In Your Ear: hearing art in the twenty-first century

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Over the past century, an art form has emerged between the realms of visual art and music. Created by 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.

1. INTRODUCTION

This essay recounts historical perspectives and concrete works, and discusses the engagement of one institution, MASS MoCA, with sound art from an aesthetic and practical position. Finally, it describes the four permanent, site-specific works of sound art in MASS MoCA's collection.

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 twentieth 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.

2. EARLY HISTORY OF SOUND ART

When futurist Luigi Russolo, perhaps the first sound artist, published his manifesto *L'arte dei Rumori* (The Art of Noises) in 1913, he envisioned huge musical works made from mechanical sounds of everyday life – revving motors, valves opening and closing, moving pistons, power saws and streetcars, as well as other types of noises, like cracking whips and sounds from flags flapping in the wind, etc.

To capture the quality of these sounds, Russolo invented *intonarumori* (noise instruments) that mechanically produce many timbres over a range of pitches. A modern descendant 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, and his works, like those of Walter Fähndrich, 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. Fähndrich describes his work as music 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 envisioned lines of sounds turning around the listener like arabesques – sound sculpting in space – today realised through multi-channel techniques and diffusion. Duchamp had a significant impact on the generation of conceptual artists working in the 1960s and 1970s, 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 simultane*, or simultaneous poem, first presented at the Cabaret Voltaire in 1916, as a high-energy cacophony utilising whistling, sighing, grunting and coughing, among other 'extended techniques'. 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, soldiers and spectators, navy foghorns, artillery guns, airplanes and factory sirens.

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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 1920s and that of artists working today. While artists working in the early twentieth century generally revelled 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 *42 333*, 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 programmes 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.

3. THE MASS MOCA *EARMARKS* EXHIBITION

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 twentieth century – provides new tools and new concepts of sound to those with ears to hear them.

Sound art, strangely, constitutes MASS MoCA's *entire* collection; the museum is a *Kunsthalle* and stages long-term special exhibitions. As noted above, its commitment to sound art began in 1998 with a major exhibition called *Earmarks* of seven site-specific sound art pieces installed throughout North Adams and its neighbouring city, Williamstown, one of which remains. The experience of commissioning and attending to these works has been a revealing one for me, their curator. Not every work of sound art is appropriate to a public space. When a work of art is installed in a gallery, the people who experience it have made a choice to do so. In this context, a work can be as dulcet or ferocious as its maker and curator may choose. By ferocious, I mean grating, loud, harsh, dark, even annoying or deliberately offensive. Such a work cannot be exhibited in a public place in good conscience, with any hope of being invited back. The sonic equivalent of Richard Serra's famous *Tilted Arc*, which was installed in a public space in New York, only to be adamantly rejected by the daily users of the space and removed, is not a good candidate. Pedestrians may avert their eyes from a work of visual art that offends them, but it is impossible to avert your ears. In my experience, sound, more than any other media, is invasive and inescapable. For it to be installed in public for any length of time – two months in the case of *Earmarks* – it must have good manners. I do not mean to imply that sound art should be insipid, only that it not be so deliberately hard to listen to that it alienates or angers all who come in contact with it.

Sound art in public spaces must also be robust. Sound art often pushes its technology to the limit, and so it is likely that it will fail to function properly at some point during its tenure. This is a normal part of the process. What happens when it fails? Does it simply fall silent, or does it emit a loud, high-pitched, non-stop screech evocative of alien invasions in science fiction movies? One of MASS MoCA's early sound art commissions did just that and was located across the street from the rectory of a nearby Catholic Church. The elderly priest who lived there, named – I kid you not – Father O'Hear, accused me of actively trying to kill him. This bracing experience did not keep me from commissioning another work from the artist, however. The curator who would install sound art in a public place must accept the inherent risks of new technology and prepare for its constant maintenance, as well as the many rewards that experiencing such work provides.

4. RONALD KUIVILA'S *VISITATIONS*, 1999

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 of history hidden in the gentle murmur of spaces – a din often too soft and too subtle to discern with the human ear – inspired sound artist Ron Kuivila to undertake an imaginary excavation of the 'voice' of Sprague Electric in his work *Visitations*.

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

Figure 1. Kuivila, *Visitations.*

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 centre 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. *Visitations* embodies an idea of life not being lived in monotonic modes, but rather existing in a messy conversation at the intersection of present, past and future. This sentiment incorporates 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 organisation 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.

5. BRUCE ODLAND AND SAM AUINGER'S *HARMONIC BRIDGE*, 1998

In the MASS MoCA portion of this multi-part project, *Harmonic Bridge*, low sounds roll and drone

Figure 2. Route 2 overpass, near MASS MoCA.

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 emphasise 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 tyre 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.

6. CHRISTINA KUBISCH'S *CLOCKTOWER PROJECT*, 1997

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

Figure 3. Loudspeaker casing, *Harmonic Bridge.*

had its bells rung, since 1986, when the Sprague Electric Company (http://www.massmoca.org/about.html #history) vacated the 13-acre site. This nineteenth-century clock, located in an 80-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 grey afternoon in winter brings about softer, somewhat melancholic sounds. At noon and 5 p.m., 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 42 -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.

7. WALTER FAHNDRICH'S *MUSIC FOR A QUARRY*, 1999

In *Music for a Quarry*, clear tones call across the natural amphitheatre of the Hoosac Marble Quarry from ten speakers, equally spaced along its

Figure 4. Christina Kubisch's *Clocktower Project*.

Figure 5. Location for *Music for a Quarry.*

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 p.m. in summer, near 4 p.m. 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.