ROLF JULIUS
Music for the Eyes, 2003.
Installation at Frac
Limousin, Limoges, France.

What is Sound Art?

SOUND ART AS A TERM

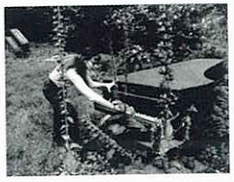
Sound art is a term that has been used with increasing frequency since the late 1990s but with precious little in the way of an accompanying, agreed-upon definition. As with many art movements, some of sound art's chief practitioners, who predate the appellation "sound art," are mistrustful of the term itself. What follows are three considerations of the term by three artists who take sound as their primary medium: Annea Lockwood and Max Neuhaus, who have been exploring sound as a natural element and new form of composition away from the concert hall and even instrumentation since the '60s, and an artist who has blurred the lines between the art world and music world over the past twenty-five years—Christian Marclay. That none of them seem to endorse the term is illuminating; while artists frequently resist critical categorization, in this case, it also pinpoints the confusion over what—and whom—"sound art" really refers to.

Sound art. I find it a useful term, but why? I apply it to the pieces I make using electroacoustic resources, and which I intend to be presented in galleries, museums, other places in which sound is, increasingly, conceived of as a medium per se, like video, lasers, but not as performance. For example, I'm currently working on a large audio installation, *A Sound Map of the Danube,* which I think of as Sound Art. I also recently finished a commission for the All-Stars band, which it wouldn't cross my mind to call "sound art." That's the big difference for me, between music and sound art. There's some distinction to do with the conceptual, also. I think maybe what's termed "Sound Art" doesn't intend connection to the linguistic. Eventually, all styles of performance music become languages, even [John] Cage's antilinguistic works, as people become more and more familiar with his intentions and sound worlds. Nevertheless, perhaps the term was pragmatically conjured up for/by museum curators to account for sound's acceptance into their world.[1]

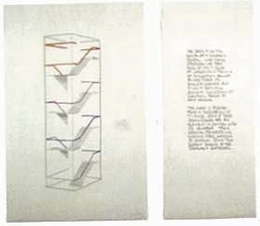
—ANNEA LOCKWOOD

When faced with musical conservatism at the beginning of the last century, the composer Edgard Varèse responded by proposing to broaden the definition of music to include all organized sound. John Cage went further and included silence. Now even in the aftermath of the timid "forever Mozart decades" in music, our response surely cannot be to put our heads in the sand and call what is essentially new music something else—"Sound Art" . . . If there is a valid reason for classifying and naming things in culture, certainly it is for the refinement of distinctions. Aesthetic experience lies in the area of fine distinctions, not the destruction of distinctions for promotion of activities with their least common denominator, in this case, sound. Much of what has been called "Sound Art" has not much to do with either sound or art.[2]

—MAX NEUHAUS



LOCKWOOD
Piano Garden



NEUHAUS
Southwest Stairwell

Well, I think it's great that there is this interest in sound and music, but the overall art-world structures are not yet ready for that, because sound requires different technology and different architecture to be presented. We still think of museum galleries as nineteenth-century galleries, like "How do we hang this on the wall, how do we light it?" But nobody knows anything about sound—how you hang a speaker, how you EQ it to the room. There isn't that kind of knowledge and expertise within the museum world. More and more museums have a lounge-type listening room, but there are still a lot of changes that need to happen before the art world is ready to present sound as art. And, you know, it doesn't matter because there are so many ways for people to enjoy sound these days. Sound is so easily diffused, spread around through the internet, downloaded to portable MP3 players and Walkmans, you name it. Everything is so portable and so easy to share that you don't need an art institution to tell people what to listen to. I think it is in sound's nature to be free and uncontrollable and to go through the cracks and to go places where it's not supposed to go.[3]

—CHRISTIAN MARCLAY

The term sound art was coined by Canadian composer/audio artist Dan Lander in the mid-1980s, although William Hellermann's Sound Art Foundation predates this by a few years[4]; however, that seems to have been another way of saying "new music" or "experimental music." A rash of high profile exhibitions at the turn of the century brought the term to greater familiarity while causing a lot of confusion as to what it actually referred to. *Sonic Process: A New Geography of Sounds* (Museu d'Art Contemporani de Barcelona, 2002) and *Bitstreams* (Whitney Museum of American Art, New York, 2001) dealt specifically with interfaces between digital art and electronic music and included electronic musicians like Coldcut or Matmos and experimental musicians like Elliott Sharp, Andrea Parkins, and David

Shea; *Sonic Boom* (Hayward Gallery, London, 2000) likewise featured '90s electronic group PanSonic alongside veteran sound sculptors like Max Eastley and Stephan von Heune and sound installationists/recording artists Brian Eno, Paul Schutze, and Thomas Koner. The sound component to the Whitney's survey of modern American art, *American Century,* was called *I Am Sitting in a Room* and mostly consisted of recordings of experimental music works by composers, despite the subtitle of *Sound Works by American Artists 1950–2000. Volume: Bed of Sound* (P.S. 1, New York, 2000) similarly functioned as a survey of experimental music, rather than sound art; unfortunately presented to listeners on CD players with headphones or competing with each other in a large space, it managed to include some bona fide sound artists (Neuhaus, Ben Rubin) but also threw in experimental pop and rock groups (Cibo Matto, Sonic Youth, the Residents, Yamataka Eye), experimental/electronic composers (David Behrman, Joel Chadabe, Tod Dockstader), free-jazz composers (Butch Morris, Ornette Coleman, Muhal Richard Abrahams), and rock stars like Lou Reed (who deserves some recognition as an experimental musician but should not be considered a sound artist).

