4. CLIMATES OF SIGHT: MISTAKEN VISIBILITIES, MIRAGES AND 'SEEING BEYOND' IN ANTARCTICA

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Immoral mapping

In 1842, the Antarctic explorer Charles Wilkes stood trial by court-martial on the charge of "immoral mapping". Wilkes faced an indictment of "Scandalous Conduct Tending to the Destruction of Good Morals" for his designation of land on January 19th, 1840, where there was none to be found. His claim was to have "discovered a vast Antarctic continent...". Charge VI, Specification I, read as follows: "In this, that the said Lieutenant Charles Wilkes in his report, number 63, to the Secretary of the Navy, dated March 11th, 1840, did utter a deliberate and wilful falsehood, in the following words, to wit: "on the morning of the 19th of January, we saw land to the Southward and Eastward with many indicators of being in its vicinity, such as penguins, seal and the discolouration of the water; but the impenetrable barrier of ice prevented our nearing our approach to it".[1] The proceedings of the Court-Marshall record that Wilkes had made a false entry as to the date on which he sighted "Antarctic land".[2] On September 7th, 1842, the verdict was given: dropped as not proven. Although not charged, Wilkes' reputation and authority as a purveyor of geographical truths was ruined. Later defenders of Wilkes' reputation claimed that his' "immoral mapping" could be explained by recourse to the particular atmospheric phenomena of the Antarctic region. In the strange Antarctic light, Wilkes had seen a superior mirage.

Before Wilkes' 'designation of land', several officers had also reported seeing land, but Wilkes initially dismissed these sightings as cloud shapes, or atmospheric fictions. While he was cautious about the atmospheric conditions that were known to conjure land in the Polar Regions, Wilkes was in the mindset of discovery, eager to transform the doubtful space of ice into a geography marked with his name. Tremendous financial, professional and personal pressure rested on these hitherto speculative geographies of the southern regions. As Daniel Hendenson argues, "His concentration on becoming the Antarctic Coloumbus, on finding the land Captain Cook had failed to sight, made him jumpy … His diary entries during these weeks of searching fog and dodging icebergs indicate that he was a victim of what modern authorities term polar depression".[3] In his diary Wilkes confessed his anxiety: "The opportunity of seeing around us, though it is daylight, is of rare occurrence, and looking for land here is to be likened to a man groping in a dark room--with the liability of breaking his neck in search of what is not to be found except covered with snow".[4]

On January 15th, in clear weather, Wilkes sketched an image in his personal journal of Antarctic land. The drawing was of the *Vinncennes* held in the ice, with mountainous landscape in the background. In the following days Wilkes' account vacillated between fact and fiction, his own doubt and ambition literally making and unmaking the sight of land. He records that "we ourselves anticipated no such discovery; the indications of it were received with doubt and hesitation; I myself did not venture to record in my private journal the certainty of land until after three days, after those best acquainted with its appearance in these high latitudes were assured of the fact; and finally to remove all possibility of doubt, and to prove that there was no deception in this case". As the eye took up the sight of land, and

pencil was put to paper, an image was created of a mountainous continent **[Fig. 4.1]**. As ambition and speculation gripped Wilkes, the image was where he realised his resolution. He was aware of the polar conditions of condensed vapour that looked like land that could beset polar explorers, yet the "appearance" of land was so real, so alluring that it presented itself as a geographical fact. Only in the site of the fixed image could Wilkes counter the ambiguities of geographical knowledge realised through uncertain sights.

Wilkes said, "All doubt in relation to the reality of our discovery gradually wore away, and towards the close of the cruise of the *Vinncennes* along the icy barrier, the mountains of the Antarctic Continent became familiar and of daily appearance, in so much that the logbook, which is guardedly silent as to the time and date of its being observed, now speaks throughout of land!"[5] By January 16th, 1840, the three ships of the expedition, *Vinncennes, Peacock and Porpoise* together record a sight of land. Wilkes was later to write in his *Narrative of the Exploring Expedition*, "On this date appearances believed at the time to be land were visible from all three vessels, and the comparison of the three observations, when taken into connection with the more positive proofs of existence afterwards obtained, has left no doubt that the appearance was not deceptive".[6] On January 19th, Wilkes confirmed that what he saw was the *Terra Firma* of an Antarctic continent, possession was taken of *Wilkes Land*,[7] and a message was sent to the Secretary of the Navy to that effect.[8]

While the Antarctic landscape seemed to suggest the discovery of slowness in the 'lateness' of its discovery,[9] time was literally of an essence in the sighting and making of landfall. The French explorer Jules Dumont d'Urville had claimed discovery of the continent on the afternoon of January 18th. d'Urville claimed that he had made his discovery in advance

of Wilkes by a few hours, but it afterwards developed that he had forgotten the International Dateline, and had failed to add a day to his log when he crossed the 180th meridian. This made him later in the sighting of land by about ten hours. Upon his return home Wilkes was called on to answer that he falsified the records as to the date and facticity of his sighting. Jules Verne, champion of d'Urville, wrote in his account of the latter's voyage "…not until he reached Sydney did Wilkes, hearing that d'Urville had discovered land on the 19th January, pretend to have seen it on the same day".[10] Attentive to the tenets of science fiction, Verne wrote an angry letter to Wilkes accusing him of conspiring to write fictional accounts. Doubting Wilkes' claim, after being sent the details of the voyage, Captain Sir James Clark Ross set out in 1841 in the *Erebus* and *Terror* to Antarctic waters. Ross sailed over the assigned position of Wilkes Land and thus concluded that no such land existed. Ross' 1847 *Narrative*[11] gives an account of the claims for and against Wilkes Land, claiming that Wilkes failed to follow standard cartographic practices and proclaimed land based on 'assumption of land' rather than on facticity. Ross comments that only what was "really and truly seen" should be included and that which had the "appearance of land" be marked so. He called Wilkes' discovery a 'pseudo-continent'.[12] As it would turn out, Ross was right, and although he did not fully understand the climatic conditions that had created Wilkes' simulation, he named the discovery correctly. As I shall discuss in the course of this chapter, the *climatic distancing device* of landscape that Wilkes observed would highlight an unexpected condition of visual knowledges in the Polar Regions. As a landscape that is profoundly counter-intuitive for human inhabitation, Antarctica is an extraordinary site from which to consider another kind of visibility that incorporates the

fictions and breakdown within those systems of vision and visuality.[13] **[Fig. 4.2]**

