A Biography of Iceberg B09B

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Icebergs have taken on dramatic new meanings in the Anthropocene. They have long been used as metaphors for an immensity present but unseen, but in the age of anthropogenic warming they also metonymically suggest unstable icesheets, shrinking glaciers and rising seas. Outside of scientific discourse, however, icebergs tend to be considered as a collective, interesting both in their symbolism and materiality, but rarely treated as individual objects with their own histories and futures.

In this article, we canvas some of the ways in which humanities researchers have recently been thinking about ice, and in response offer a brief biography of the iceberg B09B, focusing particularly on its intersection with the human history of Antarctica. B09B's lifetime, which thus far has spanned almost thirty years, has seen significant changes in the Antarctic region: the advent of large-scale tourism; a new focus on heritage, including the historic huts of the region from the 'heroic era' of exploration; the implementation of an international protocol with stringent protections of the environment; and the impact of climate change, manifest particularly in ice shelf instability and glacial retreat in West Antarctica. B09B was by no means a passive bystander in these events. Always entwined with human history, in late 2011 B09B lodged itself in Commonwealth Bay, the location of Mawson's Huts Historic Site, hampering centenary celebrations of the Australasian Antarctic Expedition (1911-14), putting a stop to tourist visits for

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over half a decade, playing havoc with the local ecosystem, ocean circulation, and ice production, and contributing to the besetting of a private research expedition—an event that in turn generated a media controversy. The iceberg became embroiled in a complex story of heritage, tourism, citizen science, Australian nationalism and climate change. The still-unfolding history of B09B is a reminder that Antarctica's history, far from that of a pure wilderness, is one of interwoven natural and cultural objects, actions and events.

Ice, Materiality and Meaning

As a substance central to the current climate crisis, ice has received increasing attention from cultural critics, although often from divergent theoretical viewpoints. Within the environmental humanities, critics are increasingly situating ice within history and culture. Mark Carey argues that to understand 'why glaciers are so inexorably tied to global warming and why people lament the loss of ice, it is necessary to look beyond climate science and glacier melting—to turn additionally to culture, history, and power relations' (500). Julie Cruickshank examines glaciers' 'intangible connections to recent human history', drawing on both local First Nation communities' oral tradition and colonial records at the Alaska/Canada border (3). Alessandro Antonello argues that 'the Antarctic ice sheet, although manifestly objective and present in the world, had to be conceptualised and made' (78). Klaus Dodds' semi-popular history *Ice: Nature and Culture* promises 'an examination of [how] human communities have made sense of ice'.[1] In a call to arms for more scholarship of this kind, Sverker Sörlin identifies the Anthropocene as a 'cryo-historical moment' inviting 'new readings and interpretations of ice that can be provided by the social, cultural and historical sciences—the humanities, especially the now emerging environmental humanities' (328).

At the same time, ice has not escaped the materialist turn, in its various manifestations of actor-network theory, thing theory, object-oriented ontology, and new materialism. In 'Living Ice,' Elena Glasberg looks for 'the possibility of a more direct relation to ice itself … A chance for ice to be just ice' (224, 242). Lowell Duckert argues that ice 'is alive, creaturely and desiring; it carries, disperses and distributes non/human things in its icy trajectories' (71). Lill Børst examines 'ice as a non-human actor in the climate change debate' (133). The role of human culture and history in relation to ice can be hard to gauge in this emerging body of materialist scholarship. Glasberg seems to push in the opposite direction to environmental history when she asks 'How can the ice be discovered outside historical determination? What would ice become on its own?' (222). Duckert

[1] The quotation here is from the publisher's blurb, available via http://www.reaktionbooks.co.uk/.

argues for a liveliness of ice beyond metaphor—"Living ice, never figuratively 'living' ice"—and although he builds his argument around early modern travel narratives, it is ultimately glaciers, rather than human authors, that 'compose stories and dreams' (71, 68). Bjørst analyses the way that metaphors affect ice's role in the climate crisis, but gives ice responsibility for its own figuration: it 'shapes metaphors, creates narratives, and leads actions' (146).

In one sense, these claims for ice's liveliness are easily made. Unlike many other hard, solid substances, ice visibly, and sometimes without obvious external cause, moves: slowly and steadily, as in a glacier, dramatically and unpredictably, like a toppling serac, and often quite noisily. Ice constantly changes, melting into water and reforming, taking on new shapes, colours, and surface textures, perfectly exemplifying Tim Ingold's argument that 'the forms of things … are not imposed from without upon an inert substrate of matter, but are continually generated and dissolved within the fluxes of materials across the interface between substances and the medium that surrounds them' (1). Constantly in transition, mutation and motion, ice has a widely acknowledged dynamism that lends itself very readily to new materialist readings.

