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Sound Art at MASS MoCA

In Your Ear: Hearing Art in the 21st Century

Over the past century, an artform has emerged between the realms of visual art and music. Created by both composers and sculptors, 'sound art' challenges fundamental divisions between these two sister arts and may be found in museums, festivals, or public sites. Works of sound art play on the fringes of our often-unconscious aural experience of a world dominated by the visual. This work addresses our ears in surprising ways: it is not strictly music, or noise, or speech, or any sound found in nature, but often includes, combines, and transforms elements of all of these. Sound art sculpts sound in space and time, reacts to environments and reshapes them, and frames ambient "found" sound, altering our concepts of space, time, music, and noise.

Sound art's redefinition of artistic space and time -- focusing our attention and changing our perception of particular moments through sound -- is often accomplished through the incorporation of new technologies. Technological advances at the turn of the 20th century provided both the fundamental tools of sound art (such as the radio and phonograph) and the modern concept of noise, which arose in tandem with the machine age. Indeed, the roots of sound art can be traced to that time, when new sounds and mechanical devices radically expanded possibilities in the visual arts and music.

When futurist Luigi Russolo, perhaps the first sound artist, published his manifesto *L'arte dei Rumori* (The Art of Noises) in 1913, he envisioned "entire symphonies composed of the sounds of everyday life," including "...the muttering of motors that breathe and pulse with an undeniable animality, the throbbing of valves, the bustle of pistons, the shrieks of power saws, the starting of a streetcar on the tracks, the cracking of whips, the flapping of awnings and flags."

To capture the quality of these sounds, Russolo invented *intonarumori* (noise instruments) which could produce many synthesized timbres over a range of pitches. A modern descendent of the *intonarumori* may be found on the Route 2 overpass near MASS MoCA, where Bruce Odland and Sam Auinger have placed a "tuning tube," part of their Harmonic Bridge installation. This tube collects harmonic strains of traffic noise that are sent to speakers beneath the bridge.

In the field of music, the composer Edgar Varèse attempted the "liberation of sound" in his compositions. His unrealized symphony *Espace*, begun in 1929, would have incorporated "voices in the sky, as though magic, invisible hands turning on and off the knobs of fantastic radios..." Varèse had imagined a performance of the work being broadcast simultaneously in all the capitals of the world. Varèse's works, like those of Walter Fährdrich, whose *Music for a Quarry* is located in the Natural Bridge State Park in North Adams, occupy the liminal space between modern music and sound art. Fährdrich describes his work as music, but music "created for particular spaces and times of day," qualities it shares with sound art.

Sound became a fundamental element of modern art in the work of the Dadaists during the 1910s. Marcel Duchamp's visual and conceptual art, for example, often involved sound. He proposed that "a line of identical sounds could turn around the listener in arabesques (on the right, left, over, under)," creating, for example, "an immense Venus de Milo made of sounds around the listener." Duchamp had a significant impact on the generation of conceptual artists working in the 1960s and '70s, many of whom used sound and referred to their work as 'sound sculpture.'

Hugo Ball, founder of the Dada movement in Zurich, created the poème simulatane, or simultaneous poem, first presented at the Cabaret Voltaire in 1916 with "a high-energy, performance-oriented cacophony of whistling, sighing, grunting, coughing, and singing." His Russian counterparts, such as Wassily Kandinsky and Aleksandr Scriabin, explored similar topics, such as links between visual and aural perception. Following the Bolshevik Revolution, Russian artist Arseni Avraamov directed several monumental sound spectacles in its commemoration. Performed for the fifth anniversary of the Soviet Republic, his Symphony of Factory Sirens contained "a huge cast of choirs (joined by spectators), the foghorns of the entire Caspian flotilla, two batteries of artillery guns, a number of full infantry regiments (including a machine-gun division), hydroplanes, and all the factory sirens of [the port-town of] Baku."