Seeing beyond: superior mirages and the geographical 'gift'

While the Antarctic optic caused a number of cartographic failures, the mirage most strongly demonstrated the latent possibility of a 'geographical gift' to the normative European history and practice of vision. Mirages are not optical illusions, they are real phenomena of atmospheric optics caused by rays bending in layers with steep thermal gradients. Whereas light normally travels in a straight line, when light rays pass through air layers of different temperatures, they curve towards the cooler air. The rays then enter the eye at a lower angle than the angle at which the image lies, thus the image is displaced, and so a mirage is sighted. **[Fig. 4.3]** In this case the mirage is not, as commonly perceived, an image in the wrong place. Atmospheric refraction displaces almost everything we see from its geometric position – that is, rays of light are usually curved, and thus everything appears slightly displaced above its geometric or "true" position. This displacement is known as terrestrial refraction. The image of the mirage is genuine, it is just an exaggerated displacement from a usual terrestrial location. A superior mirage means that there is an inverted image above an erect one, hence the image is lifted above the horizon. As Hobbs claimed, "less appreciated has been a fairly common phenomenon of looming--superior or polar mirage--which for considerable intervals of time brings land into view when it is very far below the horizon".[14] The curvature of the earth normally restricts the distance that can be seen depending on the height of an object, where height is proportionate to distance perceived. A small iceberg would normally be seen at about 12 miles away from a ship, while a large mountain range could be seen from

up to 70 miles. With the mirage, distant lands transcend this limited horizon of sight.

What the mirage amounts to is not just a tarnished reputation,[15] but the curious instance that lands are seen that are actually out of sight and below the horizon. So whereas the mirage holds false promise for the making of maps, as a tool of vision it offers a remarkable glimpse of what the earth's curvature has made invisible. Wilkes accurately mapped more than 1500 miles of the Antarctic, with frequent landfalls that were made by estimating the distances from the ship, as the ice barrier prevented the physical confirmation of reaching land **[Fig. 4.4]**. The mirage allowed Wilkes to *see* a continent, to discover it in a position that he would have ordinarily been unable to see because of the earth's curvature. But that visibility came at a price, as things were really seen but incorrectly charted. What Wilkes sighted was a *phantom displacement* of the landscape; an image emitted of the real through climatic constellations, a form of *snow*[16] in the transmission of geographical information. This phantom displacement of the Antarctic would come to haunt many explorers that came after Wilkes, and the strange Antarctic light continues to confound many a visualising technology to the present day.[17] It is only in recognition of the historical frequency of the polar mirage that *Wilkes Land* remains a salient feature on Antarctic maps today.[18]

The geographical 'gift' of the mirage was to make the invisible visible to the eye of the explorer, to show lands where there were none to be found, which was also to show lands that existed but were displaced and unavailable to view. Had the early explorers had a better understanding of these optical peculiarities, the mirage would have provided an invaluable visualisation for sighting far distant land, land that lay physically beyond their horizons. Commenting on the phenomena of optical illusions, the

artist Rachel Weiss suggests, “In Antarctica, these illusions are of such scale and frequency that they deserve to share the appellation ‘real’ with non-illusory events”.[19] The gift of these atmospheric sightlines may force us to consider what the artist Robert Smithson calls the “climates of sight” that emerge from landscapes.

Climates of sight

The story of Wilkes' “immoral mapping” through the mirage serves as a starting point to discuss the themes of this chapter, namely: the uncertain and shifting relation of the visual to establishing geographical ‘truths’; a consideration of how vision is geographically constituted; and the exposition of a hallucinatory and a normative vision. In short, I argue that Antarctica presents a *visual disturbance* in the production of geographic knowledges. Both Wilkes and his detractors attempted to come to grips with the territory of this flickering continent through discussions of fact and fiction, appearance and actuality, doubt and reality, the visible and the non-visible. These claims and counter-claims of the facticity and fiction of geographical knowledge made by Wilkes, Ross and others set up some powerful binaries in the negotiation of knowledge production and trust in Enlightenment scientific practice, as noted by the work of Dorrinda Outram (1999) and Sverker Sorlin (2005). Yet it is arguably the very indecipherability of the Antarctic landscape that directs us to rethink the role of the visual in Antarctic geographical knowledges and beyond. Antarctica suggests a topology of doubt that informs the formation of visual landscapes. This doubt emerges as much from the actual climate of a forbidding continent as from “a climatology of the brain and eyes…”.[20] In other words, Antarctica presents “climates of sight” that open into

expanded visual geographies and expanded ways of considering a terrain that shifts and moves, like the weather.[21]

Given western languages dependence on visual metaphors it is hardly surprising that geography should have its own specific visual practices for establishing empirical truths.[22] The role of the visual in geography has had considerable attention, particularly the role of visualising technologies in the geographical practices of exploration and empire. Geography has been described as a visual mode of thinking and practice, a "science of observation"[23] that is productive of a "geographical gaze".[24] In this work on visual geographies, analysis has tended to concentrate on the power of the visual in the formation of subjects and places. In that desire to make vision accountable there has been scarce consideration of types of vision that do not realise their geographical object: vision that is contingent, conjuring, and often results in failure.[25] While existing studies have done important work in explaining the power relations within the visual medium, less attention has been given to the role of vision as a destabilising and radically disorienting sense within a specific locale,[26] where landscape *unsettles* such a fixed geographic gaze. This inverse of normative visual regimes allows for a generative expansion of the field of vision,[27] as I argue through the instance of the superior mirage, that is both geographically contingent and regionally specific. In the following discussion I will concentrate on the specific ways in which vision, in the Polar regions, can be considered as a disturbance that offers glimpses of ecstasy and hallucination, as well as blindness and doubt.

