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Performing musical silence: markers, gestures, and embodiments

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Chapter 6. Case Study: Notational Markers for Silences (George Antheil's *Ballet mécanique*)

The original *Ballet mécanique* (1924) by George Antheil is a twenty-minute composition for sixteen mechanical pianos and seven percussionists: mostly a deafening cacophony including alarm bells, airplane propellers, and a fire siren. After eighteen hectic minutes of rhythmic pandemonium, the players suddenly fall silent despite an annoying ringing bell, which seems to last interminably. Then, that too falls silent after a brief piano riff. This awesome silence is the first of many, each progressively longer and more disorienting. The silences are notated in very fast units of time and are astonishing in their effect.

Antheil's use of brutal, measured silence gave me the idea for this dissertation. It encouraged me to question how musical silence is made visible, what it consists of, and what its attributes are. I am particularly fascinated by Antheil's assertion about the silences that "here I had time moving without touching it" (Antheil in Whitesitt, 1989, p. 105). This is a compelling idea: is it possible that by employing silence, a composer could be pushing time forward *without* acting upon it?

The markers for these silences—whether visual, as in the inert mechanical instruments on stage, or notational, as in the meticulous scoring of the rests—serve as a key focus of this chapter. These markers do more than denote absence: they actively configure the audience's anticipation and reception of the audible, effectively making silence a palpable, agitated

Relevant terminology employed in this chapter

Silence is perceived stillness or quietness. There is no true silence, so in this context, silence means relative or sensed silence.

Framing can be created by the (audience) silence surrounding the work; conversely, sounds can frame silences. The edges of the frame may be indicated by markers.

Non-playing refers to the intentional absence of sound production by the performer.

Markers are signals used to *impose* silence, *summon* silence, or *describe* the perception of silence. Markers can also include audience rituals, architectural elements, temporality, and sensory cues that influence our experience of silence.

Markers are not exclusive to silence; they can also signal sounds, traditions, behaviors, actions.

Embodiment is the overall collection of active performer movements, gestures, postures, and facial expressions, as well as passive performer choices such as hairstyle and costume.

Gesture is the movement and alignment of arms and legs, fingers and toes, torso, head, and facial expression, in relation to the instrument.

Pianola a self-playing instrument which operates on compressed air. The notes are controlled by rolls of paper with punched holes that activate individual keys.

presence that is as precisely composed as any musical note. This chapter will investigate the role of these silences within Antheil's work, examining how they function, not as gaps, but as integral, forceful, material components of the composition. The notated rests are emphatic and not connective; they may be described as "notes" in the performance, as sections of black noise, as alternative communications of frenetic pulse and speed.

I will use an example drawn from my own performance practice, in which I collaborated with a choreographer to find new ways of embodying both noise and silence in this artwork. The chapter concludes with a section on markers.

6.1 On *Ballet mécanique*

Before analyzing the silences, here is a glimpse into Antheil's own aesthetic as a pianist and his very physical embodiments at the instrument. This description, published in his autobiography, is drawn from the time he was composing *Ballet mécanique* in the early 1920s:

As you [...] near the home stretch, you think, "What a way to make a living!" Later, when the piece is finished and you've gotten up and bowed and sat down again and mopped up your brow and your all-important hands, you think, 'I wish I were a prizefighter. This next round with the Steinway would be a lot more comfortable in fighting trunks...' In the intermission, between group one and group two, you go to your dressing room and change every stitch you have on you: underwear, shirt, tie, socks, pants, and tails. Your other clothes are soaking wet [...] You are twenty-two years old, trained down to the last pound like a boxer. You do not overeat, smoke, or drink, and you work six to eight hours a day at a piano with a special keyboard in which the keys are so hard to press down that when you come to your concert grand at night you seem, literally, to be riding a fleecy cloud, so easy is its keyboard action. Before each concert, of course, you eat nothing at all. (Antheil, 1945, pp. 3–4)

This text, exaggerated as it is, gives a clear idea of both Antheil's disciplined practice and his onstage extravagance. The comparison to boxing is no accident, as he was notorious for his aggressive approach to the instrument and the dramatic embodiment of his musical ideas. About the composition itself, he wrote:

As I saw it, my *Ballet mécanique* (properly played!) was streamlined, glistening, cold, often as musically silent as interplanetary space, and also often as hot as an electric furnace, but always attempting at least to operate on new principles of construction beyond the normal fixed (since Beethoven's Ninth and

