

Program Notes and Technical Descriptions
for research & creative projects, 2004-2011

Butch Rován

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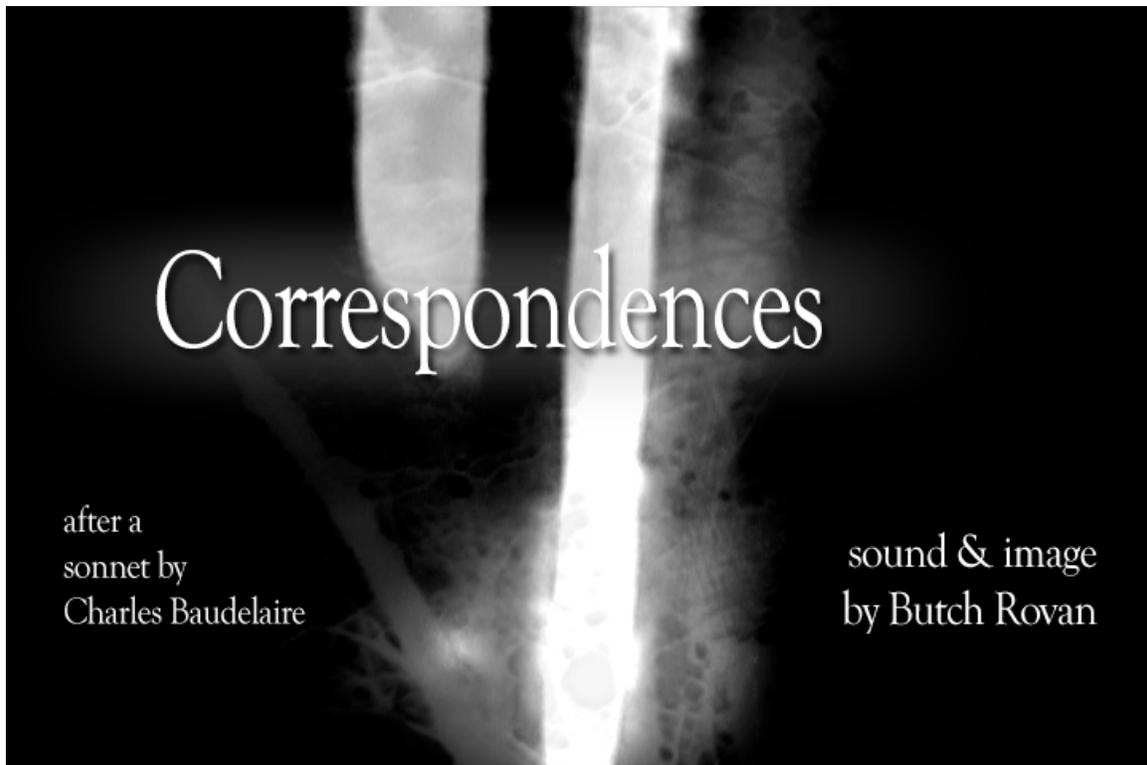
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Music, Video, & Installation

1. *Correspondences: an audiovision, for video and 5.1 surround sound (2007)*



Commissioned for *The Flowering of Baudelaire* Conference on the 150th anniversary of Baudelaire's *Les Fleurs du Mal*, Brown University, October 2007.

Performances

- 2011 Sonic Rain Concert Series, University of Oregon, Eugene
BEAMS Festival, Brandeis University, Waltham, MA.
- 2010 Vassar College, New York.
Autumn in Zero (month-long exhibition), GaleriaZero, Barcelona.
Sounding Out Festival, Bournemouth UK.
Toronto Electroacoustic Symposium, Toronto Canada.
Electronic Literature Organization conference, Providence.
- 2009 The New York City Electroacoustic Music Festival.
Center for Experimental Music and Intermedia, University of North Texas.
- 2008 University of Central Missouri.
Simon Fraser University, Canada.

- Pixilerations Festival V.5, Providence.
 International Computer Music Conference, Belfast, Ireland.
 University of North Carolina, Chapel Hill.
- 2008 SEAMUS 2008 National Conference, Salt Lake City.
 11th Biennial Connecticut College Symposium on Arts and Technology.
 McGill University, Montreal.
- 2007 Texas A&M University, College Station.
 Baudelaire Conference, Brown University, Providence.

Program note

Correspondences is a work for video and computer music that acts as a translation of Charles Baudelaire's famous sonnet "Correspondances" from *Les Fleurs du mal*. I call this work an *audiovision* because the translation deals with sounds and images rather than words. My reading follows the poem's structure and overall gesture, pivoting around certain formal elements, especially the white spaces separating the strophes and the expressive dash punctuating the first tercet. But form encloses meaning. The sonnet as a whole serves as the basis for a more extended meditation on time, memory, and the materiality of poetry itself: something both written and spoken, though often half-remembered, like a dream.

