

## Seeing Change: A Filmmaker's Approach to Climate Change

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FADE IN FROM WHITE:

EXT. BARROW, ALASKA—MIDNIGHT SUN EVENING—SPRING

The sun burns low but bright in the clear blue sky. Exotic birds call through the air. A filmmaker's eye peers into the viewfinder of a video camera.

Through the viewfinder we see an apparent paradise of brilliant white sand layered with turquoise water. The view expands wider and wider. Layers of sand and water intermingle and repeat toward the horizon. A stream of turquoise water. A strip of white sand. Azure water. White sand. Jade water. White sand. The layered landscape is broad, flat, and seemingly infinite.

A filmmaker's gloved hand adjusts the focus on the camera, revealing an EXTREME CLOSE UP of the sand. Coarse like rock salt, the crystalline grains glisten in the sun, casting long blue shadows against one another.

FILMMAKER

Para'Ice Paradise . . .

A puff of warm air leaves her mouth as she speaks, fogging up her eyepiece. The filmmaker, a thirty-something from the arid New Mexican desert, she wears three layers of clothes including a down coat and pants. She removes the camera from

the tripod and places the camera in a large zip-lock bag before putting it back in its case.

Loading the equipment onto an orange sled, she tightens the harness over her shoulders and drags the video equipment to a new location. Her insulated rubber boots crunch alternately through icy snow and melt-ponds of the Arctic Ocean sea ice. In the distance, a snowmachine buzzes by.

AERIAL SHOT:

PULL BACK to reveal the filmmaker as a speck of black on a field of white. Crisscrossed with snowmachine tracks, the land-fast sea ice appears to be an extension of the snow-covered land until it turns into floating icebergs at the ocean's lead.

TIME-LAPSE of the landscape. As the sun continues to dip toward the horizon, the snow and melt-ponds turn a golden yellow. The ponds freeze into thin ice as the sun disappears. Twilight turns into sunrise within moments. The landscape shifts from golden to blue hues as the sun rises again, melting the arctic sea ice even more than before.

WHITE OUT:

I am attempting to see climate change not from a data-driven model but from a literal, visual vantage point with a video camera. Can we see the environment changing before our eyes? Can we understand these signs of change with our empirical senses? Throughout this cinematic research, I became aware that though I may not personally understand the impact of today's environmental conditions on the scope of history, others do.

In 2007 I began to accompany a research team and group of instructors in an international sea ice field course in Barrow, Alaska. At the time, the role of my video work was supplemental to a textbook anticipated to grow out of the academic field course (Eicken et al. 2009). The intended audience for the book consisted of scientists, students, and professionals interested in sea ice. The book would provide a comprehensive interdisciplinary resource to help guide research on this increasingly important topic of sea ice and its role in the environment. With a small group of University of Alaska film students in tow, I headed off to Barrow to document the scientific research methods of sea ice scientists.

Being the woman with the video camera puts me in a unique position where I am both the authority of the image and a passive spectator all at once. I am ultimately responsible for discovering what is necessary, visually and aurally, to tell a story that I may initially know little about. I arrive at a site armed only with the texts and images created by others. I trust and rely on my guides to share with me their vast knowledge and insight, and my hope is that I can convey this abstract knowledge into a visual form. What I see and hear can then become the (video) guide for others who may never personally witness what it is I am focusing on.

I am the intermediary, the translator who is simultaneously studying the language even as I translate it. *Albedo*? The proportion of the incident light or radiation that is reflected by a surface (translation: “that’s glaringly bright! Or not”). *Electromagnetic Probe*? An instrument used for analyzing the conductive properties of sea ice in boreholes (translation: “Sea ice can conduct electricity”). *Alappaa*? Iñupiaq: “(it) is cold” (translation: understatement). Realizing that the visual world can never truly be translated the way a text may be, we are left with the visual excerpt (MacDougall 1998) taking one world in context and isolating it on the screen for the viewer to re-re-interpret.