Bruckner) boundaries. [...] it was a 'try' towards a new form, new musical conception, extending, I think, into the future. (Antheil, 1945, p. 140)

The original version of *Ballet mécanique* is very rarely performed. Antheil's 1924 composition was so radical and so badly received that he felt compelled to re-write it in 1953, reducing it to a shadow of its former self. In doing so, he completely suppressed his avant-garde silences. The revised version is shorter, less hectic, more restrained in its instrumentation, and shows a strong influence of movie music (he was working in Hollywood in the 1950s). The original version was forgotten and remained unperformed until a revival in 2000. Antheil thus never got the credit he deserved for his radical rests, because no one ever heard them.⁴⁸

The two existing published versions are each problematic. The 1924 original involves 16 mechanical pianos (which can be played by midi instruments now) and nearly unplayable virtuosic notations. Meanwhile, the 1953 version is fun to listen to and perform, but has been trimmed of most of its avant-garde repetitions, its very long blocks of noisy sound, and all of its silences. In 2013, the SinusTon Festival in Magdeburg, Germany, commissioned me and Paul Lehrman to make an arrangement focused on the sounds and the electronics. Subsequent versions were refined for the *Société Musique Contemporaine de Québec* in 2017 and Ballet Zürich in 2024.

Antheil's mechanistic vision inspired Lehrman and me to create our new arrangement of *Ballet mécanique*. I took the original score and shortened parts of it, focusing on Antheil's most intricate and virtuosic piano sound, on the detailed xylophone parts, and on the dramatic eighth-note pulse that underlies the structure. Antheil scholar and MIDI-expert Paul Lehrman created the sound files for each of the instruments. Percussion parts were based on recordings made in Jordan Hall, Boston. Others were created digitally. I recorded the piano track in 2023 at Tufts University. The result is a 23-instrument digital recording. A 24th track is the click track for the pianist, which I hear via a discreet earpiece, and that allows me to perform live in sync with the digital instruments. One of the problems that the arrangement addresses is the speed of certain instruments, which cannot be played at that tempo by human musicians. This includes my piano part, so that sometimes I assist and sometimes I am assisted by the digital performers to achieve an otherwise impossible level of virtuosity onstage.

⁴⁸ The work was only performed twice in his lifetime: once in Paris, and two years later in New York. The first performance led to a riot, and was a *succès de scandale*; the New York premiere was a technical and public relations disaster, and the ending was disrupted by audience protest and a malfunctioning siren.

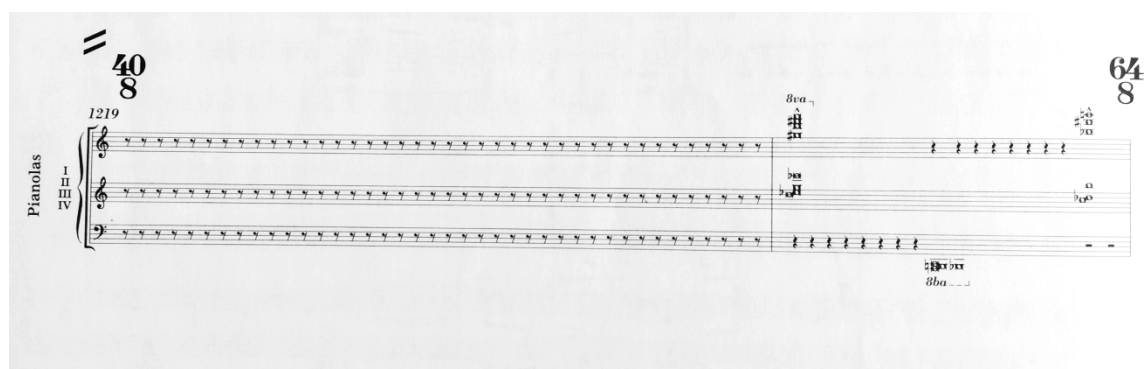


Figure 71: an agitated, *prestissimo* silence from *Ballet mécanique* (Schirmer, 2000)

6.2 The Rests in *Ballet mécanique*

The placement of the rests in the original composition (and in our arrangement) is impressive. During long minutes of crashing *fortississimo*, Antheil builds up the tension for the massive silences by placing a series of irregular silences into the music, though never exceeding three eighth notes. The music is incessant, overpowering, and overwhelmingly loud. From bar 1138 on, he begins stopping and starting the noise by inserting gradually longer chunks of rests. A few seconds later, in bar 1221, there is the most arresting silence hitherto composed: 64 eighth-note rests in a row, for a total of eighteen seconds of silence.⁴⁹ This comes during the finale of possibly the loudest piece of composed classical music.

