

Sound Garden

ASYNCHRONOUS IMPROVISATION BY NORBERT HERBER+OTHERS

TELEMATIC ENVIRONMENT FOR MUSICAL BECOMING & INTERACTION

About Sound Garden

Sound Garden explores the relationship of people, location, and audio relative to technology. In this context, people include those who use, visit, listen to, and tend the garden. Location means both physical and virtual spaces, and audio refers to manifestations of sound, silence, noise, and music. The technology explored in this project specifically includes telematic systems, digital audio signal processing, quadraphonic amplification, environmental sensors, and artificial life (A-Life) systems.

How Sound Garden works

Sound material is to be provided by all who visit, whether online or at the installation site. Help cultivate the garden with your own short recordings, samples, soundscapes, and found sonic objects. Visit www.x-tet.com/soundgarden and access the web interface to "plant" MP3 files you would like to hear, or "prune" the garden and uproot files planted by others.

Listen to the web stream

Sound Garden can be heard live over the Internet. Open the URL <http://hannibal.ucs.indiana.edu:80/soundgarden.m3u> with iTunes, VLC media player, Real Player, or Windows Media Player. For QuickTime, use [icy://hannibal.ucs.indiana.edu/soundgarden](http://hannibal.ucs.indiana.edu/soundgarden).

Physical installation & online interaction

This site is open between 8am-10pm Monday-Friday, 8am-5pm Saturday, and closed on Sunday. The web stream plays 24 hours a day.

Those who wish to interact by engaging in sonic gardening are encouraged to do so. There are a few technical necessities that, beyond computer and Internet access, should cost nothing. The basic requirements include:

- computer ■
- Internet connection ■
- speakers or headphones ■

With these you can plant and prune in the garden. If you wish to contribute audio material of your own you can use Audacity, a free, open-source, cross-platform audio editor that allows you to sculpt sounds and export them in MP3 format.

Sound Garden Notes

Sound Garden is a continuous work, meaning it is not defined by a performance of any particular duration. Listeners may situate themselves in the garden at the installation site or online and remain indefinitely. The music is characterized by sonic events that are unique in the moment—relative both to the sonic material that nurtures the garden and environmental perturbations that effect its development.

In the tradition of the physical work associated with organic gardens (planting, watering, fertilizing, weeding, pruning, etc.) Sound Garden provides an online interface that allows listeners to tend their sonic environment and take an active role in its composition and care. Using a web browser, listeners can contribute their own digital audio files (musical material, voice and environmental recordings, etc.) and become gardeners that help to form the overall sonic landscape of Sound Garden.

Because each sound is unique, the "seeds" that are planted will significantly effect the primary characteristics of the garden. A generative musical system uses Particle Swarm Optimization (Kennedy & Eberhart, 1995) to grow these seeds and define the overall structure. But Sound Garden is also largely shaped by events that occur at the site of installation. Environmental sensors tracking ambient light levels, temperature, motion, and vibration act on individual sounds that compose the garden. These sensors serve as additional layers in the musical system, and control a variety of signal processing parameters. As environmental conditions shift and change, the sensors reflect that change in the garden's continuous growth and development.

This musical work is primarily concerned with the idea of becoming. In Creative Evolution, Henri Bergson writes about becoming and our perception of reality, "Matter or mind, reality has appeared to us as a perpetual becoming. It makes itself or it unmakes itself, but it is never something made." Sound Garden was developed to explore the idea of music that exists as part of an environment. As such, it is subject to perturbations that ripple through that environment. Like living things, the musical work maintains a kind of autopoiesis (Maturana & Varela, 1980). It acknowledges perturbations in ways that modify (but neither disrupt nor end) its functioning order. This behavior is essential in that it leads to a becoming of sound—music that is making, unmaking, but never made. Listeners attend Sound Garden, but it is never the same Sound Garden.

Here, communications technologies are used to enable an artistic process of collaborative, musical creation through generative systems and self-organization. In improvised music, self-organization is the phenomenon that accounts for the uncanny musical dialogue heard between musicians. In the sciences, particularly in the field of Artificial Life, self-organization is a defining characteristic of living systems synthetic and organic. Similarly, one can find self-organization and emergent behavior on the World Wide Web in wikis, blogs, and community-based sites such as del.icio.us, slashdot.org and digg.com. If one looks carefully enough, self-organized behavior permeates many other facets of the arts, technology, and indeed our daily lives.

The dynamics of self-organization provide two essential ingredients of Sound Garden. In this continuous, generative work, an A-Life algorithm is used to maintain performance and ensure organic development over time. The project is also an experiment in musical self-organization. Like improvising musicians, those who visit Sound Garden will be able to make an individual contribution to the larger, group work. It could be said that this kind of freedom will result in cacophony and leave Sound Garden in a state of complete sonic incoherence. But much in the way that improvising musicians listen to each other in the course of performance, or people contribute thoughtfully and respectfully to a community flower garden, I anticipate that Sound Garden participants will act with sensitivity in response to the musical ecology that is created and sustained by this work.

Norbert Herber

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Thank you

Ryan Jones, web programming
Olaf Matthes, shoutcast~ external for Max/MSP
James McGookey, streaming server setup
Bart Vargas, installation coordinator

www.x-tet.com/soundgarden