

## Airspace

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This paper investigates how sound transmission can contribute to the public understanding of climate change within the context of the Poles. How have such transmission-based projects developed specifically in the Arctic and Antarctic, and how do these works create alternative pathways in order to help audiences better understand climate change? The author has created the media project Sonic Antarctica from a personal experience working in Antarctica. The work combines soundscape recordings and sonifications with radio-style audio interview excerpts. This work will be examined in the context of the other sound transmission science and art works.

The Poles are on the front lines of climate change. Known as the planet's refrigerators (DeRosa, 2008), they circulate cold air that drives many of the weather systems in the Northern and Southern hemispheres. The Arctic has experienced unequivocal warming leading to accelerated melting over the past ten years. However, by 2002, the Antarctic became a focus in the politicized mainstream media global warming debate because the research showed that overall the continent was cooling. (Doran, 2008) Lacking an understanding of the science and looking for proof against global warming for political purposes, some members of the mass media began to use the findings of Antarctic climate scientists to claim that global warming was false.

Through a series of interviews with climate scientists in Antarctica, the author discovered that the politicization of the global warming issue combined with the difficulty of communicating the complexity of climate science to the general public has contributed to a lack of public understanding of climate change. Several scientists interviewed by the author expressed the need for a greater understanding of climate change among the general public.

Since the first successful transatlantic radio communication by Guglielmo Marconi and his assistant George Kemp in 1901, radio has contributed greatly to the public imagination of the Poles. For example, within the subculture of the Ham or amateur radio enthusiast, the Poles are seen as the cause of both enhancement and disruption of long-range radio transmissions, and as a coveted goal by the long-distance Ham.

The Internet has also changed the paradigm of broadcast radio to a more distributed model, and media projects that use the Internet to stream sound



**Fig. 1: Contacting the South Pole from McMurdo station via radio** Photo: Andrea Polli, 2008



**Fig. 2: Radio antennae at McMurdo** Photo: Andrea Polli, 2008

live from the Arctic and Antarctic have been made in both an artistic and scientific context. Douglas Kahn has said that the annihilation of space and time is the goal of radio (Kahn, 2009), and while these projects transcend a seemingly insurmountable distance in near real time, in content they are firmly grounded in the present time and the political and geographic dimensions of the Earth. Structurally, metaphorically and aesthetically, the projects discussed in this paper re-frame transmission from a Polar perspective, giving a voice to both the people living in these remote locations and the rapid melting occurring there due to anthropogenic climate change.

In conclusion, because of the complexity of the information and the misinformation in mainstream media, there is a need for more direct public communication of weather and climate science. Sound offers a way for scientists to bring their messages directly to the public, by speaking to the public through recordings and radio transmissions and by collaborating on audification and sonification of scientific data. Listeners often respond to sound with emotion and empathy for the scientists' messages. Interdisciplinary collaboration is essential to the work of climate scientists in Antarctica, and radio allows for communication and possibly collaboration across vast distances, especially near the Poles. For these reasons, the Poles offer an opportunity for innovative uses of sound transmission and this sound can contribute to the public understanding of climate change within the context of the Poles.

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