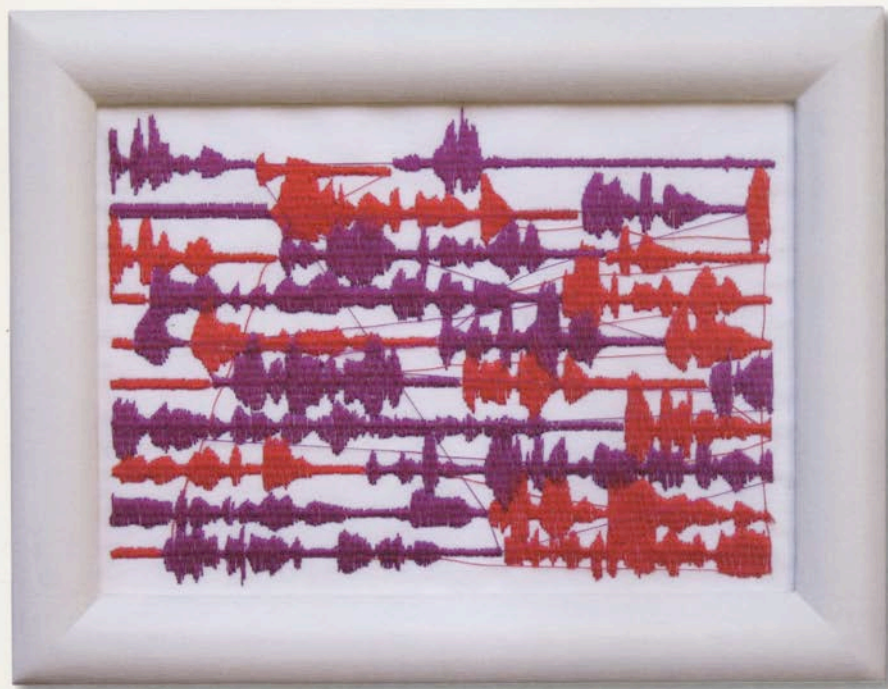


Volume 16

LEONARDO MUSIC JOURNAL

with compact disc

LMJ



*Noises Off: Sound Beyond Music*

The MIT Press  
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CD included with this issue:

**INTERPRETING  
THE SOUNDSCAPE**  
curated by Peter Cusack

# LEONARDO

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Volume 16 2006

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Louisa Bufardeci, *2006/03/04 21:03-21:04 her with Masato Takasaka*, from the series *13 captured telephone conversations*—all one minute long, machine embroidery, 13 × 18 cm, 2006. (© Louisa Bufardeci. Image courtesy of the artist and Anna Schwartz Gallery, Melbourne, Australia.) See <www.louisa bufardeci.net> for more information.

## ANATOMY OF AN AMALGAMATION

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*Waken. One finds the disruption of  
the moment between: information  
trails, activated polymers, vibrations.  
The equation is set. The outcome is not.*

*Waken* is a full-room installation that is constructed from multimedia that include cardboard, shellac, gold leaf, six-channel surround mix, the audio and design softwares Max/MSP and Rhino, and a topographical "map" in the form of digital animation. It is a generative sculpture that utilizes three distinct algorithms through which the composition is created. *Waken* constructs a sonic prairie where diversity, accident and spontaneous growth happen in sound. The six-channel audio mix is dispersed through 24 speakers grouped in four arrays. The arrays we have named "flower clusters" (Fig. 1), for they are designed to simulate the organic behavior of flower interactivity. The movement of the sound, from speaker to speaker, is run from an algorithm, the Beesim patch, which takes its cue from the honeybee. When a "bee" arrives to sample the "pollen" of a flower cluster there is an exchange of energy and information. The pollinator as information activist.

The Beesim patch is a fraternal twin to the flower cluster, in the sense that both are modeled on interrelated phenomena in the natural world. One does not exist without the other, yet their structures and effects strongly differ. One algorithmic set lets loose the bees in the terrain—the pollinators. This set articulates the rules for the movement/distribution of the sound to the speakers. The other algorithmic set designates the parameters for generative sound modules, the "flowers." The third patch system generates the semi-random synthesis of *Waken* audio samples (pre-recorded music composed for the piece). This is a granular synthesis modulation that is more or less the

audio equivalent of throwing seeds into a field.

Our project starts with these algorithmic impulses. In *Hive City*, the sculpture that sits in the center of the installation, a variation of this impulse is woven together with stretchy, stringy and fleshly polymers, catching a shake, a shimmer of movement. We were looking for a dynamic material to work with for the physical installation of the piece that would echo the morphological characteristics of the sound field. For the sculpture to behave as a part of the *Waken* system, the material had to be flexible yet weight bearing, like a rubber band. We met with Lorna Gibson, of MIT's Department of Materials Science and Engineering, and she suggested polymers that are being developed to be used as synthetic muscle. The concept floored us—of course, an actuating polymer to create the synthetic movement of a mathematical awakening.

The set of the sculpture, its dense body of finite situation, should somehow formally relay the infinite message of the audio. That is to say, the algorithmic, or generative, aspect of the project is also manifested sculpturally, where materiality spans the visible and tangible as well as the invisible and intangible of sound. The code of behavior is the same, but the forms are generated across a continuum of media. The 3D map of *Waken*, housed within the installation, is an animation.

*Waken* builds across a network of generative signals. This is all within the parameters of the "man made," yet one starts to doubt the total mastery of knowing and instead to trust the intuition of making something that is becoming itself. It is funny how the more technology we get involved with, the more we come into contact with the workings of the natural world... or at least our metaphors of it. "Are there any borders?" becomes a pertinent question for us. Is technology in our nature? Daily we are saturated by invisible waves carrying tons of information. Our lives are impacted by this material. Sometimes it is nice to immerse ourselves in the questions of communication and watch our robots grow up.

*The New York-based artists Beth Coleman and Howard Goldkrand began collaborating in 1995 with the SoundLab Cultural Alchemy project, a nomadic multimedia installation and event (see <www.soundlab.org>). Coleman and Goldkrand work with diverse materials including sculpture, installation, sound, code and text. Their collaborative and individual projects have been exhibited internationally in venues such as the Whitney Museum of American Art, P.S.1 Museum of Contemporary Art, Mirror's Edge international exhibition, James Cohan Gallery, the Venice Biennale 2004, ARC/Musée d'Art moderne de la Ville de Paris, MIT List Gallery, EAI, and Lincoln Center, and with the work of architects Johnston Marklee & Associates.*

Fig. 1. Beth Coleman and Howard Goldkrand, *Waken*, multimedia installation and generative sculpture, 2005. (© Beth Coleman and Howard Goldkrand) *Waken* is a sonic prairie where diversity, accident and spontaneous growth happen in sound. The six-channel audio mix is dispersed through 24 speakers grouped in four arrays. The arrays are called "flower clusters," for they are designed to simulate the organic behavior of flower interactivity.

