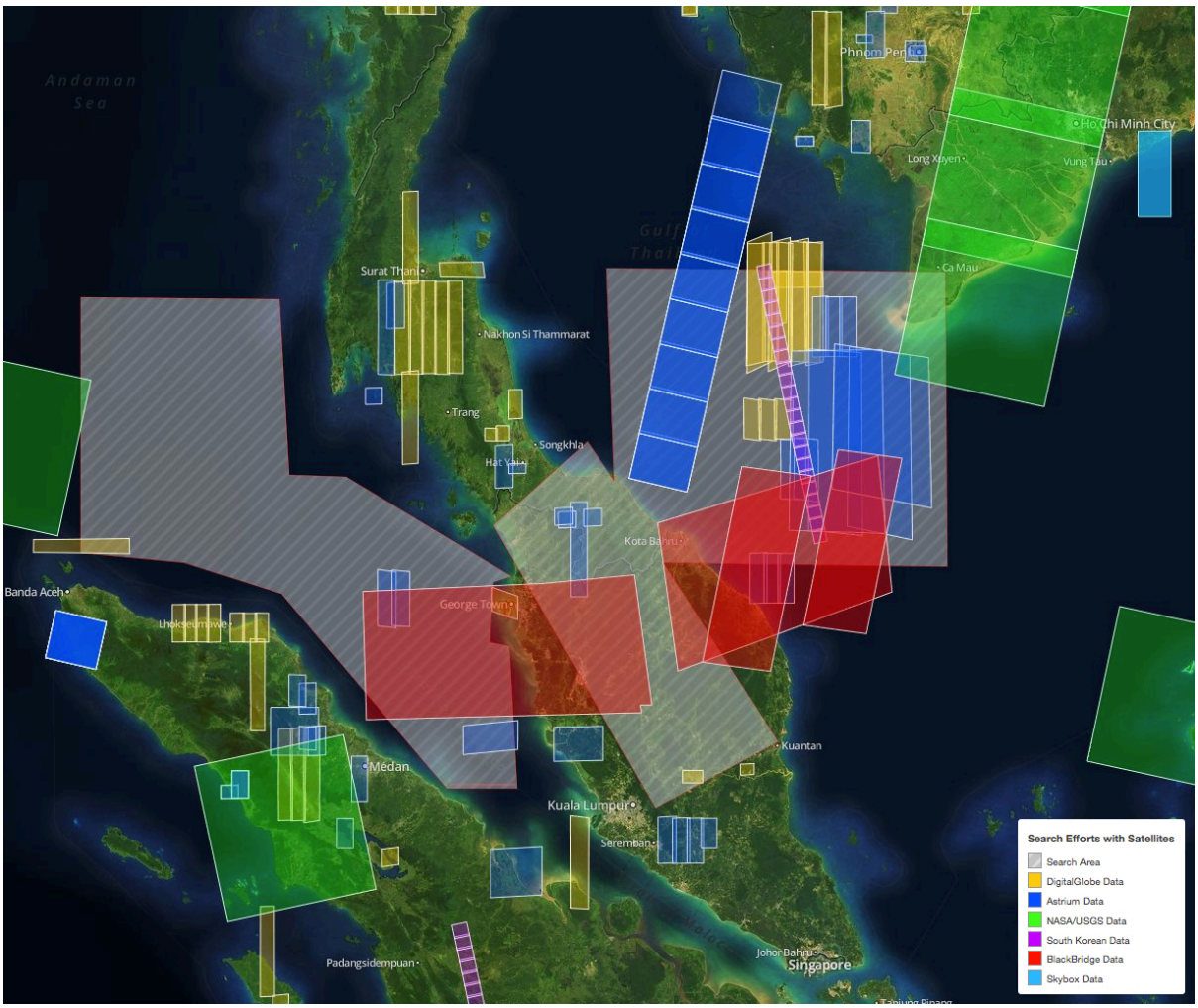

Fig. 3. Search Efforts from Satellites from Space, Mapbox 2014, Creative Commons 2.0.