Correspondances — Charles Baudelaire

La Nature est un temple où de vivants piliers
 Laissent parfois sortir de confuses paroles;
 L'homme y passe à travers des forêts de symboles
 Qui l'observent avec des regards familiers.

Comme de longs échos qui de loin se confondent
 Dans une ténébreuse et profonde unité,
 Vaste comme la nuit et comme la clarté,
 Les parfums, les couleurs et les sons se répètent.

Il est des parfums frais comme des chairs d'enfants,
 Doux comme les hautbois, verts comme les prairies,
 — Et d'autres, corrompus, riches et triomphants,

Ayant l'expansion des choses infinies,
 Comme l'ambre, le musc, le benjoin et l'encens,
 Qui chantent les transports de l'esprit et des sens.

Correspondances — translation: Keith Waldrop

Nature is a temple whose columns are alive
 And sometimes issue disjointed messages.
 We thread our way through a forest of symbols
 That peer out, as if recognizing us.

Like long echoes from far away,
 Merging into a deep dark unity,
 Vast as night, vast as the light,
 Smells and colors and sounds concur.

There are perfumes cool as children's flesh,
 Sweet as oboes, green like the prairie,
 - And others corrupt, rich, overbearing,

With the expansiveness of infinite things,
 Like ambergris, musk, spikenard, frankincense,
 Singing ecstasy to the mind and to the senses.

Technical Description

I created the visual material for *Correspondences* by shooting high-speed video of natural and artificial locations, which I then manipulated with various video-processing tools. The acousmatic sound score for *Correspondences* is based on recordings of the visual elements present in the work, including the sounds of writing, paper, and several different readings of the poem. The sounds were processed using various custom-made tools.

2. *Let us imagine a straight line* (2009)

six installations for sound, custom instruments, and moving image



1. Wall-mounted light sculpture
2. Biometric table & interactive video
3. Interactive whispering wall
4. Animated telegraph & small-format video
5. Large-format video & 5.1 surround sound
6. Small-format video triptych

Commissioned by the Cogut Center for the Humanities, Brown University. Additional support from the Richard B. Salomon Faculty Research Award and The Lighting Science Group, Sacramento, California.

Exhibitions & Screenings

Let us imagine a straight line has been seen by thousands of viewers during showings in the U.S., Poland, and Australia.

2011 WRO 14th Media Art Biennale, Wroclaw, Poland, May – June.

2010 International Computer Music Conference, Stony Brook, NY, June.

“Expanded Architecture” International Film Night, Sydney, Australia, November
[documentation video only].

2009 Cogut Center for the Humanities, Brown University, October – November.

Let us imagine a straight line of unlimited length, and on this line a material point A, which moves...
—Henri Bergson

Program & technical notes

Let us imagine a straight line is an interactive work about movement, the first installment in my ongoing project for dancer, video, music, and live electronics called *Studies in Movement*. I take these titles from two French thinkers of the late 19th century: physiologist Etienne-Jules Marey and philosopher Henri Bergson. Marey conceived the apparatus for the modern scientific study of movement. He invented instruments to measure human and animal locomotion—a beating heart, a bird in flight—and developed technologies that eventually led to the modern cinema. Bergson responded to these advances with a philosophy that rethought the relation between space and time, matter and memory, physical and psychological movement.



The counterpoint of Bergson's thought and Marey's vision suggests a drama about the power and limits of human perception. *Let us imagine a straight line* invites participants to experience the difference between their two ways of seeing.

The full work features six different installations, which can be displayed in different combinations. Below I describe all six pieces, shown at the inaugural exhibition for the Cogut Center for the Humanities, Brown University, in 2009.

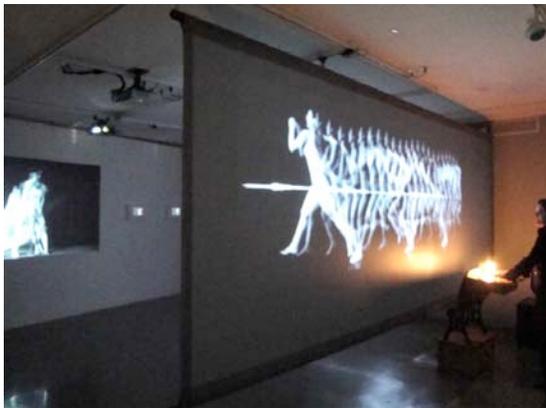
1. Wall-mounted light sculpture



The first installation is a 12' x 8' sculpture illuminated by over 9,000 LEDs. The LEDs are diffused through 96 translucent tubes arranged vertically along the wall. The apparatus was designed in collaboration with the Lighting Science Group in Sacramento, CA. The LEDs translate a high-speed video image of dancer Ami Shulman; the result is a flickering image of continuous movement that the viewer perceives in both its component parts and as a totality.