None of these exhibitions purported to be an exhibition of sound art per se, but as a result, there has been a tendency to apply the term "sound art" to any experimental music of the second half of the twentieth century, particularly to John Cage and his descendents. Cage himself redefined music as "an organization of sound" rather than a composition of melody and harmony, but what is more important is his contention that music is everywhere, in all sounds—that all sounds can be music. His statement can be taken two ways—that all sounds can be listened to as music or that they can be used as musical material by composers. Therefore, he is still thinking in terms of music, itself already an established art form, with sound as a potential tool for composition as opposed to another art medium in and of itself. Sound art has also been applied retroactively to noise music, sampling, and various forms of musical collage. The use of concerts and performance delin-

ENO
Glint

CAGE
Cartridge Music

eates these genres as music (i.e., time-based) rather than sound art, although noise in particular may come under the heading of "sound by artists" given the tradition of noise-making by the Dadaists as an extension of their visual and literary activities. As Michael J. Schumacher put it, "Looking at a pair of speakers on a stage totally undermines appreciation of the work"—sound art is not about a stage show.

Calling oneself a "sound artist" lends a certain legitimacy that "experimental musician" may not have. Even the term "experimental," in many people's minds, may have some psychological indication that the musician may not know what they're doing (or that the listener can't understand what they're doing), which, however erroneous and unfair, still strikes an unwanted undertone of semiprofessionalism as a calling card.

Music, like drama, sets up a series of conflicts and resolutions, either on a large or small scale (it can be as small as a chord progression resolving to the tonic chord or as large as a symphonic work that adheres to the narrative arc complete with exposition, climax, denouement, and coda). A friend recently commented that avant-garde art is now commercially viable and extremely successful, whereas avant-garde literature, music, and film are usually uncommercial and generally unsuccessful. He's right, but that is because art doesn't have the inherent entertainment value of a narrative that those other art forms have. It doesn't have to appeal to the masses to be successful—as long as it catches one collector's (or curator's) attention, the person who created it can make a fair amount of money from it. Literature, music, and film, however, depend on popular opinion and public demand. This is because they're the primary sources of entertainment besides sports. And *that* is because of the potential to be engrossed by a storyline and characters, dazzled by spectacle, or have a catchy tune stuck in your head all day. If an effort in any of these disciplines fails to live up to this potential, it's largely considered to be a disappointment; in fact, it's *intrinsically* disappointing regardless of its actual aesthetic worth. Part of the reason "sound art" has become such a popular term

NEUHAUS
Listen

is because it rescues music from this fate by aligning this kind of sound work with the aims of non-time-based plastic arts, rather than the aims of music.

Sound art belongs in an exhibition situation rather than a performance situation—that is, I would maintain, a necessary correlative in defining the term (although one could point to Indian sand paintings, which are erased after a day, as an example of artwork whose rejection of permanence is similar to live music performance). Music, especially pop music, unlike sound art, is like an amusement park ride: there's a beginning, middle, and an end to it; it's a short, consolidated experience of thrills and chills that can be readily reexperienced by simply going on the ride again, listening to the song again. Sound art, besides its intended connotation of (or literal inducement of) a trip to a gallery or a museum, can also be like a trip to the zoo, the dog pound, the park, the moon, or to your fridge, depending on its (or one's) orientation.

Sound art rarely attempts to create a portrait or capture the soul of a human being, or express something about the interaction of human beings—its main concern is sound as a phenomenon of nature and/or technology (this is yet another factor in its lack of mass appeal). Even sound poetry, which is sometimes classified as sound art, is bent on exploding language and exploring the varieties of vocal sound that can be produced by the human body rather than using the voice to communicate to the listener in the usual fashion. Only as the visual arts became increasingly abstract would the idea of sound art, as opposed to music, find fertile ground.

VISUAL VS. AURAL/SOUND VS. SILENCE

> "The sense of hearing cannot be turned off at will. There are no earlids."
>
> —R. MURRAY SCHAFER

While it may be true that we gather the majority of our information visually, and that we are more responsive to visual than aural stimuli, as light is

