“Origin, Direction, Location”: An Installation

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Photo: B. Bernstein

We are interested in representing simultaneity of time (past-present-future) and place through an interactive installation based on sound and image. The title “Origin, Direction, Location” comes from a Buddhist text (Rinpoche 1986) and refers to the “interdependent origination of all things.” with the awareness and attention required of mindfulness:

> Once we have assumed a properly relaxed posture, we can try the following technique, searching for the “Origin, Location, and Direction” of mind, (jung nay dro sum [‘byung gnas ‘gro gsum]). In this context mind means that which experiences everything we perceive, think, and feel. Being aware of this mind, we inquire: Where does it come from? Can we find any origin for it? And where is mind located? Is it anywhere inside or outside the body? Is it located in any physical organ, any particular part of the body? Or is it in the external world? When the mind moves, does it actually go anywhere?
>
> Does mind move in any particular direction? If so, how does it move? As long as the mind is at rest, simply dwelling in a state of clear, transparent awareness without any thought, what rests and what experiences that rest is nothing other than mind itself. When a thought arises, the mind adopts some form of expression, takes some direction. How does that come about? In this technique, we try to maintain awareness of the process by which thought arises and takes form; we try to understand the nature of the actual experience of thought arising in the

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> mind. The point is not whether the thought is a good or bad one. We are not concerned with the content of the thought, but the nature of it. How does a thought arise in the mind? Having arisen, where is it? How and where does it stay? When it disappears, what direction does it go in? North, south, east, west, up, down? Where does it disappear to? What is the cessation of a thought?
>
> When there is no thought in the mind, but the mind is resting in a state of clear undistracted awareness, where exactly is it? Can we locate the mind anywhere? How does the mind dwell when it dwells in this state? When we examine the mind at rest, does it have any size or shape or limiting characteristic that we can discern and define?

According to Buddhist philosophies, all things emerge from emptiness. Participants and observers will find that dependant upon their physical orientation and location while utilizing directed and ambient sounds, a world-view and environment is determined and revealed, making both the perception and creation of the work a personal and immersive experience.

In our work, four microphones are placed in the middle of a darkened room. The number of participants is flexible: One to four people can interact with each of the individual microphones or multiple participants can use one or more microphone simultaneously. Observers can also experience the work without actively participating.

A darkened room (see Figure 1) is fitted with four video projectors displaying images from the ceiling onto the four corners of the room with some overlapping of images at the center point of the walls. This initial, simple physical distortion alters the perception of the architectural space of the room and provides an additional platform for alteration of images.

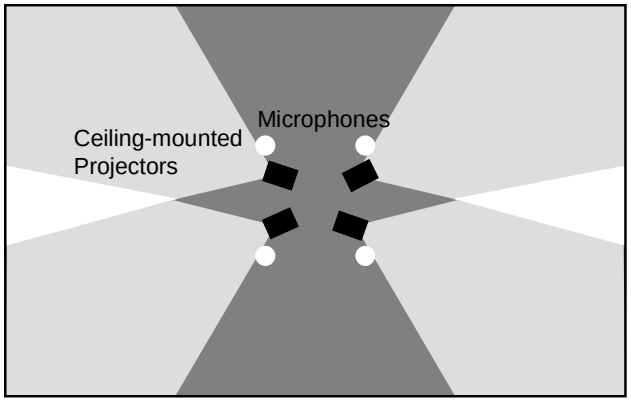

Figure 1. **Room with 4 projectors and microphones.**

The visual invitation of four microphones in the center of the room encourages their actual use by participants to make sounds or words. The four microphones act as a physical metaphor demonstrating that one's perception is based on a particular, and in this case literal, point of view. Sounds are used to both select and manipulate the images. Sounds are also recorded, and selected portions are replayed after a short delay with processing (filtering, reverberation, and sometimes granulation). Ambient sound based on feedback will be present as images are projected simultaneously on the walls and corners.

Images have been created specifically for this work by Barbara Bernstein with some additional works by David Garratt. (See Figure 2.) There are four categories of images to reinforce the four directions of the four microphones: People, Places, Things and The In-Between (Bardo). Images

are selected from within each category as the microphones are activated by sound. Distortion and alteration of the images (for example rotation, blurring, contrast) is dependant upon sound level and brightness among other features.

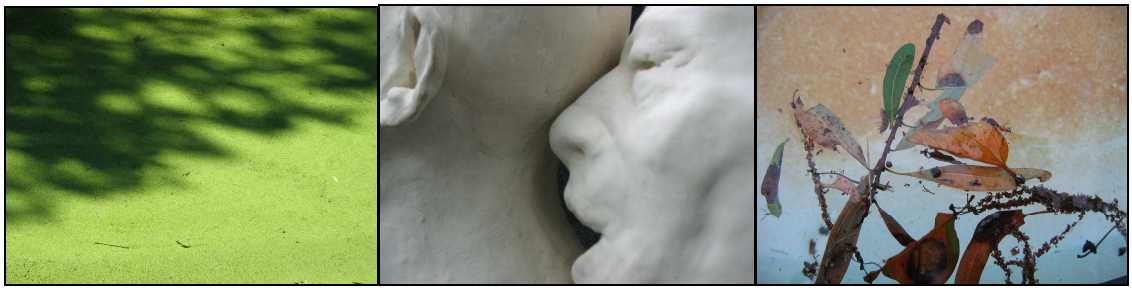

Figure 2. Images from “Location, Orientation, Direction.” Left and right: photos by B. Bernstein. Center: sculpture and photo by David Garratt.

The implementation is based on a combination of Cycling 74’s Jitter software (Jones and Nevile 2005) for image display and manipulation, running on four separate computers, each driving one projector, and custom software for audio processing using a fifth computer. All computers are networked and exchange information using Open Sound Control (Wright and Freed, 1986) running over a local area network.

The audio processing software is based on techniques developed for Roger Dannenberg’s composition, “Feedback.” (Dannenberg, 2006) In both works, sound is generated through acoustic feedback from the speakers into the microphones. Automatic gain control is used to prevent the feedback from developing into uncontrolled and extremely loud sounds. In fact, feedback can be so soft that it is almost imperceptible. Furthermore, filters placed in the audio path allow the frequency of the feedback to be controlled, and multiple feedback paths allow for multiple simultaneous feedback tones.

Aside from making interesting sounds, feedback acts as a metaphor for thought. Where does it arise? Feedback is clearly sustained by amplification, but where does it begin? Having arisen, where is it? “… all things emerge from emptiness.”

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