As early as 1884 the Polar regions were referred to as distinct 'zones,' which J. E. Nourse argued were more resistant to instrumentation than the moon.[28] In the Antarctic zone, the mirage suggests a distinct `climate of sight' that is an essential attribute of this landscape. These climates of sight

are not only particular to geographical regions, they are also the conditions through which distinct and situated landscapes emerge. These landscape conditions include ice-blink, exposure, superior mirages, mock suns, phantom displacements, blindings, refractions, auroras and strange weather.[29] Antarctica demonstrates with acute clarity, that geographical truth realized through vision is an instance of realisation amongst a whole number of appearances. The compression of distances and strange weather contribute to the difficulties of discerning *form* in the Antarctic landscape, as the contemporary polar photographer Jean de Pomereu demonstrates **[Fig. 4.5]**. Antarctica is a continent of liquid boundaries – of flows, storms and imperceptible material that converts between liquid, airborne and solid states. "Flying seas" was the name given to the blizzards blowing from the South Pole. Mirages became a common aspect of Antarctic travel; the collapsing of depth often challenged perceptions of distance, as the proximity to the magnetic south foiled compasses. Thus, the Antarctic engaged early explorers in excessive problems of navigation and perception, disorienting their bodies, minds, and instruments. This "locational problem"[30] as Paul Simpson-Housley terms it, disrupted orders of visual knowledges. For example, in April 1915, the explorer Ernest Shackleton reported that he saw a sunset, which appeared to set, reappear, and then set again some time later. The sun repeated this for some time. Vision was no guarantor of apprehension. The ice was, not surprisingly then, the main cartographic challenge of the Antarctic. Ice storms, ice-blink, ice flows, ice barriers, ice tongues and white-out all hindered Antarctica's 'discovery.' The site-specific nature of this sight both highlights the contingency of vision in the making of landscape and points to another space of consideration in the *climatology of vision* and thought.

This climate of vision is both temporally and spatially contingent and thus offers a way of thinking about how we see place as continuously emergent. Indeed, the climates of sight were such that Antarctica appeared and disappeared, and since no one could get near enough to the continent to physically apprehend it because of the icy barrier, vision (however troubling) was the only means of asserting its geography.[31] The difficulty of measuring distance was exacerbated by the fact that explorers could not get to the continental coast, nor actually ascertain where it actually was. This was due in no small part to the sea-ice that formed a continuous covering over the continent to the various edges where it disintegrated. As William Herbert Hobbs states,

> In many cases of snow-covered lands there is not enough of individual character in the coastal features to permit of identification from different ship positions, and in such cases the newly discovered lands have of necessity been placed upon the maps on the basis of their direction and estimated distance, and as a consequences they are often as much as forty or fifty geographical miles too near when this is due to the atmospheric clarity alone, but as much as two hundred geographical miles when due to high superior mirage.[32]

Such was the nature of the Antarctic weather that the usually accurate practice of sightings was turned into speculation. While the empirical gaze of exploration was necessarily dispassionate, it is not hard too imagine how desire for a new continent might cloud such vision. Remembering Wilkes' comments on how seeing was likened to a blind man groping in the darkness we can begin to see the problems created by shadowy ice fields.

Certain physical difficulties also become apparent when a gaze is strained to realise a continent. As Martin Jay comments, "we cannot really freeze the movement of the eye for very long without incurring intolerable strain".[33] Eyes have to be in almost constant motion, even when we sleep. When we fix a gaze our eyes start to cloud and we begin not to see. Staring and finding nothing is a form of optical paralysis. The human eye is limited by focal range. The over reaching of the eye across vast distances in the Antarctic, because of the clarity of vision offered by unpolluted air and the un-bifurcated horizon, resulted in strain to the organ of sight. Contemporaneously, in the Antarctic this strain is called 'bug eye', which refers to a stretching of the focal length beyond its normative range. In the Antarctic, vision can literally not realise the *longue durée* of gaze. This hyperopia creates what is called blindsight, where one sees but does not understand seeing.

The gaze belongs more certainly to a technological capacity than to the eye, extending and consolidating what the eye desires but cannot realise for itself.[34] Thus the technics of the sketch (in Wilkes case) is not only a consolidation of his speculative seeing, but a space of resolution for an impossible project of realisation (the icy barrier prevents landfall and the confirmation of touch). The sketch becomes a compensatory mechanism for realising desire and foregoing doubt. Here, in the practice of drawing, a material landscape is made that counters the shifting uncertainty of the materiality of Wilkes' sights.[35] However, the 'landscape' was barely detectable from the icy debris that was a feature of sky, sea and the far distant ice mountains. The icy barrier, along with the difficulties in detecting a coast or even recognising an outline or landmark, Urban Wråkberg[36] argues, made the traditional process of making colonial claims truly problematic. **[Fig. 4.6]** The prime goal was "to fulfil the first and

foremost task of geographical research in the 19th Century: the separation of land from sea by sighting, sketching and mapping the coast of the unknown. However, the very activity of defining an outline or coastal edge was obscured by the visibility of a clearly identifiable land/sea interface".[37] If, as Primo Levi suggests, "to comprehend is the same as forming an image",[38] the act of seeing is inseparable from the act of perception. The need to recognise form means seeing is about seeing 'something', and this is how in exploration the visual form was so necessary to the construction of a geographical object. Like Wilkes' sketch, the image gave form to a formless place – it is, what Roland Barthes calls "an arrest of interpretation".[39]

The sketch that Wilkes makes is borne out of the blindness of a hallucinogenic field of vision and this quality is never fully left behind. The entanglement of these registers of blindness and seeing and what is real and what is imaginary alert us to the perpetual condition of vision in geographical possession. 'Discovery' enacts this contestation between the desire for possessing the unknown and limited forms of knowing. In Antarctica, knowing and making knowledge become further complicated by the presentation and withdrawal of those truths (in the form of a mirage of a new continent). It is in the negotiation between a desire for a clear visual encounter (to sight land) and the blindness of icy indeterminacy that the configurations of both are revealed. *Antarctica offers a double blinding* – the blinding of whiteout and blinding of a rarefied atmosphere that condensed distance. This forgotten link between vision and blindness is discovery's burden. As the boundaries of vision and non-vision breakdown, other forms of knowledge emerge that exist in excess of vision, including speculation, narrative, and ways of *seeing beyond* vision.