faster than sound (even Varèse admitted that "Art means keeping up with the speed of light"), it's equally true that no one is comfortable with silence any more than they're comfortable with darkness.[5] Both visual and aural information are not only essential to survival in any environment, to hear something that may be unseen and pose a threat, but sound can also indicate aliveness, even to an anthropomorphic degree. Sound also connotes companionship; part of the appeal of radio and records is simply that a voice is speaking or singing to the audient and engaging them in some way. Likewise ambient sounds remind the listener of his own presence in a living world, rather than an empty void. Even when reading, we "hear" in our heads, our own voice reciting the words, or if we're feeling particularly imaginative, another voice takes on the narrative. And we're always trying to find something to look at when faced with a sound that has no visual counterpart—no one listens to the radio in the dark, or closes their eyes when they're on the telephone. Look around: people driving with the radio on, walking around with headphones plugged into a Walkman or an I-Pod, creating their own soundtrack of prerecorded sound to replace the ambient sound that reality is surrounding them with.[6] I distinctly remember once putting on Steve Reich's *Music for 18 Musicians* at a particularly scenic highway expanse in Oregon because I knew the music would go well with the landscape and the speed of the van we were traveling in. Of course, there's a kind of layering of sound going on, as the sounds of civilization that a Walkman or an I-Pod are drowning out are already drowning out a natural soundscape that has been paved over. Muzak once served this purpose, reducing popular tunes to a generic instrumental common denominator that would soothe but not distract with the force of human expression or personality; often called aural wallpaper, calling it "aural air freshener" would be more appropriate since it masks either unwanted sounds or silence.

While visiting a museum, painting or sculpture is traditionally intended to inspire quiet contemplation; however, audio tours provide an aural guide

JULIUS
Music for the Eyes

even though most artworks are labeled with relevant information and background. Ed Osborn has started a website called Audio Recordings of Great Works of Art (www.auralaura.com) in which he records the sounds made by visitors to household-name sculptures and paintings in museums around the world (the Venus de Milo, the Mona Lisa, etc.). And conceptual artist Lawrence Wiener has commented:

> When you look at a painting in a gallery you hear somebody talk behind you about their feet hurting. You hear all the noises around you. You start to talk to other people and that is how you see art. So why not hear it as well as see it all at the same time? But it is not a *Gesamtkunstwerk*. Everything is moving along at the same time. They are all growing. There is not one dominant.[7]

Visiting a sound art installation also requires quiet contemplation to allow for listening, but it doesn't always escape music's identity as a time-based art. As is the case with much video art (some of the early Bruce Nauman video pieces, like *Clown Torture,* come to mind), many sound artworks are one-liners. Too often an electronic signal is set up by a chain of effects and left to run in a room on its own, and the result is merely decorative. In this sense the nonperformative aspect of sound art makes it challenging to sell to the viewer or, to hold the viewer's attention because the gallery setting makes it easy for someone to just drift in and out, the way they would take a quick look to see if a painting or sculpture catches their eye, and then move on to the next location.

Sound art, then, rejects music's potential to compete with other time-based and narrative-driven art forms and addresses a basic human craving for sound. For the purposes of this study, we can define sound art in three categories:

1. An installed sound environment that is defined by the space (and/or acoustic space) rather than time and can be exhibited as a visual artwork would be.

RODEN
Fulgurites

VITIELLO
Fear of High Places and Natural Things

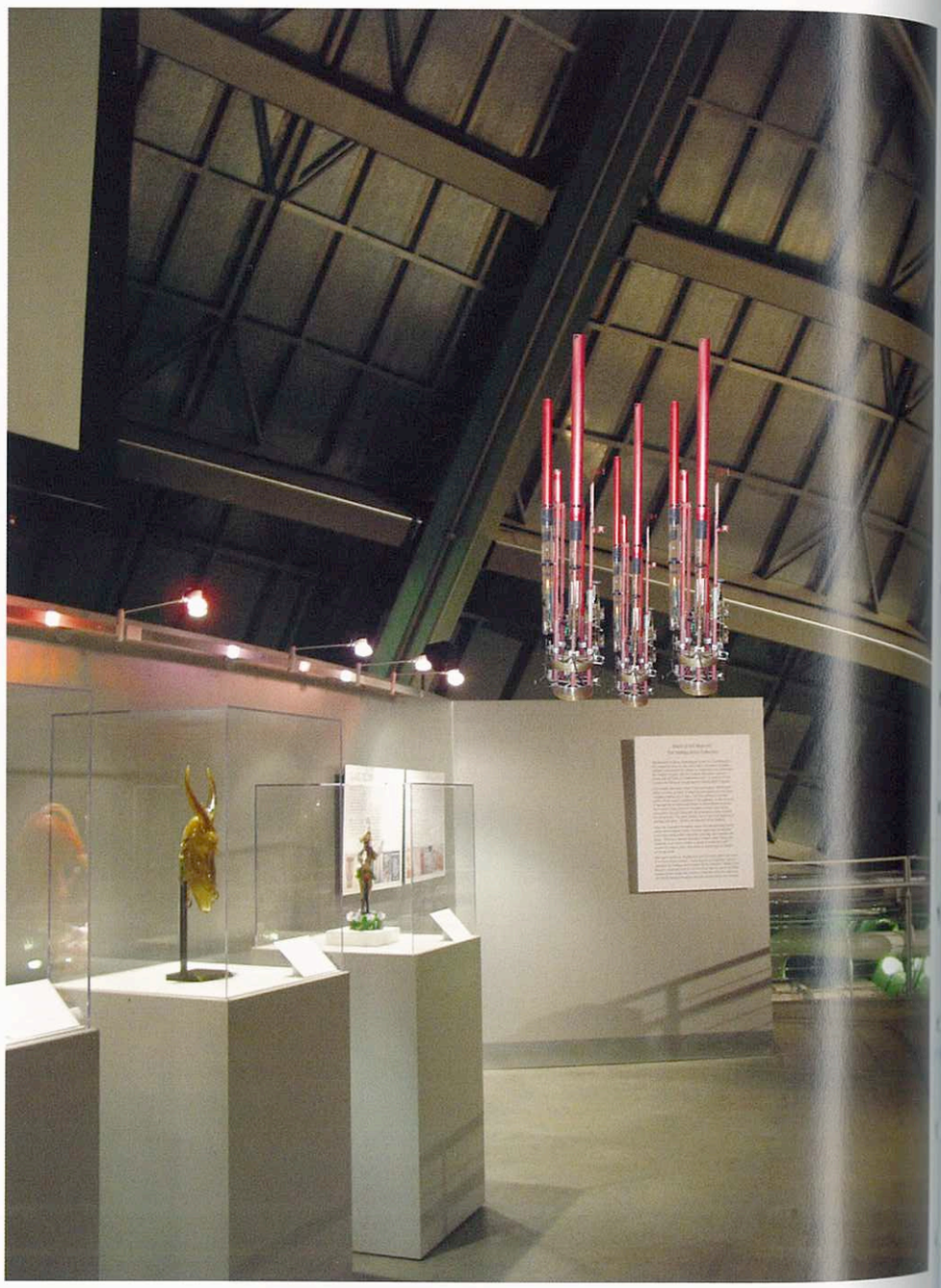
2. A visual artwork that also has a sound-producing function, such as sound sculpture.
3. Sound by visual artists that serves as an extension of the artist's particular aesthetic, generally expressed in other media.