With the assistance of a student researcher, I approached the subject of climate change by examining the film and photographic archives of sea ice and comparing those archival visual records with what we saw before us. Our intimate familiarity with the archives allowed us to be highly comparative when filming in the field. Such photographic comparisons have become commonplace in the documentation of climate change. Vivid examples are demonstrated in photographs of retreating glaciers as compiled by the Repeat Photography of Glaciers Project sponsored by the National Snow and Ice Data Center/World Data Center for Glaciology in Boulder, Colorado.

In thinking of our video footage as a part of a future historical archive, we have made all of our footage part of the public domain. Permissions were granted from all individuals filmed, allowing us to donate the footage to the Alaska and Polar Regions Archives at the University of Alaska Fairbanks. Understanding that the video document could itself be reviewed and open to reinterpretation in the future (potentially for the 2057–58 International Polar Year) prompted due diligence in the field for understanding and representing the processes of sea ice research accurately.

An applied research method in itself, filmmaking is inherently interdisciplinary in its approach. Film is rooted in and informed by the visual and performing arts. It is a research tool and language employed by the social sciences of anthropology, sociology, and psychology. Journalism and media studies embrace the power of cinema to convey ideas of the day. Science and technology catalyzed cinema and their advances continue to shift the vision of filmmakers. Film is an artistic science *and*

a scientific art; a multitude of social, cultural, technological, and creative choices abound with every shot and sequence. Cinematic “subjects”—indigenous culture-bearers, scientists, or actors—are approached as collaborators in the mission of idea transmission.

For me, it is not enough to record the world as it plays out before the camera. I want to see the world in a new way, as illuminated by my subjects. Essentially, I attempt to see the world through their eyes, the camera being the first conduit for transmission of ideas that are otherwise invisible.

#### EXT. OCEAN'S LEAD—AFTERNOON

The filmmaker and Joe Leavitt stand on the sea ice, next to the open Arctic Ocean. An Iñupiaq whaling captain with deep local traditional knowledge, Joe Leavitt leans on his snowmachine and watches the floating ice pass by.

The ocean is a-tumble with layers of ice, some stationary, some adrift, each caught in separate current streams parallel to the shore. From the filmmaker's POV we look through the video camera's viewfinder to see Joe.

#### JOE LEAVITT

This ice is so deteriorated that  
it's constantly breaking off pieces  
over here, because of the high  
winds. And some of the ice out  
there is

(Beat)

a little heavier ice. That's why  
it's not bein' blown with the wind.  
The current is actually holdin'  
some of that ice.

Joe continues to speak to the camera, gesturing toward the ice. The filmmaker attempts to steady her camera in the strong frigid wind. She braces herself and tries to sink the tripod legs deeper into the icy snow. Between the Arctic gale and her shivering, the video image shimmies.

JOE LEAVITT

The smaller pieces, right near the shore,  
there's not a lotta ice underneath, under the water.  
So it's just being blown away by the  
wind. But a little further out,  
there's a lotta ice underneath  
so the current is actually holding  
the ice almost stationary out  
there.

FILMMAKER

So what do you look for when you're  
out on the ice? What sort of  
signals do you get that the ice  
might be unstable or about to  
change again?

JOE LEAVITT

What we look for is, that if it's a  
cloudy day, we'll see the black  
cloud out there that's telling  
us there's water out there. You can  
really notice that.

A large black cloud hovers in the distance over the ocean. As  
Joe speaks, we see a movement of the black cloud changing to  
white as it moves.

JOE LEAVITT

But if the ice is coming in, that  
black cloud that's over the water,  
it will actually start turning  
white. That tells you the ice is  
coming in. You can actually see  
that white point on the black  
cloud, it's actually the ice moving.  
It's like a big mirror to us. It's  
just a mirage, but it acts like a  
big mirror to us.

But what we have to look out for  
 is, when we're out on the leads, we  
 constantly keep track of the  
 current. The current is a big  
 factor when we're out on the ice.  
 Joe shifts his weight. His work jacket is open and  
 baseball cap high over his ears. Springtime.  
 The way they explained it to me is  
 that the current starts on the  
 bottom, then rises up to the top.  
 So we put a sounding line into the  
 bottom of the water, and it's  
 weighted with a hammer. And the  
 current will actually start on the  
 bottom of the ocean and rise up to  
 the top. All the time we have to  
 know what the current is doing.  
 That's a big factor when we're out  
 on the ice.

