

## LISTEN EDGEMAR

notes by Michael F. Zbyszynski



### **Points**

During the creation of *Listen Edgemar*, it became increasingly apparent that, in order to understand the piece and to program it properly, we would need a systematic metaphor for the piece as it exists in time. Although time tends towards linearity in both classical music and Max/MSP<sup>1</sup> (my programming environment of choice), this project is more accurately represented by a circular – better by still a spiral temporal trajectory. The sonic experience is one more akin to sound art – perhaps an aural sculpture in the style of Calder – than a teleological music composition. The programming style evolved out of that metaphor, becoming an activity characterized by projection, mapping linear processes onto a curved space.

### **Lines**

Classical Music, more precisely European Art Music is typified by its orientation towards goals, a sense of direction. One can read about linear analysis in the works of Heinrich Schenker and his disciples, which postulates “music as directed motion in time.”<sup>2</sup> Jazz music also stresses a narrative structure; improvisation is often likened to telling a story. Our background in these musics informs one category of our aesthetic inclinations. These inclinations required a mild twisting to fit the topography of *Listen Edgemar*. We have also found more relevant models of musico-temporal organization, specific to contemporary composers, and to musics outside the western tradition. Since the beginning of the project, we have felt the strong influence of John Cage’s writings and music<sup>3</sup>. His use of the I Ching and attention to Zen Buddhism suggest alternate formulation of musical time that does not participate in directed motion. More recently, the Lowercase Sound<sup>4</sup> movement and R. Murray Schafer’s work with soundscapes<sup>5</sup> have opened up possibilities for site-specific sound art.

*Listen Edgemar* is implemented with Max/MSP, a graphical programming environment. Into a blank workspace, the programmer inserts individual objects that represent elementary classes of functions. For instance, an object might multiply its input by another input, generate a random number within a specific range, or play a sound file from memory. The programmer then connects each object in order using virtual patch chords. This style of “patching” is appealing partially because of its similarity to analog synthesizers; the software for electronic music mimics the hardware. By creating chains of cause and effect across dozens of objects, the composer/programmer builds a situation resembling a Rube Goldberg Machine

where the ultimate output is sound. Even a simple “patch” is an exercise in linear logic, which manifests itself visually in lines, bifurcation, and arborescence.

The graphical epistemology of Max/MSP favors a chain of events moving top-to-bottom, left-to-right. Furthermore, it is intrinsic to digital systems that a curve can only be approximated, albeit at a very fine level of detail. But by creating feedback, looping back to the top, and employing iterative process, the programming space can be bent, creating the convincing perception of a curve. The opposite of projecting the surface of the earth onto a flat map, the translation between digital and analog space is bound up in refining approximations to the point where they are experienced as a continuous curve in four dimensions.

### *Curves*

The interplay of line and curve informs Frank Gehry’s design of Edgemar and is a defining feature of his style. As you walk in from the street Edgemar’s Courtyard is limned by the counterpoint between a straight line on the right side and a curve on the left. The dynamic tension is heightened by the unexpected use of materials: in the fountain, water is confined to a flat, stepped volume while steel is allowed a more fluid expression. Clearly, a sonic impression of this space must acknowledge these elements.

Other curves become apparent through observation of the space in use. The course of the day – the solar curve – brings different energies into the space, beginning with a morning rush for coffee and ending with an evening of dinner and theatre. All of these are defined sonically by the coming and going of busses, the clink of silverware and glasses, and the ebb and flow of conversation. While a single day might be thought of as linear, this line becomes a spiral when it is projected through time.

Moreover, this solar spiral is a fractal formation, filigreed by countless smaller events throughout the day.

Perhaps the most subtle curve at Edgemar is the lunar curve, made apparent by the ocean’s tidal cycle. This curve is nuanced by its relationship with the solar curve. While the tides happen at different moments every day, their magnitude is a function of the relationship between the sun, moon, and earth. Awareness of these curves has been programmed into *Listen Edgemar*, acoustically highlighting the fundamental interplay of curve and line.

### *Spirals*

Representing the architectural and psychological juxtaposition of lines and curves was the primary concern throughout the process of deciding where to install the loudspeakers. Electroacoustic music (and to some extent cinematic surround sound systems) favor circular arrays. Although we considered a similar setup, it quickly became apparent that a generalized approach to sound diffusion would be inappropriate for a site-specific piece, especially given that the audience would move through the sonic environment at a variety of trajectories. After experimenting with many geometric shapes, we decided that the best idea was to mirror objects in the built environment, as well as the pattern of people’s movement through that environment.

The street entrance to Edgemar is dominated by two sweeping curves that lead one into the courtyard. There, one encounters a rectilinear fountain almost 10 meters long. There are also vortexes of movement in the courtyard, around the café during the day and into the theatre and restraint in the evening. Each of these features has its subterranean counterpart in the sound installation below. In one end of the garage, a line of speakers literally represents the fountain; the length is

the same and sound shimmers there quietly throughout the day. Two sweeping arcs of speakers mirror the walls above, and a vortex surrounds the elevator. When the elevator is in motion, that vortex becomes alive, moving from synthesized sound to recordings of live musician. Its harmony is derived from a spectral analysis of the sound of the fountain's pump (which is housed in a nearby closet).

It is through the instantiation over time that sounds ultimately move in a spirally oriented space. The interplay of different paths creates a world of sound that makes manifest singular moments of extreme detail and musical gestures that breath over months and years. Each day, the high tide washes in new pieces of "driftwood" from a library of thousands sonic events. These events were either recorded at Edgemar, or represent musician's<sup>6</sup> responses to the on site recordings. The low tide washes away old events. While active, each piece of driftwood has its own rhythmic and spatial trajectory, creating a rich polyphony of spinning sounds. One-time visitors to Edgemar will experience a glimpse of this spiral world, while frequent guest can start to perceive the shape of the piece over time.

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## Notes

<sup>1</sup> <http://www.cycling74.com/>

<sup>2</sup> Schenker, Heinrich, Ernst Oster, and Oswald Jonas. *Free Composition = (Der Freie Satz) : Volume Iii of New Musical Theories and Fantasies, Longman Music Series*. New York: Longman, 1979.

<sup>3</sup> Cage, John. *Silence : Lectures and Writings*. Middletown, Conn.: Wesleyan University Press, 1973.

<sup>4</sup> <http://www.lowercasesound.com/>

<sup>5</sup> Schafer, R. Murray. *The New Soundscape : A Handbook for the Modern Music Teacher*. Don Milles, Ont.: BMI Canada Ltd., 1969.

<sup>6</sup> Curently: Jessica Catron (cello), Jeremy Drake (prepared guitar), Phil Gelb (shakuhacki), Vinny Golia (flutes and single reeds), Paul Livingston (sitar), and Pauline Oliveros (just-intonation accordion)