All of this attention to ice's liveliness, however, forgets one important quality: ice is cold. Foregrounding dynamism at the expense of this other key quality obscures the extent to which ice is simultaneously associated with liveliness's opposite: stasis, lack of feeling, death. As matter gets colder, it gets slower. Ice gives a sense of this stasis—this ability to 'slow down' or 'freeze' time—even while its noises and movement suggest a disturbing vitality. Ice's key characteristic is not so much its liveliness, but its uncomfortable ability to evoke a kind of strange space between life and death.

This uncanny quality explains the preponderance, in literature of the polar region, of the gothic mode: why Mary Shelley set her novel *Frankenstein* (1818), about the monstrous creation of life from death, in the Arctic; why Coleridge's ancient mariner, who encounters and then experiences a 'Night-mare Life-in Death' (l.193), can never psychologically leave the Antarctic; and why the polar regions constantly produce tales of frozen ancient horrors reanimated to threaten the present. It is this cryogenic quality that is consistently exploited in Louis Nowra's novel *Ice* (2008), in which a man's obsession with his dead wife turns into an obsession with icebergs, ice-making, and technologies of preservation of all forms. One of his characters remarks that bodies encased in ice are '*as if caught in time, stopped in time, as if between life and death*' (131; original italics). This sense of ice's uncanny power has not been limited to imaginative writers; explorers, also, have been alert to its juxtaposition of lively and deathly qualities. When Morton Moyes, one of the members of the 1911-14 Australasian Antarctic Expedition (of which more will be said below), was accidentally left alone in a hut on an Antarctic

ice tongue for more than two months, he began to consider the glacier as 'something alive', and of all Antarctica as 'a slow-brained sentient being … deceptively solid and lifeless but actually full of movement and change, with a low amoebic vitality' (22).

This uncanniness of ice takes on new resonances in the Anthropocene. Novelist and essayist Amitav Ghosh in *The Great Derangement: Climate Change and the Unthinkable* (2017) notes that 'the word uncanny has begun to be used, with ever greater frequency, in relation to climate change'. He coins the term 'environmental uncanny' to capture the disquiet produced by the sudden recognition that the nonhuman has its own form of liveliness, coupled with a new appreciation of one's own complicity in this situation: 'the events set in motion by global warming have a more intimate connection with humans than did the climatic phenomena of the past—this is because we have all contributed in some measure, great or small, to their making. They are the mysterious work of our own hands returning to haunt us in unthinkable shapes and forms' (32). The environmental uncanny provides a new way to understand ice and icebergs. It might help explain, for example, the media fascination with the progress of a widening fissure in the Larsen C Ice shelf that in mid-2017 'threaten[ed] to spawn one of the biggest bergs ever seen' (Amos). Where once such an iceberg might have been framed in the language of the sublime, this requires a sense of human moral superiority no longer available (Latour, 'Waiting for Gaia' 3). Only in the Anthropocene do human observers have the sense that their species' own actions have galvanised ice into motion, in an entirely uncontrolled way.

The birth of a new iceberg, and the unpredictable journey it leads, becomes in the Anthropocene both a metaphor and metonym for our entangled relationship with the cryosphere and with the planet as a whole. Timothy Morton in *Hyperobjects* makes frequent use of icebergs—'the Titanic of Modernity meets the iceberg of hyperobjects' (19)—to explain his thesis of a new kind of object too vast and distributed temporally and spatially to be fully comprehended by current ways of thinking. Photographs of icebergs feature both inside and on the cover of his book, although they are the stereotypical Arctic icebergs, angular and tipped, rather than the massive, tabular Antarctic counterparts that would seem to better exemplify his argument.

