# HOW TO SEE A GLACIER IN A CLIMATE LANDSCAPE

## AMANDA BOETZKES

hat do we see when we look at a glacier? The phenomenon of glacier melt is upheld as a measure of global warming and its symptoms, including rising ocean levels, hurricanes, new patterns of animal migration and much more. Such associations often accompany the sight of a glacier. But is that all one sees? Glacier calving is an iconic image of global warming. Yet because climate change is accompanied by scepticism and denial, such images also carry the burden of a politically-charged framing. Images of melting glaciers are often used as scientific testimony while at the same time being dismissed as ideological. Thus, glacial melt is both a real phenomenon and a vision that is invested with the political anxieties of the popular imagination. The emergency of climate change its emergence into a cultural discourse and its political urgency - requires clarification. What deserves consideration, then, is the visual language of climate change at the axis of science, cultural knowledge and aesthetics. What grounds the representation of glaciers in a climate landscape?

## Glaciers at the Confluence of Scientific and Inuit Knowledge

Representations of global warming demonstrate how the value of scientific data has shifted from an objective knowledge to a matter of cultural perspective. Climate data is taken as only one author-



IL-05 Sólheimajökulll Glacier, Iceland, 2010, https://vimeo.com/6039933.

ity among many in the public sphere. In other words, the scientific understanding of the causes and effects of climate change is increasingly understood as an epistemological pursuit and, hence, held against other perspectives within the global imaginary. I would characterize the visualization of climate change, then, as a confluence of two forms of knowledge: scientific and indigenous. Each is underwritten with its own respective political and aesthetic imperatives. Consider the following two examples:

First, in the last two decades a host of images of climate change have emerged that could be described as representations of scientific data to the public. One example of this type is the landscapes produced by the Extreme Ice Survey (EIS), headed by photographer James Balog (Figure 1).

EIS presents itself as a "visual science" of glaciers that showcases their beauty and documents their melt. The survey does not take samples of the ice nor satellite images of ice cap retreat. Rather, its photographs are attentive to the structures, surfaces and the ethos of glaciers: they are portraits of endangered entities rather than core samples used by scientists. Yet, the photographic procedure is nevertheless geared toward capturing glacier melt with as much precision as possible. The survey team installed cameras at the edges of glacier walls in Greenland, Iceland, Antarctica, Canada, and the American Rocky Mountains and programmed them to capture photographs every hour during daylight hours for at least a year. The photographs could then be composited into time-lapse videos. EIS presumes that their study makes a number of contributions: it creates an archive of glacier melt, captures the retreating lines of glacier walls, and portrays the aesthetic character of each particular glacier. In a sense, the scientific endeavor is the pretense for an exegesis on the glacier as a beautiful but endangered landscape. Over the course of the time-lapse video, the glaciers liquefy

In order to see how these two types of knowledge and the corresponding image practices converge and at times conflict within the visual imaginary of climate change, it is important to establish that both arise from a colonial history of imagining the landscape as a process of mobilizing territory. Indeed, the history of landscape is crucial to understanding the political and aesthetic terrain of climate and its iconic images.

and collapse. The geological structures succumb to the pressures of atmosphere and warming waters.

As much as the EIS time-lapse videos aspire to an activist art-science, they nevertheless maintain a kinship with the 19<sup>th</sup> century landscape tradition. They frame glaciers within visual codes of uninhabited terra nullius that has been newly encroached upon by "humans." But the question is, which humans? The disappearing glacier is set up as the contamination of nature, a rhetorical structure that codes the landscape as a fetishized commodity. The presumably uninhabited landscape naturalizes the representational act as a communication between human and non-human nature. It therefore behoves us to consider how EIS naturalizes its presence as witness to the dying glacier, even as it presumes to produce and disseminate objective knowledge.