Speculative geographies

The problem of mapping the Antarctic continues to this day. Antarctica needs to be remapped more often than any other continent. On most maps the ice shelves are shown as permanent features, but how does one ascertain where the ice stops and starts when the Antarctic continent expands to double its continental size annually? The line of a map is always subject to a certain abstractness and redundancy, but in the case of the Antarctic this abstract quality is taken to the limits of the form, suggesting an exhausted cartographic logic. The extent and dynamism of glaciation in the Antarctic are unlike anywhere else on earth. Here, the usual modes of arresting landscape are woefully inadequate. As Admiral Richard Byrd remarked in 1935, "it's a curious… fact that long after most astronomers [knew] there were no canals on Mars, no geographer… could have told you whether Antarctica… was one continent or two". Not until the event of sensitive gravity meters, and later with seismic and radio echo soundings in the 1960s, did much of Antarctica's basic geographical character become understood.

Antarctica's dynamic ice processes are always working to erode the possibilities of a seemingly stable form of accounting for geographical space. Wråkberg argues, "The slow pace of Antarctic exploration as a whole also indicated that there might be more to this than just adjusting field practices developed elsewhere to extreme polar conditions. The grand geographic project of the 19th century Western culture seemed to have struck difficulties of a more profound nature in its encounter with the vast ice mass in the far south".[40] What this Antarctic excess suggests is that there are entropic forces at work within the making of all maps. The hallucinatory capacity of landscape phenomena, such as the mirage, works to re-inscribe the very notions of geographical facticity within these

processes of accounting for spaces. As vision sagged under the weight of snow, this formlessness demanded a new order of knowing and observation, and a new order of knower that could contend with how the landscape was realised through *speculation*.[41]

For Wilkes, speculative vision is a troubling thing. His visions have the 'appearance' of land that cannot be taken as an assumption of fact. In this zone of troubling atmospheric phenomena, vision is a space of speculation. Yet it is also the place where mastery is realised through graphical inscription (map, image, sighting). Representational practice is the site of negotiation in cartography, narrative and image, and thus is a critical *site of enunciation* in the geography of place. Wilkes had been meticulous in controlling the knowledge production of narratives and objects from his expedition. In order to restrict counter-narratives, he reduced the number of scientists included in the expedition from twenty-five to seven, and he prevented them from examining their specimens below deck. All specimens had to be placed in his care. And all members of the expedition were to keep journals as part of the performance of their duties, and to submit them to Wilkes for editorial approval at the end of the voyage. To counter the charges of "immoral mapping" levied against him, Wilkes published his *Narrative* as an official account of the expedition. In the realm of the visual, the graphical practice of rendering an image of the continent may have brought physic resolution to Wilkes' speculative sighting, but once the location given by that sighting had been sailed over by Ross, doubt was cast on the production of all the geographical knowledge Wilkes had attempted to secure, and on Wilkes as a curator of that knowledge.[42] The forms of production that his voyage had given visibility to were already circulating freely, and Wilkes' speculative vision had given rise to a number of other speculative geographies. The pictorial

plates of Wilkes' *Narrative* formed the basis of Herman Melville's *Moby Dick*[43] (1851). Melville's novel as well as Jeremiah N. Reynolds's *Mocha Dick* (1839),[44] Symmes' speculative *Hollow Earth Theory,*[45] James Fenimore Cooper's *Sea Lions* (1849), and Edgar Allen Poe's *Narrative of Arthur Gordon Pym* (1837), enlarged upon and made fictitious use of the facts Wilkes had so scrupulously attempted to control.

In this chapter I have been interested in the optical effects that challenge a geographical 'art of describing' that is realised through vision. But, this graphical art of describing is as much about how sight is understood, managed, and narrated as a form of perception as it is about optics as such. As we have seen with Wilkes, the realisation of *Wilkes Land* was as embedded in the speculative nature of discovery as much as it is in the speculative nature of sight. In this sense, the realisation of vision as a form of geographical enquiry was apprehended through two representational practices, namely cartography and narration.[46] Through a discussion of the origins of the US Exploring Expedition and the speculative geographies it spurned, particularly in the example of Poe's *Narrative of Arthur Gordon Pym,* I argue the very *interagency* of facticity and fiction in geographies of exploration. My intention is to show how the textual and imaginative space of geographical narration is as much a site of speculation as encounters with the Antarctic landscape itself. And that narrative is no less susceptible to the climatology of language than is vision.

The origins of Wilkes' *US Exploring Expedition* stemmed from John Symmes petition for a US-led expedition to substantiate his *Hollow Earth* theory.[47] Symmes' theory proposed that the earth was a semi-hollow sphere of concentric spheres that had their entrance at the poles. In his theory of this internal world, Symmes argued that the strange atmospheric

refractions, luminous auroras and the variation of compasses indicated gases escaping from the 'hole at the pole'. Although Symmes' concentric concept had received extensive scientific criticism, no one had yet gone far enough to the Poles to dispel his speculative theory empirically.[48] To support a bid for funds for a southern expedition, the Secretary of the Navy employed Jeremiah N. Reynolds to collect information from the public as to what areas of the globe were most in need of exploration.[49] Reynolds - although a keen supporter of Symmes' theory (and had lectured on the possibility of openings at the Pole) - made more subdued pleas for an expedition to the southern continent in favour of commerce (particularly of sealing and whaling). He collected information from captains' journals and logs from a number of coastal locations (including Nantucket) on what geographical territories had most validity for commercial exploration. Reynolds published his "Address on the Subject of the Exploring Expedition, First Proposal" in *Harper's New Monthly Magazine* in April 1836. Even though the focus of this inquiry was on the commercial potential of the southern regions, the speculative quality of these geographies had a much stronger pull.

Indeed, one of Reynolds lectures was attended by Henry Allan, the brother of Edgar Allan Poe. Poe was in turn inspired to write his only novel, *The Narrative of Arthur Gordon Pym of Nantucket.* It was in the context of Wilkes' departure for Antarctica in 1837/38 that Poe published his novel in serial form in the *Southern Literary Messenger*. The US public was focused on Antarctic travel and the speculative geographies of 'discovery' of hollow earth that had initiated the expedition.[50] *The Narrative* presents the story of the explorer Pym, who ventured down to the southern polar latitudes. The account first appeared "under the garb of fiction". A year later Poe republished the work as a novel. When he did so,

he added a preface claiming that the work was factual. Poe's fictional explorer, Pym, whose name was derived directly from Symmes, was on a similar quest: to find a hole at the pole and make fiction fact. Poe's narrative account formed a fictitious log, filling the days of his imaginary expedition to Antarctica with ever more speculative adventures - while simultaneously Wilkes recorded in his logs the days of a real expedition, which were subsequently held up as fiction. Poe's narrative ends with the hero's vessel plunging into a polar abyss, having fallen into Symmes' 'hole at the pole'. Wilkes' narrative ends with his court martial and charge of "immoral mapping".