The valuable insights gained from the current attention to ice both as materiality and as (hyper)object notwithstanding, scholarship has tended to genericise or make an abstraction of 'ice', while ignoring its specific and local forms. The Arctic, Antarctic and alpine regions, bergs, glaciers, and sea ice, are often rolled together as icy parts of the planet, endangered and endangering. Ice's mutability is frequently emphasised; less is said about its durability. Yet the tabular bergs that regularly break off the Antarctic continent can be the size of small countries and,

despite ongoing fracturing and melting, can have lifetimes exceeding several decades if they stay near the Antarctic coast. Outside of specialist scientific publications, however, thus far only one berg—the one that collided with the *Titanic*—has received individualised narrative attention—the kind of approach that might warrant the term 'biography'. Marine biologist Richard Brown's *The Voyage of the Iceberg* (1983) gives what we might now term an entangled natural-cultural history of this famous berg. Brown relates its journey alternately with that of the *Titanic*, outlining other encounters with humans and nonhumans, including the Inuit communities and travellers from lower latitudes who may have witnessed its early years, and the birds, seals, whales and other creatures who made their homes in and around it. Many years before Bruno Latour's advice to 'follow the actors' (*Reassembling the Social* 12), Brown's technique is to make the *Titanic* 'only a supporting character in a cast of ships, seals and whales, bears and seabirds, and men as well' (7), while bringing the iceberg to the foreground. While he does not name it as such, Brown wrote the first iceberg biography, not only communicating what he terms its '*natural* history' to a wide audience (7; original italics), but also bringing quite a different perspective to the narrative of human tragedy with which it inevitably intersects.

While Brown could state in the early 1980s that 'There has only been one iceberg' (7)—meaning, presumably, only one that has any individual identity or historical presence in the public imagination—this no longer holds true in the twenty-first century. A68, the iceberg 'spawned' by the Larsen C iceshelf, made headlines in mid-2017; it even had its own twitter handle, where it was described as 'a MONSTER preview of coming attractions'.[2] A68 is in its infancy, its journey still the subject of prediction and speculation, but it, along with several other large tabular icebergs that now have their own Wikipedia entries, is emblematic of the way these forms of ice are proliferating in the Anthropocene. Yet while each iceberg fits into the more general Anthropo-scene, we argue here that each also has its individual significances and history. In this paper we focus on the specific biography of the massive berg, B09B. B09B is in its middle years, a respectable age for the subject of a biography, and as we track its journey and its intersection with the human history of Antarctica, we hope to demonstrate the insights that can be gained by following the iceberg in this particular Anthropocene drama.

The Early Life of B09B

Where Brown had to take an educated guess at the origins of the iceberg involved in the *Titanic* disaster, it is possible to give a very accurate account of the creation and journey of B09B. Since 1978, the US National Ice Centre (a department of the US Navy) has used satellite and other techniques to keep track of all bergs above

[2] The twitter account, most active in July 2017, can be found at https://twitter.com/IcebergA68.

a certain size—currently, at least 20 square nautical miles in area (Taylor).[3] At the time of writing, this amounted to about fifty bergs (there are, of course, many smaller ones). All of these bergs are named, via a strict convention: the Antarctic region is divided into quadrants A, B, C and D, and the bergs classed accordingly, and numbered chronologically; when they fragment, the smaller bergs produced are then named by letter, in the order in which they break off (Taylor). B09B's name, then, indicates that it was second fragment of the ninth berg of sufficient size which originally calved in the Amundsen Sea or the Eastern Ross Sea—the region directly below the Pacific Ocean.

B09B began life, then, as part of a larger berg, B09. This ur-berg calved from the Eastern Ross Ice Shelf in late September or early October 1987—although its origins extended before this time, as the rift in the iceshelf which eventually produced the calving was evident two decades earlier (Keys, Jacobs and Barnett, 243-44). B09 was enormous, one of the largest bergs on record: with initial maximum measurements of 154 by 35km, an area of just over 4,500 square km, and a volume of over 1000 cubic km, it was the rough shape and size of Long Island, to fall back on a familiar terrestrial comparison (Keys, Jacobs and Barnett 243, 246; Jacobs 32). Had it not fractured off the shelf and become a giant berg, the back of the ice would have taken seventy years to advance through gradual glacial movement to become the ice shelf front (Jacobs 35).

