

THE ROOM TRICK

Sound as Site

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Magical halls, still waiting for the right magician.
Rudolf Arnheim, *Radio*

Non-visibility and depth are two material aspects intrinsic—though not equally obvious—to any sound recording. At the risk of being schematic, one could say that the typical “blindness” of the aural medium is inevitably paired with an element that conveys, like a cipher, the spatiality of a recorded event or performance—and this, regardless of the caution one may have in identifying every sound object as necessarily a sound recording. For such a “depth” or spatiality seems to reappear as an effect, a structural mirage, an analog to the “illusion of meaning” in the semiotics of language. It demonstrates the particularity that, in the sound medium, spatiality can at the same time be indexed (by a set of transitive traces) and suggested (by the coexistence of aural layers, background noises, reverberation, etc.). Additionally, it can be summoned in recorded language, as in Alvin Lucier’s haunting words “I am sitting in a room different from the one you are in,” in his early masterpiece from 1965.

What we may call the structural transitivity of the sound recording—the listener’s *a priori* assumption that a recording is “of something,” something past that was, inevitably, *in space*, even the space of a machine—still emerges in radical cases where spatial indicators (background noises, directional sound, reverberation, etc.) have been minimized, obliterated, or simply don’t exist. Furthermore, such a ghostly transitivity pervades even the playback of a perfectly unused, blank, magnetic tape. Thus a soundscape, an image of a scene no matter how abstract (the dark inside of a box, or a closet; an elevator cage; the list is infinite) may emerge by default as an effect of the intrinsic architectonics of notes, sources, and layers in sound recording; an effect accrued especially when a voice or other bodily markers are included in it. This problematic gains complexity when considering that, on the one hand, the idea of a “recorded space” often conflates with that of the space of production of the sound object itself; and, on the other, that the emergence of spatial signs and remnants in sound recording happens always in subordination to another space—the one where the listening experience occurs.

Gavin Bryars, *A Listening Room*, installation view at Château d'Oiron, France, 1993. Courtesy Gavin Bryars.



Right: Juan Muñoz during the live performance of *A Man in a Room, Gambling*, at BBC's Studio One, Maida Vale, London, 1997. Project commissioned by Artangel. Photo: Stephen White. Below: Live performance of *A Man in a Room, Gambling*, at BBC's Studio One, Maida Vale, London, 1997, with Gavin Bryars Ensemble in the foreground and Juan Muñoz sitting at the back of the room. Project commissioned by Artangel. Photo: Stephen White.



The aural medium proceeds by invasion.¹ Perhaps the most elementary among architectural illusions in sound is that of a simple room projected onto another, the superimposition of an extraneous, recorded space onto the listener's. The following essay aims to shed some light on the relation of solidarity between those spaces (the recorded space, that of the recording, and the listening space) as expressed by a handful of works made, with one exception, in the past three decades: recorded texts or scores that are not necessarily "music," nor "audio literature," nor "sound art," but contain the three, and which address the topic of architectural illusion in sound from both analytical and fictionalized perspectives. In addition to Lucier's landmark *I am Sitting in a Room* (1965), mentioned above, Juan Muñoz's *Building for Music* (1993), Robert Ashley's *Pillars* (2007), Gavin Bryars's *A Listening Room* (1992), and Muñoz's *A Man in a Room, Gambling* (1992, produced in collaboration with Bryars), propose variations on the way sound recordings can convey, spell, and map out their self-awareness of spatial issues within their very medium.