Second, authoritative knowledge characterizes the discourse of climate change through an indigenous (and frequently Inuit) perspective. Consider, for example, the work of Inuit artist Tim Pitsiulak. Pitsiulak hailed from Cape Dorset where the renowned Kinngait Co-Op has procured worldwide interest in Inuit drawing and printmaking. His scenes of Arctic life frequently include the presence of climate scientists. In Underwater Research Team, Pitsiulak draws a scene of researchers studying glacier ice. In the background a red icebreaker ship showcases a prominent Canadian maple leaf, signalling the governmental claim on this landscape (Figure In the middle ground two researchers, one in a red parka and another in a dry suit, have cut a hole in the ice and prepare for a dive. In the foreground, a diver is intently shining a light on a section of glacier below sea level. The glacier sheet melts into a pool that leads to a layer of blue fractured ice that juts out from the water line. Overhead, a chopper flies a crate back to the ship, presumably to add

to its load of ice samples. All of this is rendered in colored pencil, and situated at an outside observer's perspective, unacknowledged by the figures. The figures themselves are "costumed," playing the parts of anonymous government scientists. There is a sense of humorous irony insofar as they appear to bring insight to the signs of global warming, and yet in their myopia do not see that their presence interrupts the landscape: they cut, crack and penetrate the ice they are observing. The diver shines a light on the ice, focusing intently on it. The other figures look insistently downward into the water. By contrast, Pitsiulak observes the whole scene, an assemblage of scientific inquiry, the flexing of national territory and technological prowess. But his landscape also renders ambiguous the cause and effects of glacial melt. Does the presence of this assemblage perturb the climate landscape or alleviate it? This landscape is by no means remote or unoccupied; it is embedded in the conditions that make climate change a reality, and perceived through an Inuit lens.

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## The Climate Imaginary, or, The Arctic is Paris

Al Gore's documentary *An Inconvenient Truth* (2006) introduced a powerful visualization of glacier melt happening



Tim Pitsiulak, Underwater Research Team, courtesy Dorset Fine Arts

on a global scale. In the film, Gore shows graphic charts of the retreat of glaciers at sites such as Mount Kilimanjaro, Glacier Park's Grinnell Glacier, the Himalayas, the Alps and the Columbia Ice Shield of Alaska. Among these he also shows now infamous footage of a glacier calving: an immense piece of ice cracking off the ice wall and sinking into the North Pacific Ocean. The footage has since become synonymous with global warming and a shorthand for a host of associations including the threats to polar bear habitat, increased oil exploration and production in the Arctic, and the general spoiling of as-yet-wild places. The image of ice calving in the Arctic is a social hieroglyph, to use Marx's term. While it depicts an ecological reality, it also functions as code within a textual system.

The need to decipher what appears to be such a transparent image may seem counterintuitive. However, I would argue that it is precisely its seeming transparency that requires such skills of analysis. Moreover, it requires both scientific and cultural decoding—interpretive analysis from a cross-section of disciplines which must be geared toward understanding its efficacy and, just as importantly, producing its possible meanings. The stakes of

deciphering such an image are high given two important factors: first, the image is deployed as a means of convincing the public of the reality of global warming against the backdrop of an entrenched denial of its imminence on the part of governments and corporations. Second, and perhaps more crucially, it is a representation that discloses its own cultural framing. In other words, it is a climate landscape that produces the discourse of climate.

W.J.T. Mitchell argues that landscape does not merely signify or symbolize power relations; it is an instrument of cultural power. Landscape is a medium of exchange that produces and silences discourses; it appropriates imagery and focuses attention. It creates the conditions by which to see the land. More strongly, landscape produces social and subjective identities. In its specific organization of sense-effects—attention, information, and bodily relationships—the climate landscape is an agent that acts upon knowl-

While it is true that Arctic ice has entered into the public imagination because glaciers are prime objects of the scientific study and measure of global warming, it is nevertheless also embedded within a long history tied to the emergence of industrialization, fossil fuel harvesting, military positioning, indigenous oppression, and colonial settlement. Indeed, the Arctic was an ideal site of imperial dreamwork and is still mythologized as an as yet uncharted frontier, though it is populated by indigenous communities.

edge, political action and cultural life on a global scale. In this regard, Gore's glacier calving footage is an image of global warming and a framing of that phenomenon, a climate landscape and an agent that landscapes climate.

Mitchell argues that landscape is a medium found in all cultures, yet it is also a particular historical formation that he describes as the "dreamwork" of European imperialism.3 By this he means that the landscape tradition that emerged in the 17th century and reached its peak in the 19th century disclosed both the utopian fantasies of imperial prospect and the unresolved ambivalence and unsuppressed resistance to it. Certainly, these dynamics are at stake in the visualization of Arctic ice as it succumbs to warming. While it is true that Arctic ice has entered into the public imagination because glaciers are prime objects of the scientific study and measure of global warming, it is nevertheless also embedded within a long history tied to the emergence of industrialization, fossil fuel harvesting, military positioning, indigenous oppression, and colonial settlement. Indeed, the Arctic was an ideal site of imperial dreamwork and is still mythologized as an as yet uncharted frontier, though it is populated by indigenous communities.