In these narratives one text of speculative geography was literally engulfed by another.In Poe's account the fantastical nature of the Polar Regions was used to conveyed its own form of facticity, as the Antarctic was rendered a place *stranger than fiction*. Here it is useful to consider the writer J. G. Ballard's repeated assertion that it is the environment that makes possible the unfolding logic of events.[51] Poe invites the reader to leap into the unknown with the explorer, and offers exciting new knowledge as the reward. It is a reward, however, that is swiftly withdrawn as Poe's literary structure circles from the end back to beginning, to demonstrate the circular logic of these self-reinforcing narratives. The structure is used to challenge the novel's fictions, and the conceit is rendered not as deceit but as a conceptual loophole in exploration's narrative formations. Poe's work performs what Smithson calls a "mirror symmetry" to Wilkes' *Narrative*. His concerns are the black holes in perception, those rents in our language that highlight how our perception is orientated – visually and literally. Poe's novel is concerned with inversions; the pole becomes a hole and vortex, instead of an axis in which to plant a flag or claim a continent; real discoveries and scientific practices are

incorporated into fictional accounts of imaginary expeditions; the validity of truths is questioned in order to make the account seem more factual. The novel begins with a 'fictional' Pym, writing a 'real' preface to the novel. He 'says' that because he distrusts his ability to write an account that will be accepted as the truth, he has allowed "Mr. Poe" to print part of his story "under the garb of fiction". Pym says, "I proceed in utter hopelessness of obtaining credence for all that I shall tell, yet confidently trusting in time and progressing science to verify some of the most important and most improbable of my statements". Poe utilizes accepted notions of science to verify the truth of the tale. Underpinned by sound research into shipping, geography, methods and expeditionary accounts, Poe attempts to authenticate the tale through the precision of factual details to create an aura of science. This highlights how geographical description is the *space of that negotiation* between speculation and fact.

In the attempt to render fiction factual, Wilkes inadvertently instigated a set of knowledges to better describe an imaginary territory of a truer fiction. Is this ultimately the art of fiction: to explore the mirages of geographical knowledge? In Poe's literary fiction, and the geographical fiction of Wilkes, we witness the two ends of knowledge production – as geographical description attempts to close the distance between narrative and voyage and secure landscape in the traces (Wilkes), art practice opens it up (Poe, Melville). Poe's text served as a kind of anti-map to Wilkes' exploration narrative. His fiction takes the speculation in the text of geographical meaning to its truest narration, as the facts of Wilkes' geography are productive of a false narration. As the artist Robert Smithson comments, "True fiction eradicates the false reality".[52] Fiction implies the existence of fragile structures (or holes) around which our knowledge forms (as a fleeting testimony). Accepting the slippage of knowledge (its

mirages), then calls into question the shadow of knowledge (its phantom displacement). Wilkes' geographical practices are his access to the unknown; Poe's practices of unknowing are his access to knowledge. It is the mirage that brings to light, with a false light the unexpected condition of this knowledge. We can see this 'unknowing' (or fiction) as a form of geographic speculation in relation to the unknown or what later critics where to call Poe's *Narrative* the first example of: Science Fiction (SF).

SF was the most exaggerated form of scientific narrative that arose in direct relation to the forms of scientific narrative that were already imbued with such speculative fictions. In exploration, narrative was a form of aesthetic instrumentation that crafted the density of objects, more than it was a medium for the translation of things. And so, it had a transitional quality that acted as an aestheticising lens onto the unknown and peculiar. Arthur E. Shipley's narrative of the *ABYSMAL FAUNA OF THE ANTARCTIC REGION* from the *1901 Antarctic Manual* demonstrates exactly this conjuring force of such narratives:

> No light from the sun penetrates the deep sea. There is no day and night. In connection with this absence of light from without certain animals, notably the Fishes, Crustacea, some Echinoderms, and Worms, have developed phosphorescent organs, but the part they play in illuminating the depths can hardly be greater than that of the policemen's bull's-eye in lighting up London during a November fog. Corresponding with this darkness, lit up by an occasional phosphorescent flash, the animals of the depths have either lost, or are losing, their visual organs, or have developed enormous eyes… If we could see the bottom of the deep sea, we should see, except in

> those few places where a current is active…Certain curious features occur over and over again in the deep-sea creatures for which there seems no obvious reason.[53]

The author goes on to describe how the creatures who have retained eyes, "have, so to speak, followed an evolutionary path in the opposite direction, and instead of evolving immense eyes, have suppressed eyes altogether, their place has been taken by a great development of tactile organs".[54] The concern with *seeing* that permeates the account is paralleled with the attempt to shed the light of knowledge onto such abysmal depths. To make visible is to make knowledge. And descriptive narrative is one of the fundamental tools in this process of visibility/perception. In a world structured into the explainable, the peculiar, and the new, the "abysmal fauna" introduced doubt only in so much as it questioned the order of things, but not necessarily the ordering strategies.

