

## Telematic and Telepresence Installations

**M**y work with telecommunications started in 1985, when I created a virtual gallery that could be accessed via the videotext system. Since 1989, I have been working with Ed Bennett on the *Ornitorrinco* project of telepresence installations. The basic structure of these installations is comprised of a wireless telerobot, regular phone lines (both for vision and remote control), and remote spaces. Viewers become participants as they transport themselves to the remote body and navigate the remote space freely by pressing the keys on a familiar telephone.

*Ornitorrinco* remote spaces are always built to the scale of the telerobot, inviting viewers to abandon the human scale temporarily and to look at a new world from a perspective other than their own. In our international telepresence event, *Ornitorrinco in Eden*, realized on October 23, 1994, we hybridized the Internet with tele-robotics, physical (architectural) spaces, the telephone system, the parallel cellular system, and a revised if literal digital "tele-vision." This enabled participants to decide where they went and what they saw in a physical remote space via the Internet. Anonymous participants shared the body of the telerobot, controlling it and looking through its eye simultaneously.

A new aesthetic is emerging as a result of the synergy of new non-formal elements, such as coexistence in virtual and real spaces, synchronicity of actions, real-time remote control, operation of telerobots, and collaboration through networks. *Ornitorrinco in Eden* integrated all these elements.

I have created other kinds of interactive telematic installations. For instance, in *Essay Concerning Human Understanding* (with Ikuo Nakamura), a bird in a cage has a dialogue with a plant 600 miles away through a regular phone line. Placed in the middle of the Center for Contemporary Art in Lexington, Kentucky, the yellow canary was given a very large and comfortable cylindrical white cage, on top of which circuit-boards, a speaker, and a microphone were located. A clear Plexiglas disc separated the canary from this equipment, which was wired to the phone system. In New York, at the Science Hall, an electrode was placed on the plant's leaf to sense its response to the singing of the bird. The voltage fluctuation of the plant was monitored through a Macintosh running software called Interactive Brain-Wave Analyzer. This information was fed into another Macintosh running MAX, which controlled a MIDI sequencer. The electronic sounds themselves were pre-recorded, but the order and the duration were determined in real time by the plant's response to the singing of the bird.

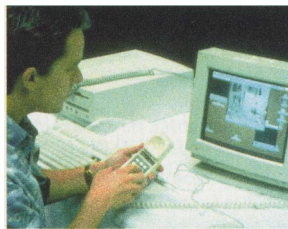
When this work was shown publicly, the bird and the plant interacted for several hours daily. Humans interacted with the bird and the plant as well. Just by standing next to the plant and the bird, humans immediately altered their behavior. When humans were in close proximity, the interaction was further enhanced by the constantly changing behavior of the bird and the plant. They responded by singing more (bird), activating more sounds (plant), or by remaining quiet.

In my presentation, I also discuss the piece I'm showing in The Bridge: SIGGRAPH 96 Art Show, entitled *Teleporting an Unknown State*. This piece connects a physical gallery to the placeless space of the Internet. In the gallery, the viewer sees an installation: a monitor hangs from the ceiling and faces a pedestal, where viewers and participants find a single seed. At remote sites around the world, anonymous individuals point their digital cameras to the sky and transmit sunlight to the gallery. The photons captured by cameras at the remote sites are re-emitted through the monitor in the gallery. The video images transmitted from remote countries are stripped of any representational value, and used as conveyors of actual wavefronts of light.

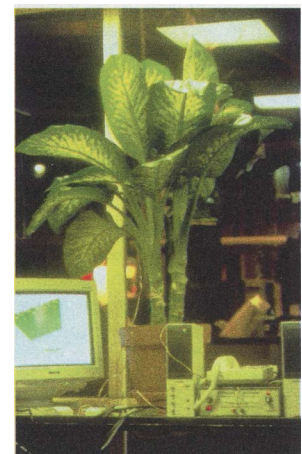
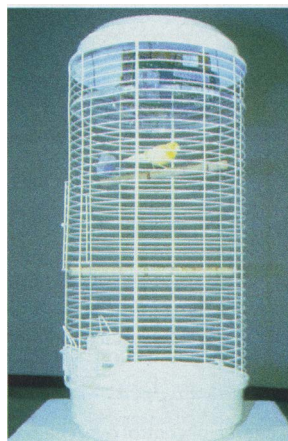
The process of birth, growth, and possible death of the plant is broadcast live to the world via the Internet as long as the exhibition is up. All participants are able to see the process. Through the collaborative action of anonymous individuals around the world, photons from distant countries and cities are teleported into the gallery and are used to give birth to a small, fragile plant. It is the participants' shared responsibility to care for this plant as long as the show is open.



The telerobot *Ornitorrinco* in the garden of the Art Institute of Chicago (1992).



A participant from Seattle sharing the body of the telerobot with remote participants in real time on the Internet, as part of *Ornitorrinco in Eden* (1994).



The two sides of the telematic interactive installation *Essay Concerning Human Understanding*, in which a bird in a cage has a telephonic dialogue with a plant in a remote location (1994).

### Contact EDUARDO KAC

Department of Art 207 Fine Arts Building University of Kentucky  
Lexington, Kentucky 40506 USA +1.606.257.2727 +1.606.257.3042 fax  
ekac1@pop.uky.edu <http://www.uky.edu/FineArts/Art/kac/kachome.html>