► VIDEO LINK: <https://www.researchcatalogue.net/view/1712958/2937735#tool-2938158>

Explanatory Video 1: This clip is an introduction to the silences of *Ballet mécanique*, drawn from a performance for robot orchestra in Washington, DC.

Antheil's silence provocation has remained largely unnoticed by musicians, except for Maurice Peress's guide to conducting American music:

[...] an elaborate sacrifice is dramatized in the closing moments of the piece when, after a fiendish cadenza, the Pianola—the machine—breaks down. Antheil may very well have borrowed this notion from his Third Piano Sonata, *Death of Machines* (1923). The Pianola stutters and becomes stuck on a single phrase repeated over and over again: a trill and leaping clusters, followed by a moment of silence. As the “machine” winds down, the phrase is stretched out even more,

⁴⁹ In fact, the silence should clock in at twelve-and-a-half seconds, but that tempo (152=quarter note) is impossible for human musicians, making the actual silence much longer in a performance.

and Antheil introduces increasingly longer silences. According to Slonimsky, this is the first time in the history of western music that silence is used as an integral part of a musical composition. [...] To my relief, our audience got the idea and did not interrupt the twenty-second-long silence with applause.⁵⁰ (Peress, 2004, p. 124)

Antheil's explanation of his intentions came in a letter to poet Ezra Pound:

Here I stopped. Here was the dead line, the brink of the precipice. Here at the end of this composition where in long stretches no single sound occurs and time itself acts as music; here was the ultimate fulfillment of my poetry; here I had time moving without touching it. (Antheil, in Whitesitt, 1989, p. 105)

The hammering intensity of Antheil's approach to silence comes through in this quotation about Igor Stravinsky, on whom Antheil had modeled his musical style. As with Stravinsky, silence for Antheil was certainly not a passive waiting:

The silences of rests took on a fierce intensity—I could see the beats hammering away in his brain as he breathed in anger—so unlike the passive waiting or the common injudicious trimming of the supposed non-music of rests. (Smit, 1971, p. 9)

► AUDIO EXAMPLE: <https://www.researchcatalogue.net/view/1712958/2937735#tool-2938157>

On page 129, almost at the end of the piece, comes an extremely long, empty bar containing 64 eighth notes of silence, perhaps the most dramatically printed page of silence ever.

⁵⁰ I had lunch with Peress shortly after this performance, and he admitted how much he worried about these silences, dreading them in concert. His view seems shared by conductor René Bosc, with whom I performed *Ballet mécanique* at Radio France in 2004. Bosc recalled that the conductor has nothing to do during these long pauses because there are no emotions to communicate. He found that to be an uncomfortable position.