The Origins of Sound Art in the Disjunction of Sound and Image

Centuries ago, sound mixed with visual art in the church. As Don Goddard has written, "motets, oratios, cantatas, requiems, fresco cycles, and altarpieces intoned or depicted the same subject matter, while architecture provided vaulted spaces for the acoustics and illusions of music, painting, and sculpture."[8] With the advent of the concert hall in the nineteenth century and the growth of cities and secular thought, the arts began to disperse from this meeting ground.

Music and movement have been combined most obviously in dance throughout history. Synaesthesia, the ongoing dialogue between the visual and music/sound, and the efforts of many to *illustrate* music or sound, either synchronously or asynchronously, particularly in the age of the moving image, has been documented in recent large-scale exhibitions like *Sons et Lumière* (Centre Pompidou, Paris, 2004) and *Visual Music* (organized jointly by the Museum of Contemporary Art, Los Angeles, and the Hirshhorn Museum, Washington, D.C., 2005) and the smaller *What Sound Does a Color Make?* (also 2005). Color organs, Piet Mondrian, and Wassily Kandinsky's music-inspired paintings, animation to music by Oskar Fischinger, the Whitney Brothers, Jordan Belson, and Walt Disney's *Fantasia,* Tony Conrad's flicker films, and late 1960s psychedelic light shows are all well worth experiencing but certainly are not sound art; similarly, video works that show a live interaction between a soundtrack and the image function as a codependent relationship between sound and image. MTV has become a mainstream example of the codependency of image and sound and has often been criticized for branding songs with a definitive illustration, limiting

TRIMPIN
Fire Organ



TRIMPIN
Fire Organ (detail)

the imagination's ability to come up with its own interpretation of how the music translates into visions. The focus on sound that ultimately would find its way to a genre of sound art started with the invisibility of sound through recording and radio and telephone transmission and continued through the *disjunction* of sound and image.

Disembodied Voices: Telephone, Radio, and Cinema

With the inventions of the telephone and the radio, human beings had their first technological experience of hearing each other's voices and other sounds come out of a device. An early forerunner of Muzak also grew out of the telharmonium, an instrument developed in the late 1890s that would pipe music (played on multiple keyboards) into different businesses and public areas by using the principles of the telephone receiver and transmission through installed loudspeakers.

In 1925 Kurt Weill called for an "absolute radio" to coincide with the "absolute cinema" (which did not tell a story but consisted of a montage of pure images), with noises, sounds of nature, and "unheard sounds" that could be produced by the manipulation of the electronics of microphones.[9] In silent films, human activity, depicted more realistically than ever before, and the world were rendered mute; pianists had to be brought in to break the silence (and mask the sound of the projector), while inter-titles and even "lecturers" were brought in to explain the action to audiences (much like a museum guided tour, come to think of it). Phonograph records and carnival barkers were also used early on to provide sound accompaniment to films, but as films got longer, records (which were not yet "long-playing" and only held a few minutes of sound) became impractical and with the presentation of films in larger rooms it became harder to hear the barkers.[10] With the coming of sound film, film purists were dismayed at the possible end of pure cinema, in which the story was told strictly visually.[11] The famous 1928 Soviet "Statement on Sound," signed by directors Sergei Eisenstein, Alexander Pudovkin, and