From the outset, B09 had a historical character. Even before it came into existence as an autonomous object (to the extent that an iceberg can be termed such), the ice that formed it had impacted and was impacted by human activity. The Ross Ice Shelf is fed by a number of tributary glaciers; the ice making up B09 flowed down from the west slopes of mountains in Marie Byrd Land (Keys 24). As it flows through the shelf, the ice is covered by snow which itself eventually packs down into further layers of ice. B09 was thus made up of ice of varying vintages, the oldest having fallen as snow many hundreds or thousands of years ago. Bubbles in the ice trap carbon dioxide, methane and other gasses (the principle of ice-cores), so B09 (and B09B after it) may have held traces of industrial activity, as well as other pollutants such as heavy metals, DDT and radioactive debris (see for example Tuohy; Geisz et al.; Arienzo et al.). At a macro-level, when B09 calved it took with it one of the most iconically historical sites in Antarctica, 'The Bay of Whales' (Keys, Jacobs and Barnett, 246). Named by Ernest Shackleton, this ice harbour was used by Norwegian Roald Amundsen as the base for his famous journey to the South Pole, as well as American expedition leader Richard Byrd's

[3] The NIC also defines what comprises an iceberg: 'the ice must originate from glaciers or shelf ice. The height must be greater than 5 meters above sea-level, the thickness must be 30-50 meters, and the area must cover at least 500 square meters' (U.S. National Ice Center, 'Frequently Asked Questions').

expeditions of the mid-century; Byrd's final base, Little America V, was carried away with B09 (Antarctica New Zealand).

Having wiped out the material connections with these seminal parts of human Antarctic history, B09 soon started generating its own; the media recognised its appeal, and public interest was boosted by a widely circulated satellite image (Keys, Jacobs and Barnett, 243). Not only its gargantuan size but also its scientific meaning were remarked on, its calving contributing to the climate discussions that would eventuate, over a decade later, in the popular recognition of the Anthropocene. The *New York Times* reported that the 'giant iceberg' had drawn attention as part of an unusual spate of calving events, a trend considered a possible 'harbinger of climate changes to come' ('Science Watch'). In the *Canberra Times*, the idea of wrapping B09 in plastic and bringing it back to Australia for fresh water was jokingly raised; the towing of smaller bergs to Australia had earlier been suggested in quite serious contexts.[4]

Meanwhile, the berg was moving on. A satellite transmitter air-dropped on its surface, along with satellite images from above, enabled its movement to be tracked: it drifted northwest, turned in a large gyre, then resumed its path along the Antarctic coastline, propelled by deep currents, moving up to 13km a day (Keys, Jacobs and Barnett, 243). It briefly threatened to block sea access to the largest US base on the continent at McMurdo Sound, before reaching Cape Adare (Jacobs 35-38)—the site of the first 'official' human landing in Antarctica. Here, in mid-1989, after a journey of over 2000km and 22 months, B09 fragmented, producing B09B (along with its siblings A and C) (Keys, Jacobs and Barnett 243, 254).[5] Smaller but, at 100 by 35 km, and weighing 860 billion tons, still an impressive, Luxembourg-sized object, B09B continued west for a couple of years before running aground east of the Mertz Glacier Tongue, where it nestled for about 18 years. On the move once more in 2010, it again drew media attention when it knocked another large berg (C28) off the glacier (see, for example, Associated Press), before becoming lodged, in late 2011, in the waters of Commonwealth Bay, where it broke into several pieces (Keys, Jacobs and Barnett 243).

Grounded in Commonwealth Bay, B09B played havoc with local ecosystems. Its presence significantly increased the amount of fast ice (land-attached sea ice) in the bay, making it difficult for a local penguin colony to reach open water, and

[4] Although no one would seriously consider towing a berg the size of B09, scientific meetings to determine the feasibility of towing smaller icebergs—possibly coated in plastic—to Australia and other dry southern hemisphere locations had occurred in the 1970s and early 1980s. See Huesseiny.

[5] By mid-2018, only four 'children' of B09 of sufficient size to be named and monitored remain, including B09B (US National Ice Centre, Antarctic Iceberg Dataset).

reducing its numbers considerably (Wilson et al.). At the same time, the fast ice produced by B09B's grounding affected the marine biota in the region, as well as the circulation of sea water, with potentially 'significant impact on the global climate system' (Fogwill et al., 2605). Heralded (in its previous manifestation as B09) by the *New York Times* as a possible harbinger of climate change to come, B09B now found itself, in the kind of feedback loop so redolent of the Anthropocene, an instigator of such change.

B09B meets the 'Spirit of Mawson'

Having begun its journey in a region of the continent claimed by New Zealand, B09B had now unwittingly entered Australia's claim. [6] Its history, already entangled with the emergence of the Anthropocene as a concept, was about to become entwined with both Australian national heritage and Antarctic tourism. During the same period that B09B was moseying around the Antarctic coastline, Antarctic tourism had developed from a niche interest into a mass-market industry. And while many tourists journeyed south for the spectacular scenery (such as B09B), Antarctica's early exploration history was also a drawcard. For Australians, this history is focused on the very place B09B came to rest in 2011: Commonwealth Bay.