Such exemplary works utilize the spatial qualities of sound by adding one or several narrative levels that emphasize their interplay and reflect upon, even mimic, the subjective space of the listener. Perhaps the condition to produce such reflections is the suggestion or representation of a listening room within the sound recording itself, a space where the very act of listening can be anticipated and manipulated, and where other spaces, other listening rooms, can be signified, described, or indexed, projecting this reflection ad infinitum. The questions—what is the status of that spatial remnant we called "depth," and what is it that we identify as fictive or illusionistic space in sound; how does it overlap with the real site of the listening room; and how does this effect the latter's consistency—not only point to the problem of transitivity, but do so insofar as the problem of transitivity in representational media is also the problem of the metonymical functioning of media in general. Perhaps through the following sequence of visitations, descriptions, and reconstructions of listening experiences—an analytical simulacrum, so to speak—it will be possible, obliquely, to tackle a deeper and much subtler question: that of the pervasive, generalized understanding of imagination as a "site."



Traces of spaces and evocations of fictive sites intertwine in this sequence of reconstructed transmissions. The first among those enclaves is summoned in a radio broadcast from 1993: stored somewhere and now heard, in delay, in 2014. The title of the program is *Building for Music*.² It could be a documentary, or a report of some kind, a vulgarization, though its imposture is made to be easily recognized. The listener knows it does not air every other day from Monday to Friday, like the announcer says. The artist, whose name is Juan Muñoz and who died in 2001, is speaking: pretending to be now the radio announcer, now an architect who faces a conference room full of city officials and trustees.

A single voice tells the story of an imaginary building from two points in time and two fictional perspectives—that of a radio announcer-cum-critic, and an architect-

artist. The announcer speaks from a moving car, prowling the streets of a Dutch city in search of a building—an auditorium to be exact—that was destroyed during World War II. “Was this city ever destroyed?” he asks in disbelief. The program (“tonight’s program”) will be devoted to Arnhem’s Konzerthalle, a project by Dutch architect Johan Alten. Passing cars are heard, as if the one from which the announcer is speaking, a broadcasting box of sorts, were marooned on the roadside. (Of course, it is not a car but a recording studio, probably located in Madrid.) We hear the wind of an imaginary Holland, whose government allegedly paid six thousand florins for an architect named Johan Alten to build a highly “functional [but] symbolic building.” Yet Alten finally turned the official guidelines “upside down” and conceived of “an immense, hollow, empty warehouse,” a space designed, he insisted, “for the voice of the singer, the voice alone” to be suspended at the center of the hall. Curiously, this for-ears-only space would resemble the pupil of an eye:

I know that I have been accused of wanting to build an invisible auditorium, where nothing is seen. . . . Some of you say, you have never seen an endless multiplication of circles in a building, but then the name of Francesco Borromini, of Claudio Monteverdi. . . . But then, even the eye is circular. It is an empty hall. And gentlemen, my priority is to suspend the voice in that empty hall. . . . What I want to build is a space where the epiphany might occur. A *stanza* for a representation, a room all exile. A building exact, ordered, needed, autonomous and, above all, realist. A space to speculate in, but in the ancient sense of *speculare*. A mirror reflection. Not square nor round, but elliptical. Two circles, the second interrupted. Above all, a place without direction.

Nude architecture, Alten’s invisible Konzerthalle conceals the orchestra under a porous floor, dividing the building into two halves, one on top of the other. Being that the orchestra is placed in the underground section, the audience faces a void where the voice of the singer “emerges and listens to itself.”³

The orchestra is not hidden. It is not true that they will play their instruments in that abolition of place that you call cellar. Its proportions are identical to the upper part and I know that in this way, the sound will ascend towards the audience. An audience invisible for the musicians and musicians invisible for the audience.

Only the music is to be seen, while the construction disappears the more thoroughly it is described. The circular, elliptical shapes reverberate and redirect the sound as though sculpting it, reflecting it, generating an impossible hologram of the voice, a mirage that will be auditory only. Curves, the rotating immobility of the walls, stimulate the movement of sound. Kepler’s image, the music of spheres, becomes a system of cylinders “that cut and intercut between themselves and the larger cylinder” that is the main of these units on the floor plan. Their center is not to be found: an ellipsis. “An ellipse, yes, a moving ellipse.” *Elleipsis*.