American composer, artist, and philosopher John Cage was undoubtedly the central figure in the redefinition of sound from the 1950s to the present. His questioning of cultural and artistic practices largely determined the direction of contemporary sound art, temporally and conceptually bridging that of the Futurists and Dadaists working in the 1910s and '20s and that of artists working today. While artists working in the early twentieth century generally reveled in the new, harsh noises of industry and machinery, Cage and many later artists listened for the subtle harmonies that were generated by chance in the natural and built environment. In his "silent" piece 4'33", created in 1952, a performer sits at a piano for four minutes and thirty-three seconds without producing a sound, simply turning the pages of the score and closing and opening the piano lid to indicate the three 'movements' of the piece. Chance determined ambient sound (the coughing of the audience, the rustling of programs, and creaking of chairs, for example) becomes the music. Christina Kubisch's Clocktower Project, drawing from this tradition, also relies on chance: the position and intensity of the sun, mediated by a computer program, determine the sequencing of tones in the compositions; a passing cloud changes everything.

In recent years, festivals in the United States, Japan, Austria, and Germany have highlighted the multifariousness of current sound art practice. MASS MoCA's 1998 Earmarks exhibition of seven sound art installations was one of the largest yet held on the East Coast. The field of sound art has remained a fertile one, in part because constant technological innovation -- now, as at the beginning of the 20th century -- provides new tools and new concepts of sound to those with ears to hear them.



Ronald J. Kuivila

American, born 1955

Visitations (1999)

Located in Cinema Courtyard C, directly behind the information/ticket desk in our lobby.

The industrial complex now occupied by MASS MoCA has lain fallow since 1986 when employees of Sprague Electric vacated it. These people once filled the buildings with sounds of industry, conversation, joking, and complaining - in other words, the "voice" of the now quiet company. Charles Babbage, the father of the digital computer, conceived of sounds as immortal, diminishing in volume but eternally reverberating within the space where they were made. This notion inspired sound artist Ron Kuivila to undertake an imaginary excavation of the "voice" of Sprague Electric in *Visitations*. "The history of a place is hidden," he says, "in the gentle murmur of its room tone - a din too soft and too subtle to discern with the human ear."

The relationship of space and place to sound is the common denominator of Kuivila's work, a relationship manifested in *Visitations* through the incorporation of layered visual components within the former Sprague machine shop. At select windows of the shop the viewer sees a number of commemorative Sprague "5 Year Pins," awarded to employees for accumulated service time.

Simple rotary motors, powered by capacitors much like those manufactured in Sprague's heyday and accompanied by empty chairs, spin in the middle ground. Finally, orderly regiments of over 4,000 capacitors, standing in for the number of individuals employed by Sprague at its peak, are placed on long workbenches that form a spine down the center of the room. This pastiche echoes Kuivila's layered soundscape emanating from the walls outside.

Visitations' sonic component is comprised of oral interviews, readings, radio broadcasts, Sprague advertising video soundtracks, found industrial sounds, and computer generated noises. Through the incorporation of living memory and voices, however, *Visitations* illustrates the influence of John Cage's modern musical theory. Cage's work has been described as acknowledging the "fact that we don't live our lives in orderly tenses or monotonic modes. We live in messy conversation located at lively intersections of present, past, and future." *Visitations* embodies this sentiment, incorporating Cagean interest in the contribution of random and unrehearsed circumstances to the evolution and completion of a work of art.

Visitations mines memory for its source material. This fact, coupled with the difficulty inherent in navigating the past through oral history, is central to the organization of its "narrative." Through the tradition of oral history, people, knowingly or not, recreate and reshape their own and others' histories. *Visitations* offers a glimpse of the complex relationships among the past and present incarnations of the buildings on the MASS MoCA campus.

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Bruce Odland and Sam Auinger

Harmonic Bridge (1998)

Bruce Odland: American, born 1952 Sam Auinger: Austrian, born 1956

Plays constantly from 8am to 10pm at the Route 2 underpass on Marshall Street in the southeast corner of MASS MoCA's main parking lot.