The image of glacier calving summarizes a contested scientific, political and aesthetic terrain. Indeed, it operates by threading one domain of inquiry through the others. This disciplinary coordination is the underpinning of master narratives such as those that are currently underway in the concept of the Anthropocene. But if it is also a social hieroglyph that conceals the basis of its value (in other words, if landscape is a commodity as Marx defines it), then what does it conceal? As much as the climate landscape is a landscape of the Anthropocene, it also demands a questioning of its hidden terrain. What operations are currently producing the meaning



Mel Chin, The Arctic is Paris, http://thearcticis.org/. Courtesy of the artist.

of ice? The efficacy of the glacier calving image rests on the belief that the ice caps have been untouched environments for millennia, and that these have been newly perturbed by global warming. Yet, while it is certainly true that Arctic ice is rendered as a climate landscape specifically, such a landscape could also be seen as resisting its reduction to a universal trope of the human occupation of nature.

Jason Moore argues for a reconsideration of the Anthropocene as the Capitalocene, in order to give specificity to the material conditions that produce this geological era. Thus, he argues, capitalism is the primary economic frame that organizes nature into a world-ecology of power relations.4 Moreover, as Zoe Todd convincingly posits, the discourse of the Anthropocene appropriates or obscures indigenous experience of the environmental condition. She therefore calls for critical practices that decolonize and indigenize our interpretations of this geological era.5 These coordinations of the global perspective, I argue, are integral to understanding climate landscapes and their potential. The visualization of glaciers, albeit in the service of studying the effects of global warming, may nevertheless be tied to the capitalist and colonialist procedures of knowing and representing environments in relation to techniques of resource extraction, energy use, and the assessment of its "discontents." Techniques of imaging glaciers, even for scientific data, have a history in colonial mechanisms of imagining. Inasmuch as the image of glacier calving wants to show the intervention of an anthropogenic climate on a seemingly timeless natural landscape, it also reckons with the visual history of global capitalism and European colonialism. The image is therefore bi-directional: it brings global public attention to the Arctic and embeds the Arctic in a concealed history. The climate landscape is one that aspires to change the world perspective. Yet, in so doing it risks reiterating the imperial intentions to control the land and, correspondingly, repeat deeply rooted and ineffectual patterns of obscuring the causes of environmental problems precisely by representing them as dissociated from their systemic underpinnings.

The landscaping of Arctic ice is therefore a practice that can be shaped by a global perspective of the historical and emergent forces that are in the process of determining the course of climate change. American conceptual artist Mel Chin devised a performance entitled *The Arctic is Paris* for the 2015 Climate Change Conference in Paris. He brought two Inuit hunters, one of whom was Jens Danielsen, a delegate from the Inuit Circumpolar Council, and photographed them in their elk and seal furs carrying harpoons in



Mel Chin, The Arctic is Paris. http://thearcticis.org/. Courtesy of the artist.

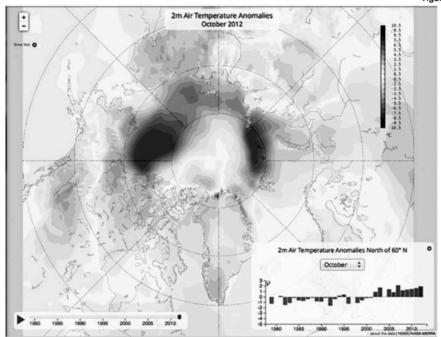
front of national monuments (Figure 3). Chin also filmed them with a dog-team of seven French poodles attached to a sled that would take them through the boulevards (Figure 4). Chin was one of over a hundred artists and architects invited to contribute to a campaign of public engagement with the conference. His project's uncanny images illustrated the impact of climate change in the Arctic: not only is that specific environment transforming, but its environmental condition affects every global culture and environment. As Chin points out, The Arctic is Paris is just one iteration of a larger project that aims to unify a global field: "The Arctic is Des Moines, the Arctic is Cairo, the Arctic is Beijing, the Arctic is Your Hometown."6 Moreover, at the site where the future of climate was being determined in the political arena, Chin submitted an indigenized vision of climate change. He therefore conjoined a perspective that is both sobering and surreal to the emerging discourse of climate change. In this way, Chin shows that the social hieroglyph of the Arctic landscape is dynamic and shifting in relation to the global discourse.