2. Biometric table & interactive video

The biometric table is an instrument I built to evoke the elegant machines of 19th-century science. It measures proximity, touch, and the electrical activity of the heart. When patrons place their hands on the brass sensors, the machine calculates their heart rate. As the calculation is reached, the table lights up. At the same time, a sound event is triggered and a video begins to play on a facing screen (below).



This two-part machine imaginatively combines two of Marey's most celebrated inventions: the sphygmograph, which defined the field of modern cardiology by producing the first graphical records of pulse; and the chronophotograph, which anticipated the modern cinema by producing the first multiple exposures on single glass plates and on film. *See p. 28 of this document for more information about the biometric table.*

3. Interactive whispering wall

This installation includes an interactive wall that, in contrast to the chronophotography of the previous screen, features a more impressionistic image of the dancer's movement. As viewers move toward the wall their shadows combine with the moving image, and fragments from Bergson's philosophical texts appear in the spaces, whispering back to the viewer. Participants in this sense are able to "read" the dancer's movement with their own bodies.



Real-time video tracking allows the system to correlate gesture and location to specific text and audio. The video processing is designed to promote slow and contemplative movement on the part of the participant. Fast or abrupt movement is invisible to the system.

4. Animated telegraph & small-format video



This installation reanimates a vintage 1890s telegraph with the help of an embedded computer system. The interactive electronics enable the telegraph to read fragments from Marey's scientific treatises, which are displayed on an adjoining video. When the texts appear the words are tapped out in Morse code. Along with the texts, the video includes archival footage from Marey's laboratory, as well as my own visual studies of a

dancer's body in motion. See p. 29 for a more detailed technical description of the telegraph.

5. Large-format video & 5.1 surround sound

This installation pairs high-speed video in large format with an algorithmically generated 5.1 soundscape that unfolds in subtle and ever-changing patterns. The image echoes the figure in the wall-mounted light sculpture of the first installation. The video itself is an 18-minute loop that forms an arresting centerpiece for the work: a sustained, slow motion improvisation that demands complete and unbroken attention.



6. Small-format video triptych

This installation features three small-format videos mounted in shadow boxes. Each one contains different high-speed imagery of the now familiar dancer, whose movement here forms a sequence from the concrete to the abstract. The effect is like a confrontation between the ideas of Marey, who understood movement as a series of discrete events, and Bergson, who imagined time as an unbroken line. The words of the two

protagonists, scientist vs philosopher, run through the videos, silently commenting on the moving images.

For these shadoboxes I created custom video-processing routines that leave the impression either of chronophotographic measurement or pure continuity. The videos can be read, then, as a representation of the difference between science and philosophy.

**3. Slim Jim Choker: an interactive recital in 10 parts (2010)
for speaker and interactive typewriter**



- | | | | |
|----|-------------------|-----|-------------------|
| 1. | The Typing | 6. | The Nouns |
| 2. | The Endings | 7. | The Reverse |
| 3. | The Haiku | 8. | The Story, part 2 |
| 4. | The Actions | 9. | The Consonants |
| 5. | The Story, part 1 | 10. | The Poem |

Performances

2011 Third Practice Electroacoustic Music Festival, Richmond, November (*forthcoming*).

SEAMUS 2011 National Conference, Miami, January.

2010 Brown Faculty Show, Providence, December.

Vassar College, New York, October.

Pixilerations Festival, Providence, October.

Program note

Slim Jim Choker is a piece I created in collaboration with visual artist and writer Lucky Leone. It is based on an absurd but true story about an event that took place in the parking lot of a restaurant. The content of the brief story is represented from a variety of perspectives in the ten movements, each of which reflect on the materiality of the telling. The typewriter itself plays a role, producing in its own sound world an alternative text that interrupts and counterpoints the speaking voice.

Technical description

See p. 30 of this document for more information on the interactive typewriter.