In the MASS MoCA portion of this multi-part project, *Harmonic Bridge*, low sounds roll and drone under the Route 2 overpass half a block from MASS MoCA. Entering the space under the bridge, one becomes aware of a turning eddy of sound in the midst of intersecting streams of traffic. Cars pass by heading north or south on Marshall Street and east or west on the Route 2 bridge, but this linear motion is counterpoised by a rolling, humming C as calming as the rhythm of ocean waves. Although cars stream by, pedestrians lose the impetus to move forward, derailed by this cool pool of sound with its mysterious, chant-like hum. *Harmonic Bridge* presents an aural cross-section of North Adams, a slice of the city in the key of C, comprised of the fundamental note and its overtone series.

To produce these rolling tones, the artists affixed two 16-foot tuning tubes to the guardrail on the north side of the bridge on either side of the overpass. The length of the tubes determines the fundamental tone: a sound wave at such a low pitch is 16 feet long and must be generated (whether for sound art or a pipe organ) with a 16 foot tube. Inside each tube, a microphone is placed at a certain harmonic interval (the 5th in one tube, the 4th

in the other). These locations emphasize the harmonic and give a slightly different timbre to the two Cs. (The difference in timbre between the two tuning tubes is analogous to the difference in timbre between a cello and a violin playing the same note: though the pitch is the same, the sound is slightly different).

As traffic passes by, its noise generates a sympathetic resonance in the columns of air inside the tubes. High-pitched sirens and even voices generate higher harmonics, while the low rumble of trucks creates low ones. The sound is carried from the microphones in the tubes to a control room, where the sound signal is then amplified and transmitted to the concrete cube speakers under the bridge. There are no electronic effects added. The sounds have been simply extracted from the traffic noise above, as one might extract precious metal from a baser substance. The pedestrian hears one tuned layer of city sounds, and strains to separate the harmony from the traffic on Marshall Street. The work requires that we focus our ears on it, and we walk away from the experience as the composer John Cage would have us: hearing music everywhere. The bridge becomes an instrument played by the city revealing hidden harmonies within the built environment.

The only visible elements placed under the bridge by Odland and Auinger are the two concrete cube speakers. They are simple cubes, undecorated save a small tire imprint that suggests the connection between the sound and the traffic. Yet the space there is visually transformed by the harmonies. The sound focuses one's attention on the majestic columns, the elegant proportions, and grand scale of the area, which, combined with the droning, somehow sacral tones, brings to mind a gothic nave. The speakers themselves offer places to sit while listening to the bridge and provide a pleasant respite. Once an imposing barrier between Main Street and the museum, the underpass is transformed into a resonating sonic gateway.

Sam Auinger and Bruce Odland have extracted harmonies from everyday spaces since 1987. They have found rich resonance in an old traffic tunnel in Strasbourg, a Roman amphora in the Forum, and the West Side Highway in New York. Their collaborative works tune public spaces, sifting through noises and isolating harmonies in found sound. Photo: Nicholas Whitman

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Christina Kubisch

German, born 1948

The Clocktower Project (1997)

Can be heard from sunrise to sunset at MASS MoCA; the brighter the sun, the stronger the sound

The comparison of a city's clock to a person's heart, though it has been made countless times, remains evocative. When Christina Kubisch first visited MASS MoCA in 1996, she was moved by the fact that the century-old factory clock had not kept time, nor had its bells rung, since 1986, when the Sprague Electric Company vacated the 13-acre site. This 19th-century clock, located in an eighty-foot tower with a 750-pound and a 1,000-pound bell, had set the rhythm of the workday in North Adams since 1895, ringing every quarter hour. Now those bells and beautiful brass clockworks share the tower with components of *The Clocktower*

Project: solar panels, electronic sound system, and a computer with Kubisch's unique program on its flash disc.