## Satellite Maps: NASA and Diane Burko

Practices of representing climate landscapes point to the convergence of scientific and cultural forms of knowledge in the global imaginary. It should be understood that ice itself is not a natural backdrop for these discourses but rather the very materialization of the history and futurity of climate. Climate science, of which the study of ice is a cornerstone, contends with the widespread governmental, corporate and public denial of global warming (even though 195 nations except the U.S. have signed on to the Paris Climate Agreement). NASA has produced satellite imaging technologies of glacier melt which the National Snow and Ice

Data Center has made available online as mobile images that show the changes in sea ice, water vapor, near-surface air temperature and other variables (Figure 5). It sets satellite images of glaciers in motion so that data that is otherwise rendered on a chart can be seen as active proof of climate changes.

The use of the time-lapse image, as in the case of James Balog's EIS study, is geared toward making truth claims about global warming. NASA's satellite images chart dramatic changes in a relatively limited span beginning from 1979 and ending in 2015. They are designed to focus on a sharp accelerating trend. Taken from an aerial perspective, the images give no sign of human habitation, only indications of climate effects. They chart atmospheric warming as a given condition, with no rhetorical indication of its cause, yet assume that humans have brought about these changes. NASA uses the images to posit the authority of their knowledge of the Arctic and global climate science; the efficacy of the images lies in their presentation of an objective truth to be read against the backdrop of climate change denial. However, the scientific claims do not necessarily correspond to or even undermine the political rationale for climate change denial. Statements of denial, while irrational, often take the form of evading moral or political accountability through an outright refusal of the scientific claims to the cause and effect of increasing carbon emissions that lead to global warming.<sup>7</sup> The political discourse has paralyzed the authority of climate scientists by denouncing its fundamental claims to knowledge in order to cloud the demand for public responsibility for climate change. The scientific procedure of producing an unassailable act that humans have caused global warming has been met by an outright political refusal to accept scientific reasoning. Scientists have therefore had an unprecedented political

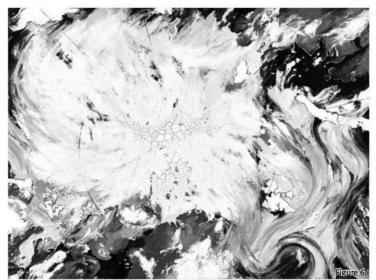


The map and bar graph show how air temperatures in the Arctic compare to averages from 1979 to 2015. On the map, areas with higher than average temperatures for the selected month and year are indicated in dark greys and black (positive anomalies), and areas with lower than average temperatures are shown in light greys and white (negative anomalies), http://nsidc.org/soac/air-temperatures-more-information.

need for a materialist history that would corroborate the correlation between the fossil fuel industry and global warming. Yet they struggle with a political discourse that would attempt to naturalize global warming.

Herein lies a conflict for scientists in their own representations of climate data. It is easy to confuse the interpretation of an image of climate change as either an image of natural disaster or an image of human-generated disaster. The visual language of landscape tends to naturalize the image itself. As Mitchell points out, a landscape is neither a natural scene nor a representation of a natural scene, but "a natural representation of a natural scene, a trace or icon of nature in nature itself, as if nature were imprinting and encoding its essential structures on our perceptual apparatus."8 Mitchell suggests further that the scientific topographical illustration is precisely the site at which this naturalization occurs. With its craving for pure objectivity, science espouses a visual language of transparency and suppression of aesthetic signs of "style." It is thus possible to read NASA's satellite images not merely as data but as scientific landscapes that stem from a specific epistemological position that engages the visual language of objectivity.