Narrative is clearly part of the scientific apparatus – the ability to tell a good yarn, to excite, stimulate (and embellish, where appropriate) was part of the expectation and construction of scientific accounts. As Michael Bravo and Sverker Sörlin comment, narratives "are not only a means of describing material practices … they are practices in their own right'.[55] These practices of narration and cartography provide a body of spatial writing that was both poetic and seemingly objectified in the measuring and observing of geographical formations. This dual process of the *sensual* and *serious* descriptive registers of observation through narration and cartography gave geography its shape as a convincing form of knowledge production. The map provides the *site* on which the narrative can take place. That Antarctica is often the site of inversions in understanding is not just a convenient literary trope of a far-away place, but also is based on the

excessive cartographic and locational problems that the landscape posed to normative structures of both geographical thought and practice, which were the result of a radical difference to the temperate climes where these structures originated. Antarctica both maintained and subverted geographical knowledge: the fictions are perceptually true (such as the mirage) and the geographical facts possessed a fantastical quality that derived from the very strangeness of the geographical forms. It is not difficult to see how the scientific accounts of the Antarctic furnished and gave plausibility to other secondary narratives, such as the imaginative SF worlds of Poe, and later Jules Verne,[56] and contemporaneously Kim Stanley Robinson.[57]

Frederic Jameson sees SF as a crucial intervention in social thought, a cognitive space of critical imagining that offers a "representational mediation on radical difference".[58] The utopian potential of SF is its ability as a narrative form to imagine an outside to scientific knowledge, while maintaining a dialectic relation to it, thus making us aware of our logical imprisonments. Poe's science fiction, like the mirage, can be seen as a break in the circuit of dependent facts and practices that makes these relations visible. In Poe's terms the outside can be seen as a stretching of the logic of scientific knowledge to suggest discovery is about the generation of questions not answers. For Melville, the whale is the manifestation of unknowing that challenges human perception to understand limits and the cost of exceeding those limits through the drive of obsessive discovery. As James Kneale and Rob Kitchin argue, SF can be seen more as "a gap: between science and fiction", an "interest in the fragile fabrication of mimesis" that offers "a privileged site for critical thought".[59]

Stranger than fiction, utopic vision

Throughout this chapter I have argued that Antarctica constitutes a privileged site for critical thinking about vision and its relationship to the establishment of geographical truths. Wilkes did not know how to map the mirage because his predisposition to novel forms of unknowing precluded that possibility. This did not make the mirage any less 'real,' but it did make the possibility of its understanding that much more distant. The mirage, while seemingly illusory, emerges from real conditions and real contradictions within vision. It is illusionary only to the extent that it did not fit within the way Wilkes delineated and mapped territory, but it did open up new climates of sight that eventually expanded the visual knowledges of the Antarctic region. The mirage is indexically linked to our perception of the real, to a geographical form from which we establish normalising strategies. This dialectic suggests that these phantom displacements are not opposed to perception, but an extended quality of the state of perception, of an altered perception specific to place. This suggests that investigating the conditions of unknowing holds potential for geographical thought. As Antarctica provided an awkward terminus to a trajectory of nineteenth-century geographical knowledge, it also suggested most clearly 'openings' to other kinds of geographical knowledges that acknowledge the dialogical relationship of vision to blindness and unknowing. Ultimately, in this challenge to consider a porous and shifting vision resides a potential ethics of cultural interaction with landscape. This ethics is borne out of an acknowledgement of limits and difference. Much like the recurrent 'zone' in SF, Antarctica offers a space of otherness and possible insight, where normative responses often become more of an encumbrance than an access to the unknown.

While the Antarctic visual disturbance had a dramatic effect on the nature and practices of Antarctic fieldwork it did little to disrupt the tenets of geographical knowledge other than to present an anomaly, like the creatures from the Shipley's Abysmal Zone. In practice, Antarctic was too far away from Europe, and peripheral in scientific terms in the nineteenth and twentieth centuries to disrupt the order of things. Yet, in twenty-first century contemporary representations of Antarctic place us most urgently into the gap between science and fiction, once so creatively occupied by Poe and Melville. If we transpose the metaphor of 'seeing beyond sight' to the speculative geographies of climate change predictions, which have been elicited from Antarctic ice cores, we see the generative gifts that contemporary Antarctic offers our perception. As ice core data forms the basis for climate prediction models that generate models of the future, we can see this prediction as a form of SF that has to contend with speculation and doubt to bring critical insight to future climate uncertainties. New conditions of instability in the ice challenge our ability to conceive of abrupt and shifting landscapes, and so it is through the critical lens of speculation that we proceed. In the Antarctic climatology of sight we are offered the gift of observing landscape change on a scale that requires a new paradigm of understanding, about both Antarctic and global visions. Once again we must take up the challenge of developing visual geographies that see 'beyond sight'; to be able to see that what appears as failure (the advent of climate change) is perhaps instead an opening into new, and even more accountable, "climate of sight".

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[1] A. Upshur, Navy Department, Eleven Charges and additional charges and thirty five specifications, July 20, 1842.

[2] Proceedings of a general Court-Marshall, *Charge 6. Scandalous Conduct…*, Washington Navy Department 1842, United States Courts: Court Marshall Wilkes,

Charges and Specification of Charges preferred by the Secretary of the Navy 1842, upon information of Asst. Surgeon Charles F. B. Guillon of United States Navy / A. P. Upshur. The charge was one of six including cruelty pertaining to the wounding of natives at Clermont Tonnerre; venna Lebre; and the killing of natives of Malola

[3] D. Hendenson, *Hidden Coasts*, New York, 1953, 97-98.

[4] Hendenson, *Hidden Coasts* (note 3), 97-98.

[5] Hendenson, *Hidden Coasts* (note 3), 99-100.

[6] Hendenson, *Hidden Coasts* (note 3), 101.

[7] The expedition began 18th August 1838 and reached Antarctic seas in 1839.

[8] The events of the first United States Exploring Expeditions are contained in five volumes, C. Wilkes, *Narrative of the U. S. Exploring Expeditions 1838-42,* published by the US government with an additional 16 volumes of scientific results.

[9] Antarctica was the last of the continents to be discovered.

[10] Hendenson, *Hidden Coasts* (note 3), 102.

[11] J. Ross, A Voyage of Discovery and Research in the Antarctic regions during the years 1839-43, Vol 1, London, 1847. 218-19.

[12] Hendenson, *Hidden Coasts* (note 3), 128.

[13] This thesis is elaborated on in K. Yusoff, Arresting vision: a geographic theory of Antarctic light, PhD Geography, Royal Holloway, University of London (2005).

[14] W. Hobbs in Hendenson, *Hidden Coasts* (note 3), 137.