Grigori Alexandrov, lamented the encroaching "bargain basement realism" of synchronous sound and image, reducing cinema to little more than canned theater, and derailing the inroads made in montage. They advocated asynchronous sound, which would maintain the independence between sound and image. Eisenstein and Alexandrov made attempts at asynchronous sound films (*Old and New* and *Romance Sentimentale,* respectively), while Rene Clair's *Entracte* used an Erik Satie composition (originally made to accompany a ballet by Francis Picabia) called *Cinema*, which was comprised of musical segments in uniform length that did not conform to the film's edits. Dziga Vertov, who had trained as a musician and had made films out of frustration with the technical limitations of the time that prevented making audio montage to his satisfaction, was overjoyed at the prospect of sound in cinema, claiming that both synchronous and asynchronous sound were valid in the new cinema and called for a "complex interaction of sound and image," an idea he applied in *Enthusiasm* and *Three Songs of Lenin.* [12] Norman McLaren would use drawn soundtracks on his abstract films, which would fall somewhere in between synchronous and asynchronous. (His predecessor was Arsei Avraamov's drawn soundtrack, drawn directly onto the film of Abram Room's 1930 Five Year Plan documentary *The Plan for Great Works.*) Meanwhile, Walter Ruttman had created a "sound film without images," *Weekend* (1929), an eleven-minute, rapid montage of speech, noises, and music that he felt exemplified the "procedure of photographing audible phenomena in a nonstylized manner, with the inclusion of their specific spatial characteristics," further enthusing, pre-Cage, that "Every audible in the entire world becomes material."[13]

Of course, the Soviets' fears were realized as early sound film largely consisted of little more than stiffly recorded dialogue (with actors often stuck talking around a table with a microphone hidden in a plant) and some incidental music. In some animated films sound effects were used to help tell the story, synchronized with the action but not naturalistically representing it (a drum roll for running feet, for instance). In the cartoon *Gerald McBoing Boing,* the character spoke in sound effects, not words. As Walter Murch has noted, "with animated films you have to create something that gives a sound where none is present"; unlike action films, there is no sound during the actual filming of a cartoon.[14] It's only later in the '30s that sound film begins to show signs of sophistication, with postsynched sound created in the studio, Foley effects (borrowed from radio), and a sound mix. Orson Welles's background in radio made the sound design of *Citizen Kane* and *Touch of Evil* impressive and a tool capable of being as important to storytelling as the visuals. [15]

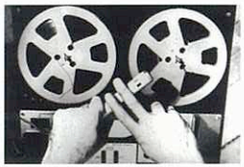
Disjunctive image/sound reappears with Lettrist Isidore Isou's 1951 film *Treatise on Venom and Eternity* (Isou called it "discrepancy cinema" as the soundtrack had nothing whatsoever to do with the images; this is followed, in turn, by the Situationists "detourned" cinema, which takes found films and substitutes their own revolutionary voice-overs for the soundtrack[16]) and Jean Luc Godard's work in the '60s. This is usually a function of Godard's use of quotation and collage, one example being an instance in *Breathless* where Jean-Michel Belmondo and Jean Seberg discuss going to see a Western, and Godard superimposes a sound clip (not an image) from the film they're talking about seeing on the soundtrack.[17] Experimental filmmaker Peter Kubelka's *Unsere Afrikareise* (Our Trip to Africa, 1961) is culled from sound and image recorded on location in Africa, but uses exclusively asynchronous sound—though it is used to comment ironically on the images and is precisely timed to the rhythms of the edits. Sound bridges—sound from the next shot entering a scene early, disjunctive at first and then revealed to be part of the next scene—also becomes more common in the '60s commercial cinema. Michael Snow's 1975 four-hour film *Rameau's Nephew* is perhaps *the* encyclopedic statement on asynchronous sound in film; over twenty-six separate episodes, sound and image are toyed with in every imaginable permutation. About the work, Snow wrote: "Its dramatic development derives not only from a representation of what may involve us generally in life but

from considerations of the nature of recorded speech in relation to moving light-images of people. Thus it can become an event in life, not just a report of it."[18] In divorcing sound from image, sound takes on a life of its own, and this is what makes the concept of sound art possible.

Recording as Art

In a sense, recording was an even more radical invention than photography in that the human voice was thought to be uncapturable, whereas human likeness had been captured to greater and lesser degrees in drawing and painting; it was the invention that Edison himself was most proud of.[19] Since recording could replicate music performances, it was only a matter of time, in light of modernist trends in art, before experimental techniques were developed to take recording out of the realm of aural photography.[20] Musique concrete, developed in France in the late 1940s and '50s by Pierre Schaeffer (a radio engineer, naturally) and Pierre Henry, took documentary recorded sounds and processed them to the point of unrecognizability (speeding up or slowing down the tape, editing, and using distortion and other effects) so as to divorce them from the object that made them. The sound of a violin, untreated, makes one picture of a violin, although it isn't a violin per se, in the same way that a photograph of a violin is not a violin. With this movement, sound and image again become an issue in so-called acousmatic listening. The term derives from the disciples of Pythagoras who heard, but never saw, his lectures delivered from behind a curtain. As defined by Schaeffer, acousmatic listening is "Listening to sound without any visual clue to its source."[21]

Schaeffer, in fact, ultimately became discouraged when he couldn't distance sounds sonically far enough from their original source to his liking, and felt he could not escape musical form and break through to pure sound. Nevertheless, musique concrete stands as the missing link between music and sound art; the artist Francisco López, in particular, seems to pick up where Schaeffer left off.



