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Comment

Non-quantitative knowledge about global warming: a trip to Antarctica

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Despite the developed world's climate-controlled interiors and easy access to all kinds of fresh produce at any time of year, our lives are still dependent upon the weather and climate. With global warming, our dependence is becoming even more apparent.

I am an artist working with new technologies and last year I had the opportunity to go to Antarctica for two months on a US National Science Foundation-sponsored residency where I worked alongside scientists studying the global implications of Antarctic weather and climate change. The Antarctic is unlike any other place on earth: geographically, politically, and culturally. Larger than the US, it is a frontier where borders and nationalities take a back seat to scientific collaboration and cooperation, a place where the compass becomes meaningless yet navigation is a matter of life and death. It is an extreme environment that holds some of the most unique species, but it is also an ecosystem undergoing rapid change. 2007/2008 marks the fourth International Polar Year (IPY), the largest and most ambitious international effort to investigate the impact of the poles on the global environment.

Prior to my trip, I had spent several years working in collaboration with atmospheric scientists to develop artworks for understanding storm and climate information through sound (a process called sonification). I created a spatialized sonification of highly detailed models of storms that devastated the New York area; a series of sonifications of actual and projected climate in Central Park, the heart of New York City and one of the world's first locations for climate monitoring; and a real-time multichannel sonification and visualization of weather in the Arctic.

I wanted to go to Antarctica to find a way to more closely engage with the issue of global climate change. I had been using data from remote weather stations in my projects, though I had never actually visited them. While in Antarctica, I spent most of my time in two places: The Dry Valleys (77°30'S 163°00'E) on the shore of McMurdo Sound, 3500 km due south of New Zealand, the driest and largest relatively ice-free area on the continent, completely devoid of terrestrial vegetation. It is a terrain of frozen lakes, glaciers and mountain rocks that many scientists believe may be similar to the terrain of Mars in the past. I also spent time at the geographic South Pole (90°00'S), the center of a featureless flat white expanse, on top of ice nearly nine miles thick.

I made many audio and video interviews with scientists, and I was struck by how many spoke about the importance of non-quantitative knowledge. I thought that only the hard numbers would matter to the scientists, not the visceral experience of a site, but I was surprised to find this was not the case at all. For example, Dr. Andrew Fountain, the head of the Dry Valleys Long Term Ecological Research Group, said:

> *"Just because you have the data doesn't mean you understand the system. It's important to come down and view the landscape and in our case view the glaciers, and see how the glaciers are reacting to these changing environments. And that feeds into our understanding and our non-quantitative knowledge."*

This non-quantitative knowledge is something that interests me greatly as an artist and in part, the purpose of my work is to give the public access to climate and weather information and instrumentation in order to help people understand our connection to the atmosphere and promote greater harmony with these natural forces. This full interview, as well as audio and video interviews with nearly 20 other science researchers and a preview of a short video documentary, raw sound recordings, images, video clips, and project updates are accessible to the public on my website www.90degreessouth.org.

Why am I so interested in the Arctic and Antarctic in relation to new technologies? Many contemporary environmentalists now look to technology as a way to achieve authentic natural experiences without the

danger of human impact. This is a radical departure from the philosophy of the traditional naturalist. The environmentalist movement born in the late 19th century stressed the importance of a direct, sensual and unmediated confrontation with nature. Emerson, Thoreau and the transcendentalists suggested that indirect mediated experience of nature robs humanity of a fundamental and universal human truth. But direct, human experience of nature also transforms it. Humans have occupied nearly every land mass for hundreds of thousands of years, making identifying an environment untouched by human technology very difficult. The Arctic and Antarctic have historically been two of these rare, unspoiled places. That is, until now. Through the vast melting of the Arctic ice sheet and the resulting concerns about the Antarctic ice sheet, these untouchable places now appear dramatically denaturalized. Remote, dangerous and unavoidably mediated, the poles offer a potential model for finding a way to create authentic, technologically transmitted experience.

Writing nearly 100 years ago of the harsh Antarctic environment, Richard Byrd realized that living simply, in touch with the earth's natural rhythms, is not only possible, but actually beneficial:

"It occurred to me then that half the confusion in the world comes from not knowing how little we need."

Author

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