[6] The Antarctic Treaty does not eliminate the seven territorial claims, but rather states that they cannot be reinforced or diminished while the Treaty is in place.

Figure 1: A portion of the 'coast' of B09B, Commonwealth Bay, January 2012. Copyright: Ben Maddison.

Cape Denison in Commonwealth Bay is the location of the Mawson's Huts Historic Site. Established by the Australasian Antarctic Expedition (AAE) of 1911-14, and later used by AAE leader Douglas Mawson as an annexation site of what would become the Australian Antarctic Territory, this group of huts and artefacts is now the material anchor symbolically tying Australia's claim to its exploration history (Australian Antarctic Data Centre; Collis). During the late twentieth and early twenty-first centuries, significant efforts were put into the site's restoration, by the Australian Antarctic Division, the Australian Heritage Commission, and the Mawson's Huts Foundation (which had been established for the purpose). In the late 1990s, tourist ships began to visit the site in increasing numbers. Every summer hundreds of people voyaged across the Southern Ocean to this most important of Australian Antarctic relics.

The development of Antarctic tourism to Commonwealth Bay has, then, always been strongly grounded in Australian nationalism, but the AAE's centenary period, 2011-14, sharpened this focus. Tourist companies planned and marketed centenary visits to Commonwealth Bay. The most prominent of these journeys travelled south in January 2012 to mark the hundred-year anniversary of the expedition's arrival. A small party of delegates, including the Director of the Australian Antarctic Division, armed with a message from then-Prime Minster

Julia Gillard, aimed to hold an official commemoration ceremony. However, with B09B's arrival in the bay the previous month, access to the huts had become problematic. The berg's vast extent blocked the annual spring breakup and clearance of winter sea ice from the bay so that instead of navigable waters, the ship faced fast ice that extended many kilometres from shore. While helicopter transport enabled the commemoration ceremony to proceed, the grounding of B09B constituted a dramatic disruption to the event.[7]

Over the following half-decade it continued to pose an obstacle to visits. Although some of the 'heroic' qualities of the original expedition were recuperated by the 'heroic' difficulties faced by modern attempts to reach Mawson's Huts, the berg limited the extent to which the site could become even more imbued with a sense of national significance. Despite this muting of celebrations, commemorations continued in various forms and places. Back in Australia, an uncanny double of the Commonwealth Bay hut materialized on the Hobart waterfront in late 2013: the Mawson's Huts Replica Museum, aiming to be an exact copy of the original, was incongruously surrounded by a neat lawn in the tourist/business district, flanked by a whiskey distillery and an antiques shop.

At almost exactly the same time, another commemorative voyage departed. Its aim was to replicate some of the scientific research of the original expedition and to observe environmental changes in the region, including the impact of B09B. Named, in deference to the original, 'The Spirit of Mawson: Australasian Antarctic Expedition 2013-14,' this was a privately funded expedition led by University of New South Wales climate-change scientist Chris Turney. Using a chartered, Russian-flagged tourist vessel, the *Akademik Shokalskiy*, the expedition included 'a team of professional and citizen scientists' (Turney, 'Spirit of Mawson'): the latter referring to paying customers (tourists) who volunteered to contribute to the scientific effort.

Although the expedition was framed in scientific terms, one of the key objectives of this footsteps-style centenary journey was to reach the Mawson's Huts Historic Site, and to this end it was equipped with large people-carrying sledges along with over-snow vehicles designed to pull them.[8] However, B09B had other plans. Its tremendous bulk contributed to the creation of a very rough surface and extensive tract of fast ice between the ship and the hut. This, combined with soft snow created by unusually warm weather, made it impossible to use the sledges to reach

[7] Historian Tom Griffiths' blog of the centenary voyage captures a sense of the iceberg as an actor in the proceedings, referring (in the entry of 13 January 2012) to its 'awesome, indeed stately, presence' and its 'geopolitical posturing' (https://ceh.environmentalhistory-au-nz.org/aae/the-roar-of-the-wind-and-the-beat-of-your-heart/).

[8] This summary of events is based on the experience of one of the authors (Maddison), who was a member of the expedition.