[15] The most famous mirage is probably Crocker Land in the Arctic. In June 1906, Arctic explorer, Robert E Peary claimed to have discovered a new land and named it "Crocker Land" after one of his financiers. Seven years later, the Museum of Natural History outfitted an expedition to explorer Crocker Land. On April 13th, 1906, the expedition reached Peary's original point of sighting and set off in the direction he had speculatively mapped. Once the weather had cleared, the expedition spotted the land Peary had described. The Inuit travelling with the expedition were unimpressed and said that the vision was 'poo-jok', or in other words, 'mist'. The group travelled one more day and took their position using a sextant and the sun. Shocked, they realise they were 150 miles onto the polar ice cap. According to Peary's calculations they should have been 30 miles inland on Crocker Land at that point. It was then they realised that they and Peary had been fooled by a mirage. They started to return, with the mirage still persisting at their back, a mocking reminder of their mistaken visibilities. One of the leaders of the expedition, Donald MacMillian writes: "our almost constant travelling companion, the mirage. We were convinced that we were in pursuit of a will-o'-the-wisp, ever receding, ever changing, ever beckoning." On the return trip, "Throughout the day the mirage of the sea ice, resembling in every particular an immense land, seemed to be mocking us. It seemed so near and so easily attainable if we would only turn back." They stand on "the very spot" where Peary "saw what resembled land. The day was exceptionally clear, not a trace of a cloud or mist; if land could ever be seen, it could be now. Yes, there it was! It could even be seen without a glass extending from southwest true to north-northeast. Our powerful glasses, however, brought out more clearly the dark background in contrast with the white, the whole resembling hills, valleys, and snow-capped peaks to such a degree that, had we not been out there for one hundred and fifty miles, we would have staked our lives upon it. Our judgment then as now is that this was a mirage or loom of the sea ice." D. B. MacMillan, In search of a new land, *Harper's Magazine* (1915), 925, 927, 928. See also: T. Young, Annotated

bibliography of mirages, green flashes, atmospheric refraction. http://mintaka.sdsu.edu/GF/bibliog/bibliog.html (02/02/2007); W. H. Hobbs, Visibility and the Discovery of Polar Lands, *Geografiska Annaler,* Vol. 15, (1933), 217-224. Anonymous, The Crocker Land Expedition, *Bulletin of the American Geographical Society*, Vol. 44, No. 3 (1912), 189-193; Anonymous, The Crocker Land Expedition under the auspices of the American Museum of Natural History and the American Geographical Society, *Science* 35, (1912), 404–408.; Anonymous, The Crocker Land Expedition, *Scientific American* 111, 489 (1914).; W. H. Hobbs, *PEARY*, New York, 1937.; E. A. Mills, *Romance of Geology*, New York, 1926, 21-22.

[16] In communication technologies, snow or noise is a description of the interference in the communication of information.

[17] See K. Yusoff, Visualizing Antarctica as a place in time: from the geological sublime to 'real time', *Space and Culture* 8 (2005) 381-98.

[18] Hobbs' arguments contributed to a more wide-ranging discussion between American and British geographers in the 1920s and 1930s as to the legitimacy of the naming of the western area of Wilkes Land. See W. Hobbs, The discoveries of Antarctica within the American sector, as revealed by maps and documents, *Transactions of the American Philosophical Society* 31 (1939) 1-71.

[19] R. Weiss, Antarctica and concepts of order: two installations, *Leonardo* 17 (1984) 95.

[20] R. Smithson, A sedimentation of the mind: Earth projects, in: J. Flam (Ed), *Robert Smithson: The Collected Writings,* Berkeley, 1966, 108.

[21] Renzo Dubbini comments, "The atmosphere's effect on visibility became a matter of great importance because meteorological conditions to a great extent determined the accuracy of the description of objects and the perception of relative positions". R. Dubbini, *Geography of the Gaze: Urban and Rural Vision in early Modern Europe,* Chicago, 2002, 177.

[22] See M. Jay, *Downcast Eyes*, Los Angeles, 1993, 1-2.

[23] G. Rose, Geography as a science of observation: the landscape, the gaze and masculinity in: F. Driver and G. Rose (Eds), *Nature and Science: Essays in the History of Geographical Knowledge*, Historical Geography Research Series, 1992, 28.

[24] See F. Driver, *Geography, Empire and Visualisation: Making Representation,* Department of Geography, Royal Holloway Research Papers General Series, 1995.

[25] N. Bryson, *Vision and Painting: The Logic of the Gaze*, New Haven, 1983.; M. Jay, *Downcast Eyes: The Denigration of Vision in Twentieth-century French Thought*, Berkeley and Los Angeles, California, 1993.; T. Brennan and M. Jay, *Vision in Context: Historical and Contemporary Perspectives on Sight*, New York & London, 1996.; J. Crary, *Suspensions of Perception: Attention, Spectacle and Modern Culture*, Cambridge, Massachusetts, 1999.; are cognisant of emerging work in the field of visual culture/art theory that highlight the complexity and frequent failure of visual perception, as well as the distinct conditions of its emergence. Alongside this work that has been a consideration of a vision of affect, most notably in James Elkins work (See J. Elkins, *On pictures and the words that fail them*, Cambridge, 1998. and J. Elkins, *Pictures & tears : a history of people who have cried in front of paintings*, New York and London, 2001) in which he describes seeing as searching, desirous, and irrational, something "like hunting and like dreaming" and entangled "in the passions – jealousy, violence, possessiveness; and it is soaked in affect – in pleasure and displeasure, and pain" (J. Elkins, *The Object Stares Back: On the Nature of Seeing,* London, 1996, 11) Arguably, what geography could bring to this discussion of the visual is a consideration

of how vision as emergent out of located practices and specific environmental conditions.

[26] For an excellent exposition of the geographies of mountains see, M. H. Nicolson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite,* Cornell, 1959.

[27] See N. Bryson, The gaze in the expanded field, in: H. Foster (Ed), *Vision and Visuality,* New York, 1988, 91.

[28] J. Nourse, *American Explorations in The Ice Zones*, London, 1884, 489. The spectroscope was actually able to bring the physical condition of the moon and other nearer planets closer that the use of optical instruments in the Antarctic could facilitate.

[29] H. H. Lamb, Topography and weather in the Antarctic, *The Geographical Journal* 111 (1948) 48-62.

[30] See chapter 4, 'Problems of Antarctic navigation and perception: the compass, longitude and mirages' in P. Simpson-Housley, *Antarctica: Exploration, Perception and Metaphor*, London, 1992, 38-50.