SNOW
Tap

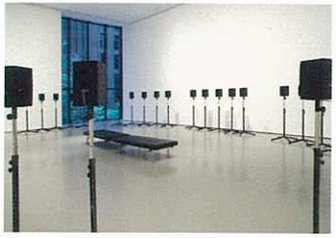
VARÈSE
Poème électronique

Besides distancing sounds from their visual source, the natural acoustic of sound in a room is lost in modern-day multitrack recording, and must be reconstituted (redefined) through reverb and other effects. As Bernhard Leitner put it:

> Reverberant rooms have always been "softened" acoustically by covering the hard reflecting surfaces with carpets, tapestries, curtains, and the like. Today the reverse, a much more difficult task to perform, has already become a standard procedure in the music recording business. The same technology which enables us to reproduce music without musicians and the appropriate space, allows us to simulate the reverberating space that had been eliminated in the recording. We can create different acoustics in one and the same space. [22]

It is this sense of perspective with the introduction of studio effects, particularly echo, that Brian Eno felt made "the process of making music much closer to the process of painting." David Toop has written that in the echo-heavy Jamaican reggae dub genre "the mixing board becomes a pictorial instrument" creating "depth illusion" (and moreover, a dub "version" or remix could be compared to an engraving or etching of a painting). Beyond the simulated space of echo or reverb, in mono mixes there is a depth of field, foreground, and background similar to painting; this is present in stereo also, but splits the "imaging" into a vertical dichotomy (which is lost to some extent on headphones). However, many sound artists have, until the CD era, been poorly represented on record: some like Phill Niblock and La Monte Young, objected to the twenty-minute album side durations as being too short to accommodate their long-form pieces (and not having control over the volume of playback, which was intended to be as loud as possible). Yasanao Tone and Maryanne Amacher resisted releasing stereo recordings of their work at all because it didn't capture the spatial

LÓPEZ
Dusseldorf



CARDIFF
40 Piece Motet

dimension of their work. A CD of a sound artwork could be compared to a sculpture exhibition catalog with photo reproductions of the works. With 5.1 surround sound, the idea of a sound environment replaces the painting analogy; as it becomes more common in home systems, sound art may well become as non-site-specific as music has.

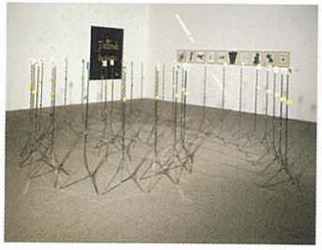
Eno points out that recording took music away from site specificity, as you could bring a recording of the symphony into your home as opposed to having to go to the concert hall. Glenn Gould gave up performing concerts in the mid-'60s because he thought that records would replace the concert hall. This was partly due to an egalitarian attitude on his part; in the home, everyone had the best seat in the house, and in home playback:

> the listener is able to indulge preferences and, through the electronic modifications with which he endows the listening experience [presumably bass and treble or equalization controls on a home stereo] imposes his own personality upon the work. As he does so, he transforms that work, and his relation to it, from an artistic to an environmental experience. [23]

In this way Gould unwittingly conceptualizes albums as a kind of interactive sound installation. Not only could the home listener enjoy the piece of music at any time, but through volume and equalization on a hi-fi system he effectively becomes an executive conductor/producer.

Spatiality

> "Every sound has a space-bound character of its own. The same sound sounds different in a small room, in a cellar, in a large, empty hall, in a street, in a forest, or on the sea."
>
> —BELA BELAZS[24]



FILLIOU
Musique télépathique nø 5

With record players capable of turning any home into a concert hall, and recording consolidating the nineteenth-century restriction of sound to one central location, new investigations of site specificity and spatiality began.

Long before sound art though, man had been attuned to sound's relationship to architectural and natural spaces. Bill Viola has written of Gothic cathedrals:

> When one enters a Gothic sanctuary, it is immediately noticeable that sound commands the space. This is not just a simple echo effect at work, but rather all sounds, no matter how near, far, or loud, appear to be originating at the same distant place . . . Chartres and other edifices like it have been described as "music frozen in stone" . . .
>
> Ancient architecture abounds with examples of remarkable acoustic design—whispering galleries where a bare murmur of a voice materializes at a point hundreds of feet away across the hall or the perfect clarity of the Greek amphitheaters where a speaker, standing at a focal point created by the surrounding walls, is heard distinctly by all members of the audience.[25]

In modern times architecture has been less preoccupied with acoustics; "sound as a medium is still lost a lot in our culture," sound artist Bill Fontana has said. "Architects hardly think about it. We design space visually and don't think about the relationships between sounds that exist in spaces."[26] Viola notes that modern acoustics have been developed to combat unintelligibility due to the reverberations in modern room design, which he considers ironic because "the acute reverberation in the Gothic cathedral, although a result of construction and not specific intention, was considered an essential part of its overall form and function."[27]

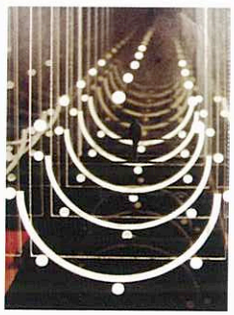
To some extent, many sound installations are a kind of room tone

renovation/rehabilitation, and even a kind of health spa; sound artist and architect Bernhard Leitner has said in an interview:

> What is true for music applies to any acoustical stimulus: the sound quality of a room affects the nervous system. Heart, breathing, and blood pressure which are largely beyond conscious control are affected. And psychosomatic implications should also not be underestimated. In other words our entire physical and mental well-being is affected by the sound of a room. Because modern architecture has underestimated if not completely ignored these phenomena, it certainly has caused substantial damage. In this context we must, however, point out that we have great difficulties talking about the way we hear a room, the way we come to terms with "audible" space. We simply lack the terminology. In this respect our visually-oriented language fails us.[28]

The use of spatiality in Western European music composition goes back to the sixteenth century, when composers like Giovanni Gabrieli were writing works to be performed in churches for multiple choirs. Gabrieli wrote in particular for St. Mark's Cathedral in Venice, which boasted two choir lofts and two organs facing each other (also an early example of site-specific composition). Bernhard Leitner cites another, even more complex example from the seventeenth century:

> In 1628 the Salzburg cathedral was inaugurated with the performance of a spatial/musical composition by Orazio Benevoli, for which fifty-three instruments and twelve choirs were distributed throughout the interior of the cathedral in order to emphasize its acoustic effects through the ensemble playing of different groups, through echoes and dialogues, or through a general tutti. The resulting monumental spatial effect was achieved in an altogether different way from that used in the nineteenth century where one simply projected an increased volume of sound into the space from a single place, the podium. Likewise, in court ceremonies small groups of musicians were distributed all around the room in such a flexible way that they could change places at short notice and thus create different spatial effects as well as meanings.[29]



LEITNER
Sound Tube

One exception to this nineteenth-century practice is Mahler's Third Symphony, where there is one section in which the brass play offstage; another is Berlioz's Requiem. In the nineteenth and early twentieth centuries, George Ives and Henry Brant composed pieces for multiple bands or orchestras situated in different areas of an outdoor space. Ives, father of the famous composer Charles Ives, had two marching bands play two different tunes while marching through a town park, starting at opposite ends. Ives would listen for the differences in sound in relation to each band's position at any given time. He would also have his son listen as he played cornet from across a pond, later immortalized by Charles in his composition *The Pond (Remembrance)*. Charles would use spatiality to some degree in the orchestration of pieces like *The Unanswered Question*, but it was Brant who took spatial composition for acoustic instruments to its twentieth-century apogee.[30] In *Antiphony I* (1953), five orchestras are spread throughout the stage and auditorium. Brant went on to compose over one hundred spatial pieces (needless to say, these do not translate well to stereo recordings).

The musique concrete crowd was already thinking of spatialization in the early '50s. At Pierre Schaeffer's suggestion, Jacques Poullin invented a device called *pupitre d'espace* ("space desk" or "space control") which utilized induction coils to move sounds around in space. Varèse had even earlier imagined "a series of sound projections in space by means of the emission of sound in any part or in many parts of the hall." In his *Poème Électronique,* realized at the Brussels World's Fair in 1958, a tape piece of bells, sirens, treated voices, and piano traveled in various routes through four hundred

loudspeakers spread throughout the Philips Pavilion designed by Le Corbusier (with the help of Iannis Xenakis), a kind of twentieth-century secular version of writing music for a cathedral space. Xenakis's tape piece *Concret PH*, made from the sound of burning coal, was also played through the system. [31]

Karlheinz Stockhausen is often associated with spatial music, developing a series of compositions he dubbed Raummusik ("music in space"). Though history has shown him to usually be the second, not the first one to experiment with any given avant-garde technique, he has maintained, "From the very beginning I've thought about where the instruments would have to be placed, I didn't want to simply have an automatic spacing of sound." [32] *Gruppen* (1955) for three orchestras, for example, comes three years after Brant's *Antiphony I*, but in his defense Stockhausen's piece involved "moving timbres . . . a chord is moving from orchestra to orchestra with almost exactly the same instruments (horns and trombones) and what changes aren't the pitches but rather the sound in space," whereas Brant's music emphasizes contrasting a variety of musical styles (in the footsteps of Ives). [33] *Carre* (1959) was for four orchestras and four choirs surrounding the audience. In 1956 Stockhausen composed *Gesang der Jungling*, a landmark musique concrete piece that incorporated singing and electronics and utilized five loudspeakers spread throughout the auditorium. The electronic piece *Kontakte* (1960) dealt with the speed of sound moving from one speaker to the other. [34] Stockhausen also thought of putting musicians on swings to make the sound move and conducted workshops at Darmstadt of "walking and running music" where singers and instrumentalists made movements. In *Ensemble* (1967), a four-and-a-half hour performance as part of one of his seminars in Darmstadt, at the program's end the musicians continued playing in open roofed cars or open car windows and met again twenty miles outside of town. Stockhausen also took movement of the audience into account: "You have to compose differently when you know that the listeners are coming and going." In *Sternklang* five groups of musicians were separated by bushes and trees. The sound changed

VARÈSE
Poème électronique in Philips Pavilion

XENAKIS
Persepolis

for the listeners as they approached each group, who would then walk over and listen to another.