Kubisch felt that the loss of these bell sounds could be as keenly felt as the loss of an important local building. With this in mind, she undertook to restore the clock in a way that would also mark the arrival of contemporary art in the city. A classically trained musician and professor of experimental art, Kubisch began playing the bells like musical instruments, ringing them with their clappers as well as hammering, brushing, and striking them with her hands and various tools. She recorded the bell tone database with a digital audio recorder.

Kubisch then placed small solar sensors in a band encircling the tower just under the bell window. The sensors relay information about the intensity and location of the sun to a computer inside the tower. A unique software program, designed for this project by Berlin engineer Manfred Fox, interprets the solar information and combines Kubisch's pre-recorded bell sounds in response to light conditions. Thus, a sunny summer morning generates loud, distinct, metallic tones, while a gray afternoon in winter brings about softer, somewhat melancholy sounds. At noon and 5pm, the computer plays a short pre-set concert, but at other times the brief compositions change with the quality of light and time of day. This use of unpredictable changes in the weather, coupled with an algorithmic function in the program that prevents the mini-compositions from repeating, marks the influence of the American composer and artist John Cage on Kubisch's work. The fading daylight, registered by the solar panels, causes *The Clocktower Project* to fall silent in the evenings. At the same time, the four faces of the clock begin to glow faintly and remain illuminated through the night. Kubisch coated the 4'-diameter clock faces with a phosphorescent paint and placed black lights behind the faces. The cool blue-white light quietly marks the transformation of the tower when the bell sounds have ceased.

Since 1991, Kubisch has made a number of hauntingly beautiful synaesthetic works, culminating in *The Clocktower Project*, that allow her audience to "hear the light." Many of her recent installations have focused on the transformation of light into sound using solar panels and ultrasonic devices. Kubisch's thoughtful investigation of the historical sound character of the MASS MoCA site, and creation of a complex, technology-rich work, typifies MASS MoCA's symbiotic approach to site-specific art. photo: Ben Garver

The Clocktower Installation and Restoration Project was made possible by the generosity of the Clark Art Institute in support of the Williams Graduate Program in the History of Art, the Goethe-Institut Boston, Mary and Henry Flynt, and Solarex.

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Walter Fähndrich

Swiss, born 1944

Music for a Quarry (1999),

Requires a 1/4 mile walk from the [Natural Bridge State Park](#) parking lot in North Adams; plays daily just after sunset

In *Music for a Quarry*, clear tones call across the natural amphitheater of the Hoosac Marble Quarry from ten speakers,

equally spaced along its circumference, for fifteen minutes of twilight every evening. Working with the latitude and longitude of the quarry, a computer program begins the music at the same solar time (rather than clock time) each night. The start time (near 8 or 9 pm in summer, near 4 pm at the winter solstice) changes as the spatial relationship between the earth and sun changes. The first tone appears at the precise moment of astronomical sunset, a moment that is both permanently fixed and changing daily. During this fifteen-minute period, the burden of comprehending the physical space shifts slowly from the eye to the ear as the sounds are traced to their sources.

Walter Fähndrich has made *Musik für Räume* (Music for Spaces) in Switzerland, Austria, Germany, France, and the Netherlands, though *Music for a Quarry* is his only work in America. At each site, whether a Gothic church, art gallery, or outdoor space, he seeks to create and introduce sounds that rely on the inherent acoustic qualities of the spaces, such as the clear echoes and fractured surfaces in the Hoosac Marble Quarry. Photo: Nicholas Whitman

Music for a Quarry received generous support from the Zuger Kulturstiftung Landis & Gyr, the Sterling and Francine Clark Art Institute, the Canton of Zug, Bank Leu AG, the Swiss Center Foundation, the City of Zug, the Emil and Rosa Richterich-Beck Foundation, Pro Helvetia (The Arts Council of Switzerland), and Drs. H. and H. Medicus.

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