[31] While not the first to 'discover' Antarctica, Wilkes was the first explorer (apart from his contemporary rival d'Urville) to extensively explore a large stretch of coast, long enough to prove the continental character of the Antarctic. The 'continental character' of the Antarctic was difficult to discern because landfall was difficult to make. Stranded icebergs frozen into the inland ice, the off-shore ice, island ice and the ice shelves all presented the difficulty of ascertaining a continent, rather than a series of islands such as that which had been identified in the Arctic. Speculation as to Antarctica's continental character, and whether there were in fact 'two continents' connecting the permanent ice shelves of the Ross and Weddell sea as proposed by glaciologists such as Griffith Taylor in 1914, was not finally resolved until remote sensing began to reveal what lay under the ice.

[32] W. Hobbs, Conditions of exceptional visibility with high latitudes, particularly as a result of superior mirage, *Annals of the Association of American Geographers* 27 (1937) 233.

[33] See M. Jay, *Downcast Eyes* (note 24), 7.

[34] Norman Bryson's concept of a 'glance' in the *Logic of the Gaze* (1983) in contrast, describes a respectful and self-reflexive way of looking that keeps vision in motion, unfixable and tentative.

[35] Considering the relationship between sight and other senses, the sketch is a touch dependent activity that is led as much by the desire for a material object as by the desire of the eye. Here we might contend that images have just as much to do with practices of touching as practices of vision.

[36] U. Wråkberg, Delineating a continent of ice and snow, cartographic claims of knowledge and territory in Antarctica in the 19th and early 20th century, in: A. Elizinga, T. Nordin, D. Turner and U. Wråkberg (Eds), *Antarctic Challenges, Historical and Current Perspectives on Otto Nordenskjöld's Antarctic Expedition 1901-1903,* Göteborg, 2004, 123-43.

[37] Wråkberg, Delineating a continent (note 35), 130.

[38] P. Levi, *The Periodic Table*, Harmondsworth, 2000, 190.

[39] R. Barthes, *Camera Lucida*, London, 2000, 93.

[40] Wråkberg, *Delineating a Continent* (note 35), 123.

[41] In fact, Antarctica's first appearance on global maps was a kind of mirage, a hypothetical continent posited by the ancient Greek geographers to 'balance' the

northern hemisphere. It was called Antipodean (meaning other footed) or Antarctikus (opposite the bear). The theory of the Antarctic continent was based on supposition alone, not geographical exploration.

[42] Even the objects collected from the expedition were received as a doubtful accumulation. The original Act of Congress 1846 to establish the Smithsonian Institute stipulated that the Wilkes' collection was to become part of Smithsonian Institute, but Joseph Henry, the first secretary of the Smithsonian, was concerned that "filling a costly building with an indiscriminate collection of objects of curiosity" would dull the Institute's purpose of advancing knowledge. He rejected Wilkes objects and images as a disordered assemblage of suspect materials. After much debate, the specimens and objects that had lingered for nearly 20 years in the Patent Office, were included as founding objects in the National Museum of Natural History at the Smithsonian Institute in 1858.

[43] Note that Melville's first chapter of *Moby Dick* is called 'Loomings' and this sets up the thematic symmetry of the novel as Ishmael and Ahab struggle to contend with the mirages of their own characters in the formless whiteness of the whale. As matter is accounted for, and Ahab pursues the whale, it simultaneously cannot be accounted for, in that Ishmael cannot comprehend the boundaries of it. In this failure to grasp the whale's dimensions, a sense of geography is lost - and space is dissolved into whiteness and mass rendered devoid of navigation.

[44] See Appendix, the earliest sources, in: H. Melville, *Moby-Dick*, Harmondsworth, 1986, 991-1011.

[45] The theory of Hollow Earth was first proposed by Edmund Halley - of comet fame - in 1692.

[46] In G. Murray (Ed), *The Antarctic Manual: For the Use of the Expedition of 1901*, London, 1901, the two sections under the heading "Geography" are "Cartography" and "Narration".

[47] The theory of Hollow Earth was first proposed by Edmund Halley - of comet fame - in 1692.

[48] Symmes wrote and lectured tirelessly on Hollow Earth, even though he was considered an indifferent writer and poor speaker (he suffered from stage fright, which eventually killed him). Despite this, Hollow Earth captured the popular imagination as an inverted heaven on earth, and still has many followers today.

[49] D. Tyler, The Wilkes Expedition: The First United States Exploring Expedition (1838 - 1842), Philadelphia, 1968. 5.

[50] Poe actually reviewed Reynold's Address, on the subject of a surveying and exploring expedition to the Pacific Ocean and the South Seas, in the *Southern Literary Messenger* in January 1837 (in E. A. Poe, *The Narrative of Arthur Gordon Pym of Nantucket,* New York, 2002, 188).

[51] See particularly, J. G. Ballard, *Terminal Beach*, London, 2001; J. Ballard, *The Drowned World*, London, 2001.

[52] R. Smithson, *Slideworks*, Verona, Italy 1997, 80.

[53] A. Shipley, Zoology: on the abysmal fauna of the Antarctic region, in: Murray, *Antarctic Manua*l (note 45), 243-44.

[54] Shipley, Zoology (note 52), 245.

[55] M. Bravo and S. Sörlin, *Narrating the Arctic,* Canton, 2002, 24.

[56] Charles Baudelaire translated Poe's narrative into French, and it was read by Jules Verne. He combined his own interests in scientific discourse and exploration with Poe's

new forms of literary expression to write a sequel to *The Narrative of Arthur Gordon Pym* entitled, J. Verne, *An Antarctic Mystery; or, The Sphinx of the Ice Fields: A Sequel to Edgar Allan Poe's The Narrative of Arthur Gordon Pym,* Philadelphia, 1899

[57] See K. Robinson, *Antarctica*, London, 1997 and *Imagining Abrupt Climate Change: Terraforming Earth*, Amazon, 2007.

[58] See F. Jameson, *Archaeologies of the Future*, New York, 2005, xii.

[59] J. Kneale and R. Kitchin (Ed), *Lost in Space: Geographies of Science Fiction*, London, 2002, 3-4.