Similar to archaeological digs, the process of searching for the plane uncovered many other objects that are found in the ocean due to human interference: namely trash from fishing expeditions. As Bremner argues, "MH370's ongoing invisibility … made visible … the sheer volume of trash in the ocean and how geo-physical materialities, forces and rhythms have been appropriated and transformed by globalization and consumerist culture" (15); part of the lifecycle of an object could now be included in the search for a missing plane, relics of consumption alongside something so tragic and unrepresentable. The trash created by and

discarded by humans was a visible presence in the media coverage of the search operation. If, as Brian Thill argues, waste is "every object plus time" (8), the "more than human" materiality of the ocean imprints itself on objects it comes across, weathering them and changing their value. Without the knowledge that a piece of metal is from a potential plane crash, without the logic of a nearby border or search team, crucial parts of a plane crash become potential fossicked bits and pieces for a beachcomber—placed inside a different order of value.

Pixels, Satellite Imagery, and Discursive Landscapes

The MH370 search turned attention to all spots of the globe but specifically those highlighted as the most likely end points for the plane: areas based on vectors stemming from analysis of a combination of space and time, and in some cases, areas chosen based on politics or conspiracy. Beyond the searching by military and scientific teams, there was a fractured crew of people searching via Tomnod, a crowd-sourced project run by a US-based satellite company that is no longer in use. Tomnod provided satellite imagery to be searched by people in their homes, and the service gained notoriety for its use in the citizen-fueled speculation of where MH370 landed. It was also used in the mapping of refugee camps in conjunction with UNHCR, where before and after images became central to mapping humanitarian crises. In this case, the satellite image not only frames the material remnants of a crisis, but it becomes a material aspect of the search and its affect.

Brooke Belisle discusses the role of materiality in Google Earth, a similar but more user-friendly, explorable mapping service, as being part of a long history of attempts to represent a coherent version of the earth, that "render[s] the whole Earth visible" (114). As Belisle identifies, the approach to the Earth as a searchable or scalable model has also been a part of photographic and cinematic history that can be seen in the "cosmic zoom" of films such

as the Charles and Ray Eames' *Powers of Ten* that "integrate a planetary overview with a close-up on the ground" (114). These aesthetic and narrative strategies are at play in Google Earth, which not only utilizes the 'cosmic zoom' but places the user as an interactive navigator of the Earth—available in its entirety to a user, and navigable according to their whims or desires.

The cosmic zoom is arguably at play even in the more institutional search techniques deployed by relevant agencies. The search for debris in the ocean first began in space (Bremner 13), where satellite technologies, as well as buoys in the ocean, were drawn upon as data gathering resources to piece together where the plane might have ended up. In this case, a commercial US-based satellite operator

> … expanded Tomnod its digital crowdsourcing platform … to engage the public in the search for the missing plane. Satellite imagery of the ocean's surface was uploaded to the Tomnod site; alerted on Facebook when new imagery was available, amateur data analysts were able to view it and tag potential signs of wreckage by dropping a pin into a satellite map. A crowd-rank algorithm then identified overlaps in tagged locations before they were investigated by DigitalGlobe analysis. (Bremner 13)

One of those amateur data analysts included the musician Courtney Love, who posted an image of the ocean near Pulau Perak with annotated diagrams pointing to potential oil and the plane with her initials (Newman). Posted with the caveat, 'I'm no expert,' Love was met with ridicule and derision over the post.

For someone searching for a plane in the ocean, the cosmic zoom might be a little different than the Eames' envisaged in their film. Choosing a search area was the first task for a potential plane finder. As mentioned earlier, the zone of pixels coming into focus while the

Fig. 4. Courtney Love's Facebook Post (Newman).

navigator clicks in the direction of their choice, searching for anything reminiscent of a plane, involves looking down onto landscapes. Users scour the online representative earth searching for fragments of the plane, of oil slicks in the ocean, or of any sign of what could be or belong to an aircraft. The pixels of the vast ocean, the sand stretches of politicized deserts and sand banks, and suspect forest canopies all seem to become the one place with each zoom into abstraction. Planes are sought out within squares, not places. The immediate differences in hue are visual guides to what political or social ordering has been mapped over the pixels by its searcher—green squares are perhaps aligned with Rupert Murdoch's theory that the plane has been intercepted by terrorists and is being hidden (Malik); blue pixels might be annotated by Courtney Love. While the squares may be abstracted by the limits of satellite technology at that point in time as to their clarity, they are not free from geopolitical maps and terrains.

Fig. 5. Still from *Powers of Ten*, Charles and Ray Eames, Santa Monica, CA: Pyramid Films, 1978.