I'll tell you, I'll tell you, there is no ideal sphere. There is only blurred spaces, where all elliptical bond is useless. . . . Like a circle that intersects with another circle, and produces the oval shape of a cupola. And then because of the crossing of the second wall, provokes the appearance of the curved ceiling and the exact position of the columns. . . . A building of extreme laterality. Displaced from a center that never was his. Conceived from a single position that it cannot occupy. Anamorphosis. . . . I want to build a symbol on a stupid marble staircase that leads into a big hall with unnecessary columns glued to a wall that doesn't need them.

Alten's voice—Muñoz's, persistently—is simulated with the emphatic complicity of an orchestra.⁴ By ricochet, the music accompanying his lecture helps the listener imagine the concert hall, as the music emerges from "beneath" the voice. He speaks with the melancholic conviction that is granted by unrealizable goals, the only nuance here being that his goal, realized in fiction, was inaugurated by destruction. Its absence is doubled, while its specter dwells in a subordinate space (the car, the room, the ear). The image produced by so many invisibilities superimposed is so strong that, at times, the very act of listening is forgotten. A void multiplies by itself like layers of transparency that, laterally seen, in anamorphosis, from the side, that is, the listener's side, produce a reflection.

Erected within sound transparency is another example of illusory architecture—Robert Ashley's *Pillars*, which was recorded in New York City in 2007 and whose text is published for the first time in this issue of *PAJ*. The work outlines a project for a silent concert whose only performer would be a light engineer manipulating spotlights projected on two classical columns. Ashley's voice explains the essential stage design, the key moments in the performance, his unscripted talk providing the guidelines for someone, one day, to assess the feasibility of the work; or is the talk inconspicuously scripted as well? There is indeed a transcript that could retroactively be seen as the script for *Pillars*. Although the hesitations, pauses, and occasional (very occasional) mumbling suggest the contrary: the piece is quite clear in the composer's mind.

I imagine a rather large gallery, flat floor, with maybe a hundred or two hundred very comfortable chairs, with an extraordinary lighting capability. The whole gallery ceiling will be a grid that would hold lights. . . . [I]n front of the audience, there would be two pillars, like Roman pillars, maybe a foot in diameter? I'm not sure.

The consistency of the pillars is not specified. They could be made out of plaster. The material does not seem to be important, as long as it is not revealed by the spotlights, an inconvenience that won't occur on radio. Not only is it uncertain whether or not the project is ever to be undertaken, nothing indicates whether the speaker is the composer or a nameless character played by him. Can a character even exist without a name, or with an identity that simply consists of someone else's voice (that of Robert Ashley now)? Those questions, pertaining more to the realm of psychology than sound or literary studies, arise in the mind of the listener.

The title of Ashley's "imaginary work" inside the radio piece may be *Pillars*, too: a mute opera for lights and stagehands. Two columns appear and are lit by a succession of numbered light plots. Each light plot change is announced in a loud voice by the lighting designer and executed by technicians. This is how Ashley describes the operations of the work:

So the idea of the piece, I mean the effect of the piece, would be for the lighting designer to change, to switch among those ten or twelve light plots, so that the audience was more and more drawn into the physical nature of the pillars. . . . What he's doing basically, is going from light plot #12 to light plot #2, and light plot #2 to light plot #8, in that random order, and every time he goes to a different light plot he pulls down the intensity of the lights so that the lighting of the pillars continues to, how would you say, continues to reinforce the physicality of the pillars . . . ever so gradually until he got to the point where there was virtually no light at all, so that the audience would see those pillars in their imagination in what would eventually be complete darkness.