4. *In Place of the Unfolding, video installation with stereo sound (2010)*

Photography, sound, and programming by Butch Rován

Movement by Ami Shulman

B/W high-speed video (4:3), stereo sound, 5'34"



Exhibition

2010 Brown Faculty Show, Bell Gallery, Providence, December – February, 2011.

Program note

The speed of unfolding of this external time might become infinite; all the past, present, and future states of the universe might be found experienced at a stroke; in place of the unfolding there might be only the unfolded.

–Henri Bergson, *Duration and Simultaneity*

A single high-speed shot of dancer Ami Shulman is unfolded at multiple velocities and through multiple perspectives. An accompanying score explores the sounds of performance and the physicality of the moving body. Rapid cutting between sections of the same footage offers the viewer two distinct experiences of the passage of time. The sometimes violent juxtapositions create a sensation of being pulled between two simultaneous time domains: like parallel universes refracted from the same continuous duration. In this piece, designed for continuous playback in a gallery space, the two domains are destined to remain irresolvable and unresolved.

This installation was first shown at the David Winton Bell Gallery, Brown University, in November 2010. It forms part of my ongoing project *Studies in Movement*.

5. *imperfect transmissions, for laptop ensemble (2010)*



Performance

2010 Issue Project Room, New York, December.

Program note

This piece emerged from a graduate seminar I taught on networked improvisation at Brown University in fall 2010. Networked improvisation is a collaborative form of music making that uses data transmitted and received via a computer network as the basis of musical events. The “network” is defined by any number of individual computers connected to a wired or wireless network, each with its own unique address, and able to share data in real time.

In *imperfect transmissions* I was interested in exploring the rhythmic implications of what is known as “latency” in the network. Sent messages will always have unpredictable arrival times. The latency, or time delay between the sending and receiving, produces unexpectedly complex rhythms when the values are translated into and heard as musical events. The fluctuating sound of multiple players (and multiple computers) exchanging data over the network offers a poignant metaphor for communication in a technological world.

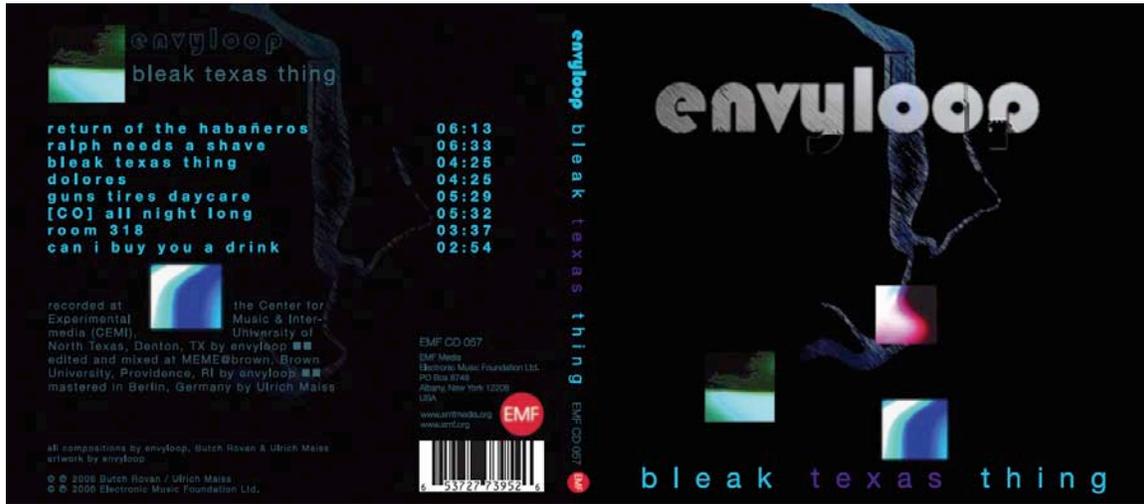
Technical description

For this piece, I created a set of software programs that send and receive network data, analyze the timing of that data, and map the timing variances to sound via software synthesis. The system must include at least two computers, but can function with many more. Players are able to infiltrate the system and affect the behavior of the network as well as the sound qualities controlled specifically by their computer.



Recordings

6. Envyloop: Bleak Texas Thing (EMF, 2007)



Butch Rován: clarinets & electronics
Ulrich Maiss: cello & electronics

Available on www.amazon.com and www.emf.org



Program note

With its combination of acoustic instruments, live electronics, interactive video, and found objects, this recording offers an eclectic mix of musical styles and personae. The improvisations speak both to the bleak landscapes of rural Texas and to the urban soundscapes of contemporary Berlin. *Envyloop's* music ranges from ambient soundscapes to hardcore noise attacks. The music flirts on the edges of the

avant-garde and of popular music, aided by real-time computer processing and extended instrumental techniques.