Julia Sonnevend found that discussions of technology and data featured heavily in media coverage of the crisis—collectively, more than many other topics, including information about passengers or the pilot or of global collaboration to find the plane. Explanations of the technology used on board and to locate the plane became central to the popular reporting of the tragedy. Despite the fact that locative or communication technologies did not offer an explanation as to how or why the plane disappeared, explanations of the power and precision of locative technologies were seen as crucial to understanding how the plane would be found. It also offered an entry point into familial grief, with family members of the missing exclaiming their disbelief (with us all) that despite existing in an era of surveillance, a giant plane could go missing.

> "I don't understand," Mr. Zhang said over the sobs of relatives. "We have all the technology in the world these days, and how is it that we can't locate them? GPS, phones, everything is so developed, and yet we can't find our families." (Burkitt et al. A10).

MH370 was the first major missing plane since the widespread inclusion of internet-enabled mobile phones, tablets, and laptops. Making the safe assumption that most if not all on board had at least one of those devices, none of these technologies offered a trace as to the whereabouts of the plane. Between what limited data existed of the last known movements of the plane and those aboard it and the knowledge of the *extent* of the technology available to all passengers and crew, there was a palpable disjuncture concerning the promises of technological advancement and its reality. Arguably, the fact that surveillance technologies make us findable is one of the counter points to constant tracking and tracing of our movements. What other corridors can we go missing in?

Sonnevend offers a useful depiction of the temporal layers of speculation at play in the mainstream media coverage of the event, and of institutions, punters, and journalists seeking answers to a mystery that wasn't able to be clearly defined. But what of its material layers? Returning to the notion of before and after images, materiality in satellite images becomes a form of evidence. Before and after images—which have a long history that predates air emergencies—are designed to show the material changes for a political or discursive purpose.

> The contemporary prevalence of before-and-after images shapes our perception of the world. It certainly opens up a new dimension in shifting our attention from the representation of the human agent to representations of territories and architecture, which also turns spatial analysis into an essential political tool. However, the crucial

> thing in before-and-after images is the gap between them, and these gaps resist easy interpretation. (Weizman and Weizman 11)

Eyal Weizman and Ines Weizman refer to this as a type of archaeology, but an archaeology of "the present," that builds a past "based on an analysis of images and the way those images are composed in the pixels" (24). For those searching satellite images looking for evidence of a plane, a recent past is one made up of material elements as evidence of action and relation. This materiality is not only made up of parts of the plane, but in the ocean that distributed its remnants, and the sonic layers of the crisis—which include silence.

Conclusion

As COVID-19 made its way across the globe, corridors were closed off to travel, cruise liners were left out at sea with passengers aboard, and planes were reimagined as potential sources of outbreak. COVID-19 and MH370 alike demonstrate how movement and travel can morph from mobility and access to emergency and crisis. Searching for widespread remnants of an emergency not only involves traversing geographic and social borders but also temporal, sonic and material ones. By reading a combination of fragments, sound, space, and time—in a mediated archaeological dig—it was hoped that the mystery of MH370 could be solved. Each element of the potential mediated remainders of a crisis event also serve as a reminder of the obsolescence of our technologies entrusted with the largest of tasks in ensuring that human life is safe. The loss of sound and objects demonstrates a broader loss in our safety and the faith that we put in our own material creations to mitigate emergencies. Central to understanding both the role of plane crashes in discussions of emergency, and in understanding materiality in emergency, is broadcast. Not only is broadcast representative of the various technologies that intersect in our very global mobility, but its unanswered pings and unanswered transmissions

help make the vastness and depth of spaces we find difficult to materialize as knowable. Crises such as plane crashes also provide a critical understanding of how we conceptualize the furthest points of the globe and the networks and communications that connect those points together. In their loss, obsolescence, and disappearance, remnants and static become material evocations of failure—a failure we are forced to piece together from possible objects and sounds in temporal and spatial imaginaries.

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Kathleen Williams is a Senior Lecturer in Media and the Director of Creative Curriculum in the School of Creative Arts and Media at the University of Tasmania. Her current research is concerned with mapping responses to change and crisis in the cultural industries, and she is working on a broader project on the media history of static in broadcast technologies. Email: kathleen.williams@utas.edu.au.