A carefully engineered degradation makes the audience members' retinas adjust to each situation and *keep seeing*, with equal sharpness, the columns; and this, until the moment of total darkness over which those retinas—a collective organ, at this point—will "project" the columns as they *would be* within the memorized light plot. Meanwhile the listener of the piece has attained this vision without any visual preliminaries. Perhaps the improbability of the work, acknowledged at its very beginning, resides less in light engineering problems than in the technical difficulty of inducing an entire audience into holographic hallucination—a feat that is now accomplished by a simple act of storytelling. A session of psycho-architectural induction, an opera of props, *Pillars* drags the retina onto the stage and vice versa. The listener is, on the other hand, forced to acknowledge the identity of the two *Pillars*—the radio piece and the light performance. The latter has already entered the listener's memory with the legitimacy of a borrowed remembrance. A light projection takes place in a theatre, an auditorium; its entrance has the spiral shape of an ear. The voice brings light by other means, dictating the plan for a stage or building that imagination erects in real time. The construction disappears at the very moment it has been completed.

The concept of anamorphosis may prove instrumental in the analysis of such aural mirages. Typically, anamorphosis is the name of a visual procedure by which the likeness of an object is "hidden" in another image. The surface where the likeness appears is tilted, twisted, or rotated, then represented; the observer encounters but a blur: the cipher of a reflection. Somehow, it is a mirage in reverse. The procedure finds its first historical examples in works (sketches, treatises, details) of the Renaissance and the Baroque, such as Leonardo da Vinci's depiction of an anamorphic eye in a notebook (c. 1485), Jean-François Nicéron's treatise *La perspective curieuse* (1638), and Atanasius Kircher's *Ars Magna Lucis et Umbrae* (1646), among others. Kircher is mentioned in Johan Alten's dramatized speech, a name obliquely inscribed in Juan Muñoz's *Building for Music*. But the origins of anamorphosis are in fact architectural.

They can be tracked down to the first building treatise, conceived in the last quarter of the first century B.C.E.: Marcus Vitruvius's *Ten Books of Architecture*, and his idea of correcting the asymmetrical appearance of a building by means of "flashes of genius, and not only by mere science"; flashes that can be summarized as distortions of a facade's planes, or parts, so its surface seems aligned, from certain points of view, when in fact it is not.⁵

Vitruvius' principles reemerge in architectural works of the Baroque period, such as Borromini's San Carlo alle Quattro Fontane—another tacit reference in Alten's speech—and its deceptively mutating walls. However, these examples represent only visual applications of the anamorphic schema. As theorist Donald Kunze has recently explained, "anamorphy is more general than the case of the geometrical distortion. It can be present in figure-ground relationships, puns, and other elements concealed within salient material."⁶ Drawing from Lacanian topology, Kunze maps anamorphy onto the diagram of metonymy, anamorphy being the "absent third" that connects the two terms of a metonymical pair. Curiously, Kunze refers to these terms with words pertaining to the aural realm of speech:

Anamorphy is one prototypical means of placing, within the "orthogonal" relationship *between a voiced and a silent* element, a third, "absent," thing. Why anamorphy? If the silent element is the fragmentary metonymy that creates a basis for the imagistic or symbolic "meaning effect," then anamorphy is the condition by which the metonymy's necessarily missing parts return to the field of meaning as a kind of "epiphany."⁷

Kunze uses this schema to explain Hans Holbein's painting *The Ambassadors*, but it could readily be applied to the domain of sound recording and transmission:⁸ its voices, its immersive descriptions, its elliptical buildings within other buildings, its false auditoria.⁹ A fundamental example can be invoked: Alvin Lucier's *I Am Sitting in a Room*, a composition from 1969, or rather its final and best-known recording, made at the composer's living room in Middletown, Connecticut, at the end of October 1980.

As many readers will remember, Lucier's early masterwork consists of a paragraph read aloud by the composer, the recording of which is played in the same room, recorded, the recording of which is again played in the same room, recorded, the recording of which. . . . In the end, the recorded voice dissolves, summarizing itself into its most salient vibrations, as the space progressively returns to the recording a filtered sound where only the resonant frequencies—those matching the acoustic properties of that particular space—remain. It is erosion, or translation to noise. Recording after recording of the recording being projected onto the space of the room, the voice becomes something we can but recognize as the rudiments of music: rhythm, resonance, chromatism, abstraction. By retaining only those frequencies that resonate with the shape of the room, the recording depicts it. In other words, the paragraph Lucier recites becomes an anamorphosis of the room. The paragraph that goes:

I am sitting in a room different from the one you are in now. I am recording the sound of my speaking voice and I am going to play it back into the room again and again until the resonant frequencies of the room reinforce themselves so that any semblance of my speech, with perhaps the exception of rhythm, is destroyed. What you will hear, then, are the natural resonant frequencies of the room articulated by speech . . .