Commonwealth Bay. Using over-snow vehicles, only eleven of the total complement of 54 expedition members actually reached the huts. Then, on the final afternoon of the voyage, as *Akademik Shokalskiy* was heading out from the coast of the Mertz Glacier Eastern, the ship became stuck in rafted sea ice—blown into a compact mass by a south-easterly cyclonic katabatic wind and forced up against the immoveable wall in the west that was B09B (Wang et al.).

For the first 36 hours the officers and crew of the *Shokalskiy* laboured constantly to work the ship through the band of pack ice into open water. Eventually, and after the ship sustained several rips in its hull, the engines were turned off on Christmas Eve 2013, and the ship came to rest, a mere four kilometres from open water. This was not disastrous. Ships becoming trapped in Antarctic ice are not unusual—there have been many cases over the centuries and there is probably an instance every year. Initial hopes rested on a slackening or change in direction of the wind to blow the ice apart. Instead, the wind continued from the south-east, and the ice began to raft and form pressure ridges, as floes were pushed on top of each other. Day by day the distance between the ship and open water increased, reaching around 22 kilometres after several days. As the situation became clearer, some of the more serious dangers of being 'beset' started to emerge. The *Shokalskiy* developed a moderate list as a result of the immense pressures generated by rafted ice, which can crush and sink ships, most notoriously Shackleton's *Endurance* in 1915. A more immediate concern was the threat of several mobile icebergs in the vicinity. Although the ship was fast in the ice, bergs propelled by under-ice currents were capable of carving right through the sea ice and the *Shokalskiy*. Considering these factors, the ship's Captain Igor Kiselev activated the Pan-pan distress signal (one level below Mayday), alerting international authorities to the seriousness of *Shokalskiy*'s situation.

In the subsequent days, as the conviction grew that there was little possibility of *Shokalskiy* being able to break free, an international rescue effort of considerable magnitude was activated. It involved Australian, French, Chinese and US Antarctic vessels, and global polar marine authorities. Eventually the expedition members were evacuated by a helicopter from the Chinese icebreaker *Xuelong* (Snow Dragon)—which had itself become beset during the rescue—and shuttled to the Australian government Antarctic ship *Aurora Australis.* Four days after the evacuation, the wind changed direction, and *Shokalskiy* sailed away to its original destination, Bluff, in New Zealand. It was rapidly repaired, took on another tranche of passengers and staff, and returned to Antarctic waters, where it completed less notoriously its Antarctic tourism season.

The controversy that ensued during and after this rescue operation pointed up the entangled connections between nationalism, globalism, tourism and ever-mobile ice. Normally, interest in and celebration of the Mawson 1911-14 expedition is

almost exclusively an Australian concern. Yet the rescue effort that had been mounted had called on the resources of many of the key players in Antarctic and polar affairs, and the global real-time media coverage that it attracted lifted it from its nationalistic parochialism. Fuelled by satellite communications and the traditional trope of a Christmas/New Year gone wrong, the episode became a minor global *cause celêbre*. As the situation unfolded it was accompanied by recriminations and efforts to attribute ultimate responsibility for the situation. One irony was the tension between the Spirit of Mawson and the Australian Antarctic Division, whose operations had been significantly disrupted by the ten-day diversion of the *Aurora* from its annual resupply of Casey Station. Here Australia's national Antarctic program ran up against the private attempt to blend Antarctic tourism with Antarctic science. [9] Many commentators—including the Russian Federation in an official submission to the 37th Antarctic Treaty Consultative Meeting—argued that the combining of research and commerce was the key to the problem: that the imperatives of satisfying paying customers led to decisions that delayed the departure from the ice edge when it was most needed.

Others—including Turney—attributed the besetting to unusual and unpredictable environmental conditions: being in 'the wrong place at the wrong time' (Luck-Baker).[10] This was rhetorically dangerous territory, however, for a climate change scientist. Climate change sceptics seized on the apparent irony of an expedition that set out to investigate, among other things, the impact of global warming, finding itself surrounded by an unusual amount of ice. An article in *The Australian* entitled 'An Icy Blast of Scepticism' typifies and summarises this response.[11] Noting that Commonwealth Bay was free of ice exactly one century prior to *Shokalskiy*'s besetting, environment editor Graham Lloyd observed that 'for more than a week global attention has been focused on the fact that in recent years Antarctic ice has been growing, not shrinking … Sceptical bloggers across the world have had a field day with the irony of it all'. For Lloyd, the 'bottom line' was that 'nature has drifted from the script'—meaning, presumably, that observed conditions have diverged from the warming, melting future that climate change scientists had predicted. But the ice in Commonwealth Bay was a local effect, although one tied to global events: the fast ice produced by the huge iceberg's arrival. If any drift could be held responsible for the episode, it was that of B09B, erstwhile symbol of climate change's global impact.