The Anthropocene (or the attenuated Capitalocene) is crucial here as an intermediary. Implicitly positioned as a geological perspective, it is also an area of critical inquiry that claims causal chains that have led to global warming dating back to the Industrial Revolution and involving systemic coordination of technology, colonial expansion, and global finance. The designation of the plastiglomerate as a marker of the Anthropocene is significant in this regard.9 The plastiglomerate, a fusion of rock, plastics, and fossilized ocean matter, stands for the interleaving of the fossil fuel regime and the geological stratosphere, and symbolizes the scientific and political



Diane Burko, Arctic Melting, July 2016 (After NASA), Oil and Mixed Media on Canvas, 60"x 84", 2016, http://www.dianeburko.com/.

claims of the Anthropocene as a positive signification of anthropogenic impact. By contrast, glacier melt is a signifier ex nihilo. The plastiglomerate appears where the glacier disappears. Glacier ice rests at the crossroads of geological, historical and atmospheric conditioning. To suggest that glacier melt signifies as absence, however, is also to indicate its failed political efficacy – glacier melt fails to compel a change in the political discourse. While it invokes affective responses — sadness, awe, introspection—at the same time, it does not invoke any viewer in particular. Rather, it presents a given condition. In this way, it naturalizes its own intention within the act of representation.

It is in this gap between "facts," epistemological position and accountability that artistic responses to scientific information appear. American artist Diane Burko paints and photographs glaciers in forms that incorporate the visual language of NASA's satellite imaging, while making important alterations to these images. Burko has photographed glaciers in Greenland, Svalbard, Iceland, Alaska, the Alps and Argentina, sometimes traveling with scientist expeditions to access remote sites and produce aerial perspectives. Yet

her photographs also feature the sensible immediacy of glaciers: their ridges, transparencies and opacities, their overlap with intensely colored skies and seas. Her glaciers loom like shadows in the fog or sparkle against the bright sun. The viewer witnesses the movement of the Ilulissat Icefjord as it compresses and folds under the pressure of warming and fast-moving sea currents, ultimately shedding its cracked shield into the water. Burko's paintings repitch this same phenomenon in oils

(Figure 6). Working with NASA satellite images as a template, Burko paints the aerial perspectives of glacier melt along with the cues to its continual reduction (red and blue lines that chart its decreasing area). Yet she captures a visceral sense of the glacier topography with heaped white paint that cracks and fissures as the glaciers do. Her work thus supplements the scientific perspective produced by NASA with the hand of an artist who witnesses the landscape phenomenologically, via touch, color and visual textures.

Burko's glacier series are art-science hybrids; they redistribute the orientation of the scientific assemblage, including its pathways into the landscape by air and ship, its visual equipment, and its data. Burko's climate landscape is framed, composed and sensed with a presumed viewer. The image convenes a landscape and its viewer coextensively. Her redeployment of science invokes a viewer to witness the landscape differently and poses the question, who is witnessing and why?

Inasmuch as the Anthropocene is underwritten by a call to action on the basis of a geological perspective of human impact over a specific historical period and its organization of nature through power-relations, so do climate landscapes propose relations with nature against the backdrop of the power regimes since the Industrial Revolution. Thus, when one looks at Burko's paintings of glaciers cracking from the center with whorls of brown paint surrounding and encroaching from the periphery, one witnesses the landscape in its remoteness and rarity, and at the same time in its imbrication in the climate produced by petro-colonialism. These characteristics implicate the viewer and are corroborated in the visual experience.

## **Inuit Perception and Polar Tilt**

I am arguing that glacier melt does not merely demand to be seen but rather demands to be witnessed, and am calling for seeing climate change in a mode of critical self-reflection. This mode is demanded of the documentary film Inuit Knowledge and Climate Change by Ian Mauro and Zacharias Kanuk. It describes how Inuit hunters and elders in communities across the Arctic reported perceiving the same phenomenon: that over the course of their lifetimes it appears that the world has tilted on its axis. Accustomed to watching the sky for weather patterns amid diurnal seasonal changes, the Inuit have noted longer periods of daylight, even as much as a full hour longer, in the short days of winter. As one hunter from Resolute Bay, Ludy Pudluk, explains, the sun is "higher on the horizon."10 And while the sun rises from the same location it always did during the calendar year, it appears to set at a different location on the horizon than it did a generation ago. Another hunter, Jaipitty Palluq from Igloolik, describes that the sun seems to be higher and hits more directly since the tilt. 11 Hunters are especially conscious of the daylight hours and the quality of light because of the narrow margins of opportunity to hunt and fish in the winter. So while it is possible to measure global warming through ice core analysis and sea temperature changes, the fundamental changes of orientation for the Inuit are taking place in the sky and atmosphere, the site at which they "read" and perceive the landscape.