Thanks to the recording technology—the human faculty or skill of memory transferred to, and objectivized by, a machine—a certain aural material is transferred to magnetic tape, disembodied, then retranslated as playback transmission—relocated in another room which happens to be the room of the first recording—then rerecorded, and so forth. As the complete recording “migrates” from its original scene, Lucier’s living room is contained as cipher and thenceforth superimposed onto the subsequent, remote, unpredictable, countless listening rooms the work will be replayed in.

In 1993, the composer Gavin Bryars made what could be considered a variation on Lucier’s experiment in more traditional terms (no voice erosion, no re-recording), a chamber composition he titled *A Listening Room*. Made at the Château d’Oiron, in western France, the recording took place in several of the castle’s rooms, and was then reinserted in each of them by means of a sound installation. It is worth noting that the longest and most suspensefully simple track was recorded in the castle’s twenty-first room, the kitchen—a vaulted space, also known as the “salle des anamorphoses.” Bryars introduces the overall project in the following terms:

Specific music was written—or in two cases existing music was used—in order to establish the architectural acoustic of each space that was chosen. . . . In all cases the rooms were selected primarily because of the character of their acoustic. . . . The recordings were made with a Calrec soundfield microphone programmed for the recordings to be replayed through an ambisonic sound system. For this[,] eight loudspeakers are located at quite precise points within the listening room so that the listener hears in 360° the natural acoustic of each source room. The listening room has comfortable armchairs and was planned to be similar to the interior of an English “gentleman’s club.” This room . . . is, therefore, both a map of the space and a space in itself.¹⁰

Again, what kind of map could this work be, if not an anamorphic depiction of the spaces recorded and “cartographed” as musical notation? The same question the listener could have asked himself—as most listeners have only access to the works as music albums—in regard to Lucier’s *I Am Sitting in a Room* arises here. If not the human ear, is there or will there ever be a device capable of processing and translating the music, theoretically functioning as the anamorphic map, and providing a figurative rendering or a readable description of the original space? And then, would that prove the artwork “true”? If the cited works function as theorems on the aural translation of rooms, then the theorem suffices, as it is the possibility of its truth, not its truth, which is being offered for contemplation. And yet, the question of its truth

remains, not as a sign of incompleteness but as an attribute of a device that exists under the light of paradox. Permanently dwelling on the theoretical threshold, sound anamorphoses unfold in time like maps of nowhere, diagrams without referent or translations whose correspondence, if there ever was one, has been lost.

Each of the works described so far is a riddle. Their plots, if they have any, resemble that of a card trick. By the time *A Listening Room* was composed, Gavin Bryars was about to undertake a collaboration with Juan Muñoz in a radio work, *A Man in a Room, Gambling*, Muñoz's first and probably finest sound piece. Perhaps Bryars's conception of his work at the Château d'Oiron foreshadowed, to a certain extent, his project with Muñoz, although the only written statement by the former speaks in terms of a happy coincidence.¹¹ It is not surprising that, on the other hand, Juan Muñoz had conceived the texts for this piece during the time of an artist residency in Rome, where he thoroughly studied the works of such masters as Borromini, Parmigianino, and Pozzo—which leads us to think that the study of anamorphic illusions played a germinal role in his works for radio.