Press

From a review in *Computer Music Journal* by M.Schedel:

“Ulrich Maiss and Joseph "Butch" Rován...used gesture to great effect in their works. With Mr. Maiss on cello and Mr. Rován on bass clarinet the audience had a great time listening to two European free-jazz influenced works. They had a lot of fun onstage together in *Return of the Habaneros* at points playing air cello and air clarinet... I thought this was one of the best performances.”

Envyloop live performances:

2009 STEIM Concert Series, STEIM Center for New Music, Amsterdam, March.

2006 "Experimental Intermedia" Digital Arts festival, New York, March.

2005 ANNEX GROUP concerts, Northern Illinois University, October.

Pixilerations V.2, Providence, October.

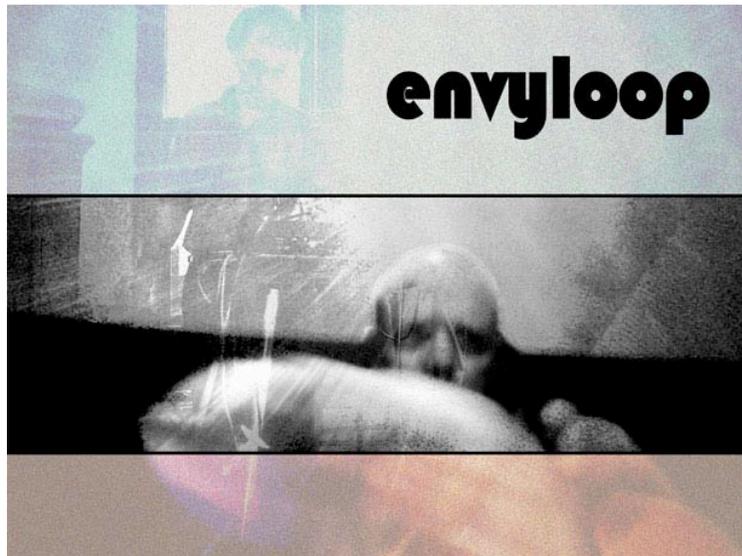
Special invitation to International Computer Music Conference "off-ICMC" 2005, Barcelona, September.

NIME (New Interfaces for Musical Expression) International Conference, Vancouver, May.

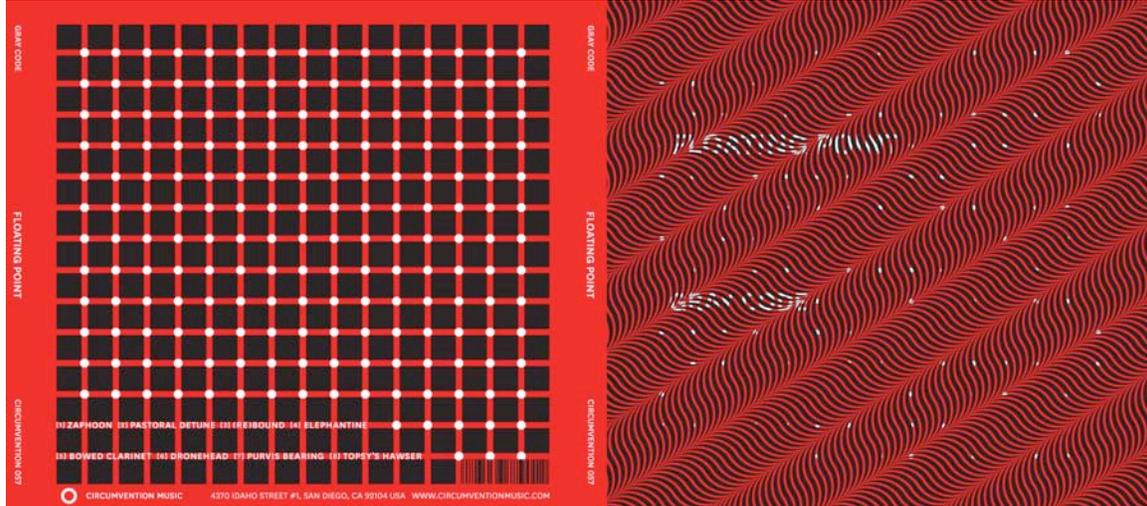
Ballhaus Naunynstrasse Theater, Berlin, March.

Würzburg Studio fuer Neue Musik, Würzburg, March.