In a lecture in 2011, Mauro explained that the recurrent perception of earth tilt among the Inuit may be explained as the Novaya Zemlya effect.12 The archipelago of Novaya Zemlya is located in the Russian Arctic. In the late 16th century, an expedition of Dutch explorers first observed this optic mirage: it appeared that the sun was rising on the horizon two weeks before it was due to emerge from the polar night (between November and January). Scientists attribute the mirage to a refraction of the sun's light in a climatic thermocline, a layer of atmosphere in which there has been a sharp temperature gradient.<sup>13</sup> This "inversion layer" (where cold air is trapped under warm air) effects the refraction of the sun's rays against the curvature of the earth, projecting a light image for hundreds of kilometers.

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However, while the Novaya Zemlya effect is a possible hypothesis for the changing appearance of the sun as a result of atmospheric transformations brought about by climate change, it does not necessarily explain the specific descriptions of the Inuit. Mauro suggests that the interviews with the Inuit are the first documented observations of the optic phenomenon of polar tilt, specifically. When he consulted with climate scientists they corroborated the observation (it is still currently being theorized). Since the release of the documentary, geophysicist Jianlin Chen and her team have published their hypothesis that the geographic (as opposed to magnetic) North Pole has indeed objectively shifted and is drifting eastward. From a geophysical perspective, both poles tend to wobble on the earth's axis and also drift in the oceans. Between 1982 and 2005, the pole drifted southeast toward Labrador, but in 2005 it suddenly moved sharply to the east. Chen has noted this dramatic tilt and drift since 2005, and attributes it to the accelerated melt of the Greenland Ice Sheet.14

Such a melding of science, indigenous testimony, and the reframing of glaciers in art offers a more complicated perspective

on climate landscape. This perspective is informed by the understanding that the earth is an agent whose movements reveal the impact of the industrial colonial apparatus and are a determining condition of the Inuit perception of the environment. Such a perspective makes it clear that the Anthropocene can and should include indigenous assessments of climate change if it is to give a more complete account of the human impact on the planetary condition. I therefore return to the question, what do we see when we look at a glacier? A glacier in the age of the Anthropocene is a quite different object of perception than it was in the imperial landscape tradition. Glaciers cannot be reduced to an object of scientific study, even when such a study aims to preserve an archive of the Arctic at the historical juncture at which glaciers are becoming extinct. To embrace Inuit knowledge and perspective as authoritative, even in the production of scientific knowledge, is to underscore the fundamental value of the lived experience of the condition of the Arctic to the broader global condition, and to imagine an alternative landscape for the future. In other words, the Anthropocene is a call to change the historical lens of the climate landscape.

#### Inuit Envisioning: Annie Pootoogook

I have been arguing that to see glaciers in a climate landscape is a demand on both perception and representation. It is to envision and visualize in the midst of a historical condition. To conclude, I want to resituate the dilemmas of perspective at stake in representing the climate landscape through the concept of *envisioning* raised by the work of Inuit artist Annie Pootoogook. Like Tim Pitsiulak's, Pootoogook's work is celebrated for its scenes of everyday life in Cape Dorset. Her images range from the devastating legacies of colonial oppression and government negligence to



Annie Pootoogook, My Grandmother—Pitseolak, Drawing, 2002, courtesy of Dorset Fine Art.

the joy and exuberance of community life. Her landscapes are integrated into a lived reality, and while they are not images in non-human geological time, they are no less visions of the Anthropocene. Her drawings attend to the environment and its material conditions in its presentness rather than its future pastness. They effect an imperative to witness it at this pivotal geological, historic, and cultural juncture.

Pootoogook is known for her visual exposition of this realist perspective. She comes from a lineage of artists - including her mother, Napachie Pootoogook, and her grandmother, Pitseolak Ashoona that creates images in accordance with the Inuit concept of "sulijuk," meaning "it is true."15 This mandate to draw and paint what is real is distinct in its epistemological situation; its realism differs from Balog's photographic practice with its implicit claims to an objective perspective. She imagines the climate landscape in and through an operation of envisioning. To recall Mitchell's argument, Pootoogook's drawings are the landscape and the frame.