Many scientific researchers have turned to the indigenous community for insight on their research, and part of our research team includes Iñupiaq Eskimo elders and hunters. These community-based researchers are instrumental in providing the scientific teams with observations about the movement of the ice and changes in weather. These observations are informed by cultural knowledge of the environment that has evolved over generations of experience in this landscape. The hunters and the scientists both hold deep understandings of the environment, but often they are informed by different methods. As a filmmaker, my job is to weave this seemingly immediate process of field research and environmental knowledge into a continuum of experience and understanding of the North.

#### EXT. ICE RIDGE—DAY

Joe Leavitt and Matt Druckenmiller are standing and talking on an ice ridge overlooking the sea ice. Matt, a graduate student who has embraced an Alaska lifestyle, has been studying the ice trails that Iñupiaq whalers make each spring to get to and from the lead.

JOE LEAVITT

If the water first opens up, and  
you're looking at the black cloud  
we call qissu, usually they look at  
the clouds down there, and you can  
actually tell where there's a bay  
or a cove.

MATT DRUCKENMILLER

In the clouds you can see that?

JOE LEAVITT

Yeah, yeah. You can tell.  
(gesturing toward the horizon)  
That dark cloud is formed by the water  
over there and early spring you can see  
all the way down, and can tell  
where the points are along the ice.  
And you want to go on the west side  
of the points so you can watch the  
whales coming in.  
In the springtime the dark cloud out here  
is more evident 'cause everything is so  
white, and the dark cloud is like a  
big mirror, like a big television  
screen that we take care of.

The skill of being able to read the environment evokes all of the senses. Joe's ability to express his understandings to another not skilled in his system of observation and interpretation is what MacDougall (1998) would refer to as "trans-cultural communication." On the receiving end of this communication, I am personally obligated to understand and represent it as accurately as possible prior to transmitting the knowledge broadly. The elders now observe phenomena that have never been observed by the Iñupiat before. The scientists are recording datasets and marking distinct changes from previously documented baselines. Everyone agrees that the fragile arctic environment is changing.

The research team approached the sea ice as if from an aerial perspective. They essentially asked, "How is sea ice valuable, and to whom?" They investigated sea ice as a system that serves diverse constituencies simultaneously (see Chapter 1.2 in



Figure 8.5.1: *Qissu* in Barrow, Alaska. Spring 2008. Photo by Paula Daabach.

this volume). In gathering together expert stakeholders to discuss the role sea ice plays, I began to actually perceive a shimmer of a “crude look at the whole” (Gell-Mann 1994). Can we *see* this whole through the medium of video?

After reviewing and analyzing more than sixty hours of video recorded in Barrow for this project, I am struck by one dominant feature in this stark landscape: the diversity of people who are present to understand the arctic environment. This is a radical change. In an effort to document a shifting landscape, an international group of experts is coalescing around the issue and has become a new feature of the social landscape. The intense interest in climate change has sparked a new type of multidimensional research that addresses complexity, systemic processes, and tiered perspectives. It has become yet another example of a community of practice (Wenger et al. 2002) with a network of researchers poised to investigate myriad arctic questions and challenges under a single umbrella.

Documenting the changing of the Earth’s climate from a visual perspective is a monumental and lifetime task. It is work that cannot be accomplished by any one person on any one excursion. My aspiration in filming climate change is that I myself will learn to see the climate in a new way. I may never be able to document a transformational shift in the climate, but I can certainly approach the climate with changed eyes.

Within this project, emphasis was placed on comparative visual analysis, inclusion of multiple perspectives and voices, and opportunity for future reinterpretation of the current research. This research model will hopefully broaden the ability of all sea ice stakeholders to appreciate the expertise of others who use and study the sea ice.

The collective of perspectives defines our understanding of nature. The larger the collective, the more detailed our knowledge. Like Joe Leavitt’s *qissu*, we must



take care of our projected image of the environment. Without a synthesis of voices and a multitude of perspectives, we are left with a silent and static screen.

## References

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