The first thing that strikes the listener of Muñoz's work from 1992 comes in the same order as its title: "A man in a room," then, "gambling." What room? No room is evoked or emphasized here by means of resonance or reverberation. The voice, again Muñoz's, comes through clearly, deeply, closely. No marginal noises are heard, no glitches, not a single breath is out of place, but depth is obtained by the coexistence of the voice and music as its background.¹² The speaker's unsaid being (sitting) in a room (different from the one you are in now) is not simply inferred by default, and the smoothness of his speech indicates something that is not quite, and at the same time more than, a closeness: a pure place of transmission, like a sudden presence in an isolation cell, or a box, that of the listener's consciousness. An epiphany occurs—a "synecdoche," in Kunze's terms—that of the smooth, demonic figure of a professional gambler.

Good evening. . . . Welcome once again to *A Man In A Room, Gambling*. As we mentioned yesterday, we are going to explain the second part of some of the most common card tricks that can be performed at a gambling table.

Setting a precedent for *Bulding for Music*, the fable is introduced by the fable of its own transmission. Its greeting gesture toward the listener is a dribble, and its mood, its tonality, will remain oblique, blasé, melancholic. Bryars's score, repetitively descending and recommencing, assists the ironic effect. Each installment explains a trick, and *is* a trick—in fact, the same trick ten times repeated, each of them a different false second part, tantalizing: how to find a card without looking at it, deal from the bottom of the pack, make a card disappear or move to another hand; all of them described so precisely that, in a way, they seem unthinkable.¹³

Pay close attention. Take the lower pack with your right hand. . . . And instead of putting it on top of the other, slide it along the table on top of your left hand. Now, take the second pack and put it on top in the same way.

The listener is forced to visualize those hands and the cards displayed, then the fingers. Too many things for two ears to look at. As in every act of legerdemain, an element of distraction is required—in this case, the music—voice and music coordinating like two pairs of hands. As the listener's attention oscillates between one and the other, the thread is lost.

A Man in a Room, Gambling was conceived for late-night radio, to be heard specifically in the place of BBC's midnight shipping broadcast by absorbed travelers,¹⁴ but the work only premiered in Britain, in front of an informed audience, five years after the original recording. It was in September 1997 at the BBC's Studio One on Delaware Road, London, a location that very much resembles a vast, hollow, empty warehouse. The area occupied by the audience, just a few seating rows cordoned off by a fence, covered only a small proportion of the space. The members of the Gavin Bryars Ensemble sat at a distance of about fifteen feet in front of them, surrounded by microphone perches. Then—according to the photographs the listener is looking at—far behind, at the back of the room, near the emergency exit, was Juan Muñoz. Solipsistic, indecipherable, sitting in plain sight at a baized table on which the script of *A Man in a Room, Gambling* lay in lieu of a deck of cards. The scene differed substantially from what absorbed lonely drivers on the highway, or what a deferred listener in 2014, may have been prone to imagine; or it actually didn't differ, as also the gambler's room was imaginary.

Sound recording, with its ambiguities almost impossible to purge, its layers of depth nondescript, its manipulated transitivity, offers a good tool for deceit, even more powerful if we consider radio's effect of simultaneity and "real time."¹⁵ This, of course, does not imply that all works, documents, and events of sound recording have that purpose; nor, on the other hand, that what we may call the *room trick* is the only object of Juan Muñoz's *A Man in a Room, Gambling*. It is rather an effect, though a fully conscious one, intimately connected to the illusionistic intent of the piece. Furthermore, the explicit way in which it is articulated in that specific work helps us understand other iterations of architectural illusion in sound, such as the works treated previously. However, a gap seems to exist between the abstracted, structural room of the speaker, i.e. the recording room surrounded by silence and/or unspecified ambient noise, and the spaces described or evoked in some of those sound recordings, where another illusion is generated via the semantic channel. This listener's claim will be, then, that such a semantic illusion of architecture is pertinent only insofar as a structural architectonic illusion or effect underlies and pervades the medium of sound recording.