New Kinds of Site Specificity

Laszlo Moholy-Nagy began to imagine "sound waves issuing from unexpected sources—for example, a singing or speaking arc lamp, loudspeakers under the seats or beneath the floor of the auditorium." [35] Piet Mondrian envisioned a new kind of concert hall for Neo-Plastic music where "people could come and go freely without missing anything because the compositions would be repeated just like in movie theaters." [36] Stockhausen's former student, La Monte Young, had envisioned "a continuous sound composition for installation in homes, offices, galleries, classrooms, swimming pools, ocean liners, bathyspheres, airplanes, spaceships, etc." In the 1967 *Fluxfest Sale*, a poster was included with *Film Culture* magazine as part of a special section on Fluxus. *The Well-Tuned Piano* is also an early site-specific piece. Tuned to just intonation, Young tuned a piano in his home and made a recording. He was unable to perform the work live until ten years later, when he had the opportunity to retune a piano for an appearance at a music festival. The piano itself had to be "installed," since moving it would ruin his special tuning in just intonation (it's also restrung to achieve the tuning), as would changes in humidity and temperature in the location space. After the world premiere in Rome in 1974, Young sold the "well-tuned" piano as an art object to the presenter, Fabio Sargentini, who then offered him an additional $1,000 to sign it. Dia Art Foundation later bought the piano from Sargentini for $14,000 and brought it to New York, where it was installed in the organization's Harrison Street space. A piano is not easily moved to begin with, but the fragility imposed by Young on the well-tuned piano makes it more like a sculpture or a "permanent installation" you would find in a museum of visual art. Young himself has rarely toured or released albums, endeavors perhaps too time constricted to accommodate his visions of "continuous sound compositions"; he has made his own music somewhat

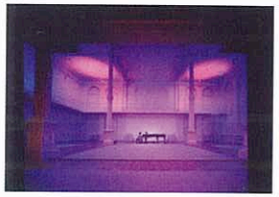
STOCKHAUSEN
Cologne Radio Orchestra

site specific, even now the *Dream House* above his own loft on Church Street in New York is his primary site for an occasional concert.

Mark Rothko made paintings to fill a space created by Philip Johnson, the Rothko Chapel in Houston, and Morton Feldman composed a piece to be performed there. "To a large degree my choice of instruments (in terms of forces used, balance, and timbre) was affected by the space of the chapel as well as the paintings," he wrote. "Rothko's imagery goes right to the edge of his canvas, and I wanted the same effect with the music—that it should permeate the whole octagonal-shaped room and not be heard from a certain distance . . . the sound is closer, more physically with you than in a concert hall."

Perhaps in response to this increased interest in spatiality both in modern composition and in sound art, concert halls have become considerably more flexible. At Carnegie Hall, Zankel Hall has a surround-sound system, with the potential for moving seating around. In the performance space of the Centre Pompidou's Institut de Recherche et Coordination Acoustique/Musique's (IRCAM) "the wall consists of hundreds of panels that can be flipped around to get the acoustic that you want, and a ceiling that can be lowered." Radio France operates the Olivier Messiaen Concert Hall with a spatial sound system ("an orchestra of loudspeakers") designed by musique concrete composer Francois Bayle, who dubbed it "acousmonium." The soon to be unveiled Experimental Media and Performing Arts Center (EMPAC) at Rensselear Polytechnic Institute boasts "spaces with twenty-four bit range, [and] there will be projectors but in enclosures that will eliminate any sound, an absolutely silent environment with changeable seating arrangements."

Although most of this experimentation has been conducted in the avant-garde wing of the classical music world, one very well known rock album provides an example of new site specificity. In his book on Led Zeppelin's 1971 fourth album, Erik Davis notes that guitarist/producer Jimmy Page would place mics in various parts of the room while recording, and would then "record and balance the difference between these mics, capturing a time lag that reflected



ZAZEELA AND YOUNG
The Magenta Lights and *The Well-Tuned Piano*

PANHUYSEN
Two Suspended Grand Pianos

the acoustic shape of the room itself." Davis goes on to quote Page himself as saying that he was trying to "capture the sound of the room live"—not the music, or the band, but the room.[37] This can be heard especially in the famous and often-sampled drum introduction to the album's final track *When the Levee Breaks*. Davis details the setup:

> For the session [drummer John] Bonham placed his new kit on the floor of a large open stone stairwell . . . Two ambient Beyer M160 stereo mics were then strung up on the two landings above, ten and twenty feet overhead, and then run through a giant echo unit . . . the setup was heresy; room mics were never used to record drums . . . as [writer] Andy Fyfe puts it, what you hear is not just the drums, but the drums reacting to the acoustic space of the room. But you are also hearing something more uncanny than this: you are hearing *the room respond to the drums*.[38]

Around the same time, composer Alvin Lucier noted, "Every room has its own melody hiding there until it is made audible," while a decade before Yoko Ono wrote an instruction to the performer of *Tape Piece II* to "take the sound of the room breathing." Music was once created to be heard live in a specific space; with the advent of recording and forms of aural transmission the attunement to a specific space became a lost art looking to be rediscovered. Since the space was no longer integral to the music, it was left to sound to articulate the properties of the space itself, which then moved to the foreground, just as color and geometrical shapes had in modernist painting. The performer was removed, putting the focus on sound itself, and on its environment.

JULIUS
Music, far away

VON HAUSS-WOLFF
Freq_Out 4