2004 AS220, Providence, October.



7. Gray Code: *Floating Point* (Circumvention Music, 2010)



Fred Kennedy: drumset & percussion
Kevin Patton: guitar & electronics (TaurEx)
Butch Rován: alto clarinet & electronics (MiMICS), soprano clarinet, bass clarinet,
contra-alto clarinet, xaphoon

Available on: www.amazon.com and www.circumventionmusic.com
website: www.graycode.org



Gray Code's unique style creates a sound that explores timbre, extended instrumental techniques, and the in's and out's of groove. At the heart of the trio's music is the extension of instrumental sound through wireless sensor systems that track performance gestures. Modified instruments, custom-built by Rován and Patton, allow the real-time control of sound synthesis through physical movement. These new technologies—together with traditional acoustic instrumental techniques—enable the

trio to create atmospheric worlds in waves of rhythmic patterns that follow an unpredictable improvisatory logic.

Press

Floating Point has been aired on many international jazz stations, including shows in France and Germany. The CD was reviewed on several well-known jazz blogs as well. The French Canadian jazz blog "Monsieur Délire" (<http://blog.monsieurdelire.com>) had this to say about *Floating Point*:

".....the music speaks to me. It explores sonic and human relations, isn't afraid to question itself, dives into the unknown with a sense of urgency. A fine effort."

The Italian jazz blog "allaboutjazz" (<http://italia.allaboutjazz.com>) had this to say:

"...a blinding flash, [Floating Point] provides a sweetness and a particular elegance, thanks to the interaction between machines and creative human sensitivity."

And the German jazz blog site Ragazzi Music said:

"The free-attacks of the supercharged horns, which develop during the song from deepest melancholy to ebullient drama, are aided by the drums, which are carried away themselves, while the electronic sounds slowly dissipate and cease to cooperate.

Absolutely listenable...every idea of beauty of sound is executed lustily and with verve on the battle ground of radical sounds."

Gray Code performances

2010 Grant Recital Hall, Brown University, Providence, October.

2008 Bushwick Department of Public Works, Brooklyn, NY, July.

Extensible Electric Guitar Festival, Clark University, April.

University of North Carolina, Chapel Hill, April.

McGill University, Montreal, January.

2007 NIME (New Interfaces for Musical Expression) International Conference, New York, June.

Spark Festival, Minneapolis, February.

2006 The Knitting Factory, New York, December.

Hell Gate Social, New York, November.

Pixilerations V3, Providence, September.



Gray Code at the 2007 NIME Conference.

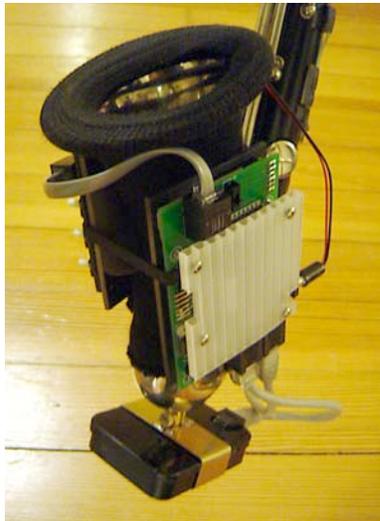
Instrument Design

8. MiMICS: Macro-instrument Musical Interface & Confrontation System (2005)



MiMICS is a system I designed that augments acoustic instruments with a wireless sensor system. The system allows the performer to control real-time processing of the acoustic sound via three-dimensional motion. Sensors attached to the body of the instrument allow direct access to processing parameters during performance. I originally designed *MiMICS* for use with my alto clarinet; the system enables me to modify, capture, and mutate the alto clarinet sounds while playing. It also acts as a controller that allows me to process the sound of other players during a performance.

MiMICS comprises a custom-made microcontroller interface, and a network of sensors attached to various parts of the instrument. The system uses a wireless ZigBee interface.

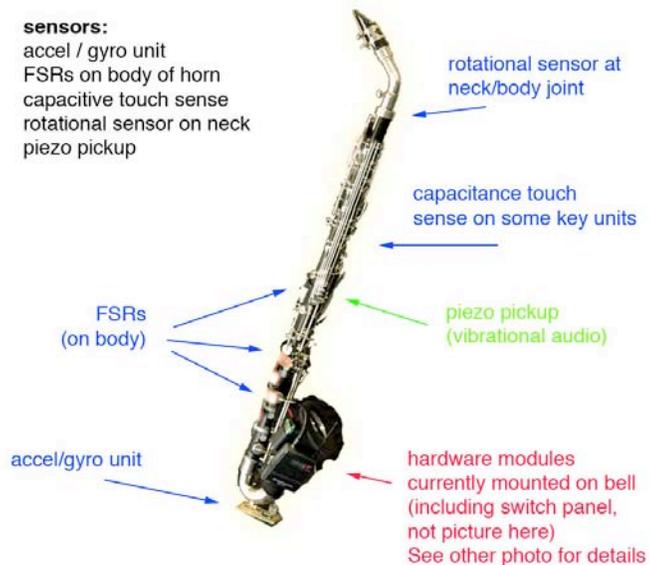


hardware modules:
 microcontroller board (w Zigbee)
 switch interface unit
 audio wireless xmitter
 accel / gyro unit