Obliquely and playfully, those semantic illusions acknowledge and elaborate on the fact that the recorded voice carries a theatre with and within itself. The room trick reflects on the structural depth of sound recording by interiorizing the space of the listening room, bringing it back to the listener in the form of an aural anamorphosis.¹⁶ The listener is thus confronted with the reflection of his or her own listening space as an idealized plane. The ear, too, carries a theatre within itself. Almost as a reaction to this game of non-visual reflected reflections, a third space seems to

emerge, communicated as a fiction: a space that is not the actual listening space (itself inaccessible and unpredictable for the speaker) nor the recording space (no less nondescript and inaccessible for the listener), but an idealization of both. A fictive listening room, an auditorium that evokes the impossibility of a common space for transmission, and whose remoteness is equal for both speaker and listener.

NOTES

1. We will have to wait a few more years before the use of headphones as a preferred listening channel obliges us to reformulate this statement in terms of purely perceptive, rather than spatial, terms.

2. The work was commissioned for the Sonsbeek '93 exhibition in Arnhem, in the Netherlands, and aired the same year on the VPRO public radio station. Forthcoming citations are from the transcript included in Juan Muñoz, *Writings/Escritos*, ed. Adrian Searle (Barcelona: Ediciones de La Central/MNCARS, 2009), pages 228–239.

3. Concerning the “interiorization of hearing” in radio broadcasting, see note 15.

4. The score of *Building for Music* was written by Alberto Iglesias, at the time an emerging composer for the screen.

5. See Book VI, chapter II: “Symmetry, and Modifications in It to Suit the Site,” esp. §§ 3–5. Trans. Morris Hicky Morgan (Cambridge: Harvard University Press, 1914), 174–175.

6. Donald Kunze, “The Vitruvian Virtues of Architecture.” <http://art3idea.psu.edu/locus/vitruvius2.pdf>. My emphasis.

7. Ibid.

8. As it had already been subject to Jacques Lacan’s foundational analysis in his seminar devoted to anamorphosis (26 February 1964). *The Seminar of Jacques Lacan, Book XI: The Four Fundamental Concepts of Psychoanalysis*. Ed. Jacques-Alain Miller (New York and London: W. W. Norton & Co., 1978), 79–90.

9. It is worth noting here that Vitruvius’ treatise already contains, in its fifth book, several chapters devoted to the acoustics of theatres. Paragraphs 6–8 in the third chapter refer to the movements, circular and ascendent, of the voice in a resonant theatre vessel.

10. http://www.gavinbryars.com/Pages/listening_room_fr.html

11. Gavin Bryars, “A Man in a Room, Gambling,” in *Parkett* 43, 1995, pp. 52–61.

12. On the other hand, the simple fact of breath would suffice to give the voice an irreducible spatial depth.

13. Muñoz’s text primarily draws from S. W. Erdnase’s *Artifice, Ruse and Subterfuge at the Card Table* (Chicago: Frederick J. Drake & Co., 1902).

14. Gavin Bryars, *ibid.*

15. Not only the “real-timeness” of radio can itself be considered the result of a fictional pact or consented illusion. The very atmosphere of radio listening lends itself to being staged, simulated in various manners, as proven — among many other examples — by the exhibition of Juan Muñoz’s radio works at La Casa Encendida, in Madrid, in collaboration with the Spanish National Radio (RNE), in 2005.

16. Theodor Adorno considers this interiorization a structural fact of the radio phenomenon: "One may even ask—and this bears immediately on the problem of the 'effect' of broadcasting on the listeners—to what extent radio's ear and radio's voice replace the listener's own ear and voice. Technologically, one is justified in speaking of radio's ear and voice because the process by which the electric current is retransformed into acoustic waves is the reverse of the process achieved by the microphone-ear, namely the transformation of acoustic waves into electric waves. . . . It is not entirely out of the question that in a sense his own ears are already displaced by the microphone which 'hears.'" Th. W. Adorno, *Current of Music* (Cambridge: Polity Press, 2008), 372–373.

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