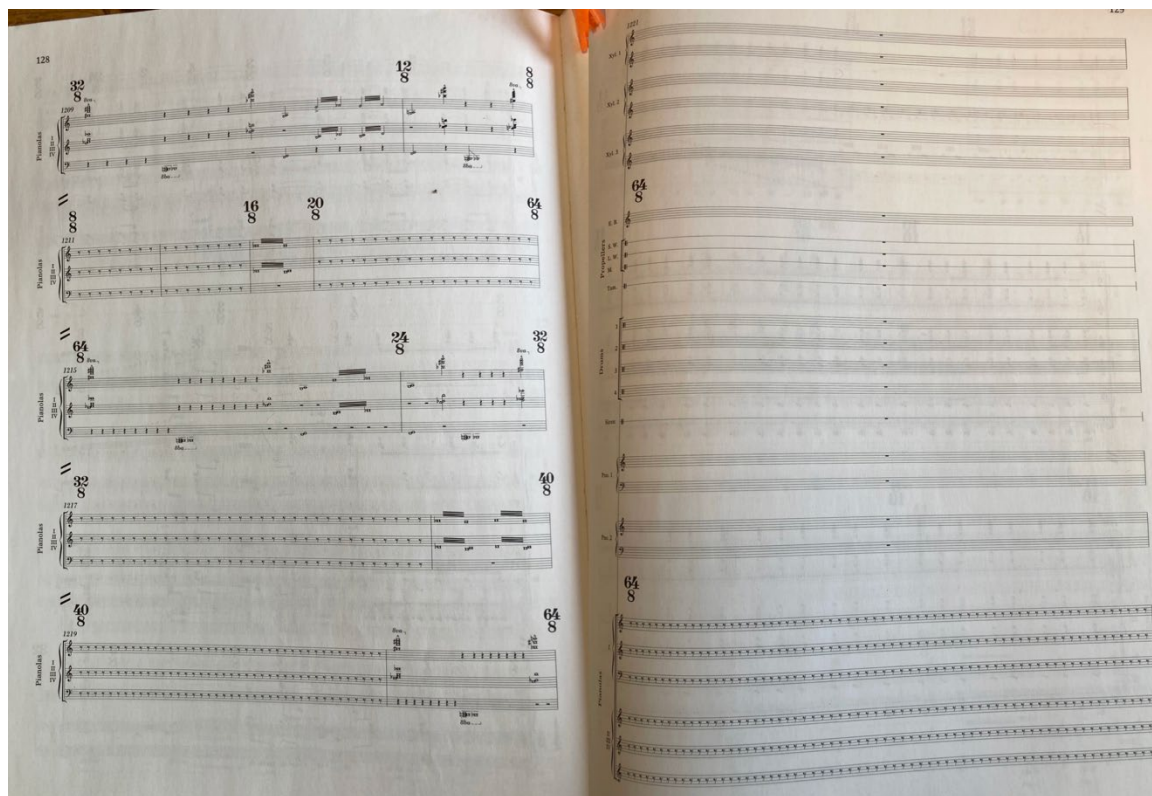


Figure 72: pages from the *Ballet mécanique* score showing increasingly long silences (Schirmer, 2000)

Musicologist Julia Schmidt-Pirro describes the effect of these long silences:

[...] the music accelerates seemingly beyond control. Following this near-chaotic passage, a musical turning point is suddenly reached: an unusually long passage of silence. [...] Coming right after the preceding masses of sounds, this sudden silence acts as a space where previous notes seem to echo. (Schmidt-Pirro, 2006, p. 412)

That echoing effect, like the residue of noise that one hears after a loud rock concert or the silence when one struggles into the house during a windstorm, is the startling experience of these silences. Pirro continues:

One might argue that, in employing these passages of silence, Antheil does not so much interrupt sound with silence as invoke sound through its absence. (Schmidt-Pirro, 2006, p. 412)

I like Schmidt-Pirro's concept of evoking sound through its absence, similar to examples from [Pärt](#) and even [Chopin](#). But my own interpretation is slightly different: Antheil saw silence as a means of emphasizing the radical timescale of *Ballet mécanique*. The silences have a functional quality of interruption, making the noises before and after seem louder. But they serve more than that: the silences get longer and longer, becoming structural

elements in their own right. The machine stops and starts, stops and starts, showing that Antheil is in control and that the machine obeys his will. The markers for these silences are the machinery arrayed over the stage: electric bells, a siren, two airplane propellers, and sixteen player pianos.⁵¹ During the long silences, the non-playing of these dramatic instruments marks noisy silence in the same way that the metal band [Dead Territory](#) embodies it in their interpretation of Cage's *4'33"*: by evoking an intensely dramatic and fraught situation that would in normal circumstances call forth a wall of sound.

The prescribed tempo in *Ballet mécanique* is so rapid that the performers cannot realistically count eighth notes in real-time. Yet Antheil deliberately chose to notate the silences in tiny slices of time as long sequences of eighth-note rests. His score depicts something the audience and performers are experiencing: overwhelming silence *and* speed, the “death of machines,” a sort of comic desperation that would be seen a decade later in Charlie Chaplin's film *Modern Times* (1936).