MiMICS
 Macro-instrument
 Musical Interface
 Confrontation
 System

 Butch Rován
 rovan@brown.edu

sensors:
 accel / gyro unit
 FSRs on body of horn
 capacitive touch sense
 rotational sensor on neck
 piezo pickup

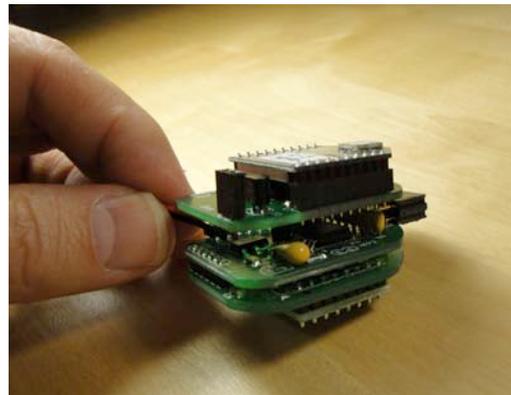


For examples of *MiMICS* in action, see the accompanying DVD, and listen to *Floating Point* by my ensemble Gray Code.

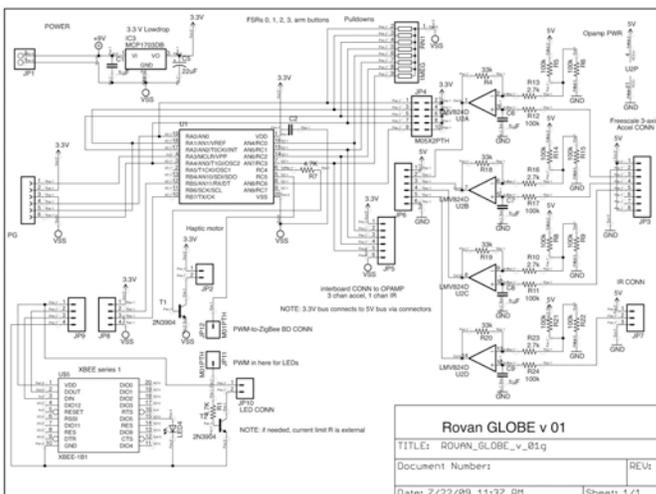
9. *GLOBE* gestural controller (2009 to present)



I built the *GLOBE* gestural controller after several years of performing with a custom-designed data glove. I had sometimes used a ball with the glove to provide an easy surface with which my hand could interact. With the *GLOBE*, my aim was to put all of the functionality of the glove controller—and several other features—inside the ball. I also wanted to create a wireless interface for the instrument. The project was a design challenge, because of the size constraints of the *GLOBE*'s dimensions.

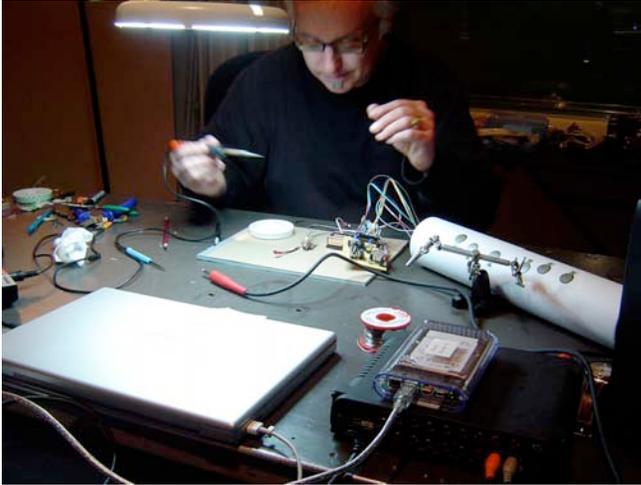


The *GLOBE* features a ZigBee wireless transmitter, 4 FSR sensors, 1 3-axis accelerometer, 1 infrared proximity sensor, haptic feedback, and PWM-controlled internal LED lighting.



For examples of the *GLOBE* in action, see the accompanying DVD.

10. the *Banshee*, custom analog electronic instrument (2009)



The *Banshee* is an analog electronic instrument I designed with the goal of creating an expressive instrument that does not require a computer or software. Modeled after a wind instrument, the design uses six finger pads that control the pitch of a complex array of interrelated oscillators, and a mouth sensor that allows the performer to control volume.