In My Grandmother – Pitseolak, Drawing (2002), Pootoogook draws a picture of her grandmother, Pitseolak Ashoona, drawing a picture of the landscape outside her window (Figure 7). Her grandmother is sitting in bed, her drawing table on her lap. A window looking out to a stark snowy

mountain is set adjacent to the bed. The scene is mirrored in Ashoona's drawing, but the drawn picture animates the mountain with birds, people, and a tent. Pootoogook emphasizes the immediacy of the domestic scene, including a calendar on the wall opened to the month of September with a picture that echoes the drawing and the outdoor landscape. A clock on the wall shows the time of day down to the second: 3:32 pm. The details of the room spring forward with the same even attention: a mug, a packet of cigarettes, a box of Tenderflake, a cane. Pootoogook's climate landscape is set with vivid immediacy, but it also enfolds another space of aesthetic re-envisioning. The drawing is a space of reflection and reinscription; it is both the space of landscaping and reflection on the act of landscaping. In this way, Pootoogook opens the way to an indigenized perspective of the Anthropocene and its discontents. Her dreamwork, a work that she depicts being carried out by her grandmother, is nested within her realism.

The representational practices of climate change demand self-reflection from within a position of cultural and political entanglement. From this space, glaciers are not environmental objects of naturalized scientific study, but rather an integrated part of a lived condition. They jut out into real space and then recede back into the imagination, alternating between a perspective in the present and a perspective of geological time. So what do we see when we see a glacier? We see that realism itself is navigating the terrain of science, politics and aesthetics. We see the dreamwork of imperialism, its informatization by science, its sensibilization in art, and the counter-dreamwork of indigenizing the Anthropocene. Such procedures set the terms that define climate more broadly and bring its landscapes into a world perspective. The real question to consider then is, how might we see through such co-implications?



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#### Notes

- 1. W.J.T. Mitchell, "Introduction," in Landscape and Power 2<sup>nd</sup> Edition, ed. W.J.T. Mitchell, (Chicago: University of Chicago Press, 2002), 2.
  - 2. Ibid., 1.
  - 3. Ibid., 10.
- 4. Jason Moore, "Introduction," in *Anthropocene, or Capitalocene*? ed. Jason Moore (Oakland: PM Press, 2016), 10.
- 5. Zoe Todd, "Indigenizing the Anthropocene," in *Art in the Anthropocene: Encounters Among Politics, Aesthetics, Environments and Epistemologies*, eds. Heather Davis and Etienne Turpin (Ann Arbor: Open Humanities Press, 2015), 243.
- Mel Chin, "Mission Statement," The Arctic Is, accessed November 1, 2017, http://thearcticis.org/.
- 7. Physicist Spencer Weart gives a full account of the history of climate change denial. See Spencer Weart, *The Discovery of Global Warming* (Cambridge: Harvard University Press, 2008).
  - 8. Mitchell, 15.
- 9. Patricia Corcoran, Charles Moore and Kelly Jazvac, "An Anthropogenic Marker Horizon in the Future Rock Record," *Geological Society of America Today* 24, no. 6 (June 2014), accessed November 1, 2017, http://www.geosociety.org/gsatoday/archive/24/6/article/i1052-5173-24-6-4.htm.
- 10. Ludy Pudluk, interview by Zacharias Kunuk and Ian Mauro, *Inuit Knowledge and Climate Change*, directed by Zacharias Kunuk and Ian Mauro (Igloolik Isuma Productions, 2010).
  - 11. Jaipitty Pauluq, interviewed in Inuit Knowledge.
- 12. Ian Mauro, "Inuit Knowledge and Climate Change" (video of lecture, the Smithsonian, 2011), accessed October 28, 2017, https://www.youtube.com/watch?v=kOha0liL0w4&t=2917s.
- 13. W.H. Lehn and B.A. German, "Novaya Zemlya Effect. Analysis of an Observation," Applied Optics 20, no. 12 (1981): 2043–2047.
- 14. Richard A. Lovett, "Polar Wander Linked to Climate Change," Nature, May, 2014, accessed October 29, 2017, http://www.nature.com/news/polar-wander-linked-to-climate-change-1.12994.
- 15. J. Lynn Fraser, "Interior Spaces, Northern Places: Nunuvut Artist Annie Pootoogook's Artwork is Observational and Narrative," Canadian Medical Association Journal 175, no. 9 (2006): 1100.