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[9] The French and Chinese programmes also suffered major interruptions to their scientific work.
[10] Andrew Luck-Baker, who was on board the *Shokalskiy*, provides an excellent contemporary account of the key positions adopted in this discussion.
[11] The article's scepticism is indicative of the national newspaper's broader coverage of climate science around this time: a 2013 survey of climate change coverage in Australian newspapers concluded that *The Australian* played 'a significant role in promoting climate scepticism', noting (for example) that, in the three months surveyed in 2012, 54 percent of its articles 'questioned or rejected the consensus position' on climate science (Bacon 143-44).

By 2016, the berg was on the move again, having shed another large fragment (B09I) and floated off the coast, where it remains, now a pale shadow of its former self at a mere 27 x 9 nautical miles (NASA; US National Ice Center, Antarctic Iceberg Dataset). To the relief of tourist operators and penguins alike, sea access to Commonwealth Bay became once more possible. In the summer of 2017-2018, the pilgrimage to Mawson's Huts resumed, with the *Akademik Shokalskiy* making the first journey. However, the ice conditions meant that although huts could be seen, they remained out of reach (Armitage).

In the meantime, Turney had released a popular book account of the expedition entitled (in Australia) *Shackled: How a Scientific Expedition to Antarctica became a Fight for Survival* (2017). Turney's title—a pun that simultaneously references the *Shokalskiy*'s imprisonment in ice and the famous 'heroic era' besetting of Shackleton's *Endurance*—encapsulates the generic boundary he walks in the account, between a contemporary ecothriller ('How bad is it?' '*No way out*' reads the blurb on the front cover) and a polar adventure narrative in the style of Shackleton and Mawson. B09B first appears in Turney's narrative as the 'monster' whose production of fast ice and subsequent impact on ocean circulation, the icesheet and sea level were the impetus for the expedition (14). The iceberg is thus primed to take on a dual role in the hybrid narrative, as villain of the thriller and quest object for the adventure story. But *Shackled* is not about the iceberg but the ship: its entrapment and rescue. As he makes explicit in his book, Turney is aware of the commercial need to generate public interest around a private expedition venture. Human drama sells stories; B09B plays a bit part.

Its fame over, B09B currently sits off Wilkes Land, continuing its slow phase change. Although there may be more chapters to its story, it will eventually drop off the radar (literally) of the National Ice Centre, ceasing to be a Very Large iceberg;[12] and then ceasing to be an iceberg at all, transforming from autonomous object to indistinguishable fluid as it melts into the Southern Ocean.[13]

Conclusion

In this article, we have provided the beginnings of a biography of B09B. For a brief period of its multi-decade lifetime, this berg became a key actor in a drama involving many of the most controversial issues in the Antarctic region today. B09B rammed itself into the one part of the enormous Australian Antarctic Territory that has the most meaning as a historical and political symbol, at the exact point when that meaning was at its most highly charged; its timing was, you

[12] The term is the National Ice Centre's—see Taylor.

[13] Bergs calved from floating ice shelves do not raise sea-water levels significantly, as they were already displacing their mass before calving, although they do decrease salinity and density of the ocean, which has a small impact on sea level.

might say, uncanny. Putting tourist voyages into disarray, endangering centenary celebrations, creating the conditions for a controversial besetting and global rescue effort, and providing fodder for climate change scientists and sceptics alike, B09B made a mockery of the popular idea of Antarctica as a pure wilderness sitting apart from human history.

Within the environmental humanities, we have become particularly alert to problems of scale: we look to long histories and deep time; we tell stories of stone that span geological epochs. Ice's layers can reveal a tangled human and nonhuman history stretching back hundreds of thousands of years. Icebergs, like ice cores, can be thought of as cross-sections of this history; when they split, melt, crack, and overturn, they are, in a sense, fragmenting and liquefying this history; turning it on its head. Yet icebergs are not merely archives of deep time; they have lifetimes of their own, spanning periods not too dissimilar (in the case of large tabular bergs) to those of humans. Tracing their histories evokes an uncanny familiarity amid the strangeness of their incomprehensible bulk.

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