The *Banshee* also features a tilt-sensor that allows motion to change the voicing circuitry and resulting timbre. Battery powered, the instrument can plug into any amplifier or mixing console, much like an electric guitar.

Here, I was interested in the gestures associated with playing the clarinet, although the *Banshee* requires no breath. I was also interested in creating an electronic instrument whose sound had a more direct relationship to the performer's body. The sound is thus created by analog circuitry, and requires no intervening computer.



For an example of the *Banshee* in action, see the accompanying DVD.

11. Biometric Table (2009)



The Biometric Table uses several sensing methods to generate sound and image from a participant's physical activity. The project, part of my installation *Let us imagine a straight line*, combines 21st-century technology with 19th-century aesthetics, in order to create an interactive interface that recalls the precision and artisanship of the instruments created during the heyday of the scientific revolution.

Three physical aspects of each participant are sensed: proximity via infrared, touch via capacitance sensing, and heart rate via a custom-built EKG interface. As the viewer approaches the unit, a proximity sensor awakens the machine, turning on the meter backlight and initiating the first layer of sonic activity. The meter is a custom-made device that mimics the type of visual display found on early scientific instruments.

When participants place their hands across the two rows of brass sensors, their touch is sensed and another sonic layer activates. The brass sensors are also the EKG interface, and as soon as the participant touches them the EKG calculation begins. Data is transmitted wirelessly to a remote computer, where heart rate calculation takes place. As the computer calculates the heart rate, data is sent back to the Biometric Table to activate the meter, showing a calculation in progress.



When the EKG calculation is complete, the Biometric Table receives data from the remote computer to activate the vintage light bulb (a recreation of an 1892 Edison bulb). At the same moment the remote computer uses the Biometric Table data to generate video and sound events: on the dual-screen projection participants watch a waveform of their heart beat combined with other images; the sonic events include audio of their own heart beat. (For examples of the Biometric Table in action, see enclosed DVD, *Let us imagine a straight line.*)

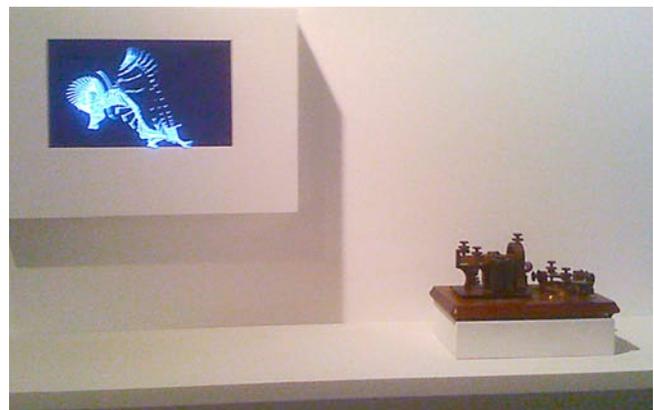
12. Interactive telegraph (2009)



The interactive telegraph is built around a vintage 1890s telegraph, which I found, still operable, in an antique store.

The telegraph is reanimated with the help of an embedded computer system that allows its mechanism to interface with an associated DVD player. The embedded electronics enable the telegraph to read texts displayed on the video. When the texts appear, the telegraph springs into action, tapping out the letters in Morse code.

In addition to the C code written for the PIC microcontroller, I created pre-processing software in MaxMSP that generates portions of the C code for the microcontroller based on the desired text library.



For examples of the Interactive Telegraph in action, see enclosed DVD, *Let us imagine a straight line*.

13. Interactive Typewriter (2010)

I developed the interactive typewriter using an old typewriter Lucky Leone brought back from Canada. (The typewriter still has a sticker from the "N. Leblanc Équipement de Bureau" company in Longueuil, Québec.) The typewriter is an *Optima*, made in Germany.



As I re-learned to type on a manual typewriter, I was fascinated by the gestures used in typing: The percussive keystrokes, the carressing carriage returns; the clunky spacebar; the full-body gestures needed for platen adjustment. I attached different sensors to most parts of the typewriter, so that all these gestures could be captured. In

addition, I built a retro-looking control panel to interface with the computer (see photos above and below right) and to control the performance configurations. Two PIC microcontrollers inside the control panel handle sensor acquisition and two-way communication between the panel interface and the computer.

Sensor data from the typewriter is dealt with in MaxMSP, controlling various synthesis and signal processing routines.



For examples of the interactive typewriter in action, see enclosed DVD, *Slim Jim Choker*.



Interior of accompanying control panel