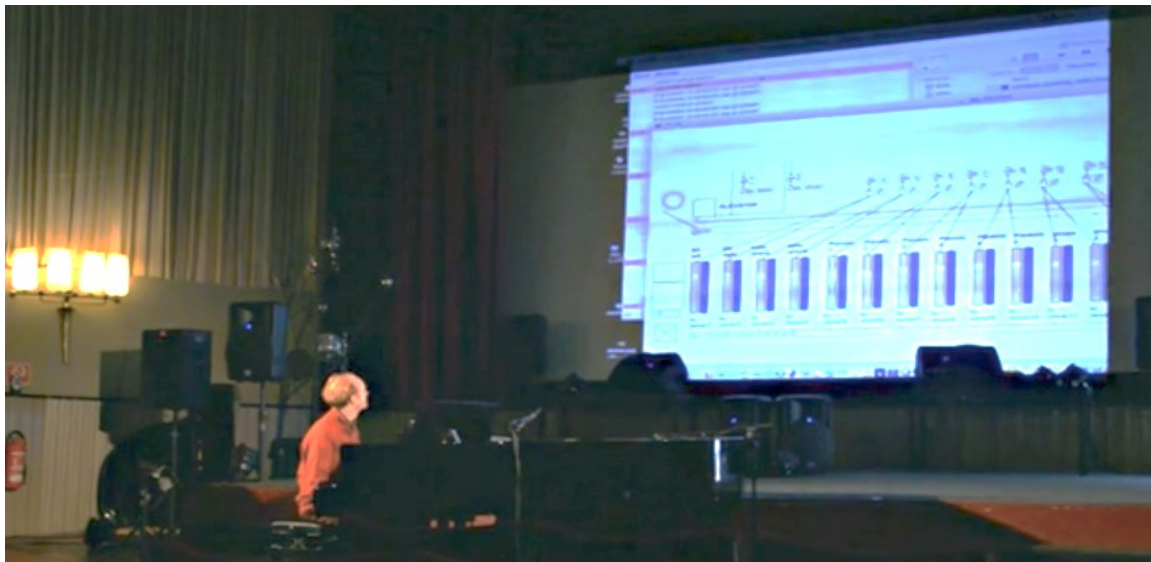


Figure 73: balancing the first eight-channel installation of *Ballet mécanique* with midi expert Paul Lehrman and composer Oliver Schneller at the SinusTon Festival in Magdeburg (author's photo, 2013)

Antheil was using sounds and silence as structural components, as building blocks in his “time-space continuum” (Oja, 2001, p. 84). Antheil's time-space continuum, inspired by the Cubists and Ezra Pound, suggested that art made from blocks could exist in simultaneity to itself. Time and space could be conflated and confused through bold

⁵¹ In our Zürich arrangement, the missing mechanical instrumentation was figuratively, though not literally, replaced by the dancers.

juxtapositions of elements. *Ballet mécanique* represents Antheil's most successful attempt to illustrate his theory.



Figure 74: This photo is from the première performance with Ballet Zürich, January 20, 2024, of my arrangement of *Ballet mécanique* for solo piano and 64-channel sound system, with sound design by Paul Lehrman, choreography by Meryl Tankard, and projections by Régis Lansac (Zürich Opernhaus, 2024).

Did Antheil regret placing these extended and chronometrically precise voids amid the insanity of the *Ballet mécanique* and its airplane propellers, sirens, and alarm bells? This suggestion is supported by Antheil's revision of the score thirty years later, in which he removed all the silences. He was resentful of his artwork's scornful reception at Carnegie Hall in 1927 and felt it had ruined his career. But he was wrong to silence himself. I believe that the original silences were radically brilliant. The careful and methodical buildup of longer and longer rests is deliberate and compelling, a clear compositional strategy. Perhaps buildup is the wrong word, however. Each rest comes as a total surprise—the pauses are in no way prepared by the music. This represents a conceptual difference with the silences in Beethoven's opus 111, which are prepared by his notes (see Chapter 5). Antheil's music just abruptly stops, and then it continues. If there is an emotion, it is one of astonishment.

There is also a rather fundamental difference between Antheil's and Cage's approach to silence. Here, Cage reflects on materiality in reference to silence:

Now what about material: is it interesting? It is and it isn't. But one thing is certain. If one is making something which is to be nothing, the one making must love and be patient with the material he chooses. Otherwise, he calls attention

to the material, which is precisely something, whereas it was nothing that was being made; or he calls attention to himself, whereas nothing is anonymous.
(Cage, 1961, p. 114)

This is the opposite of what Antheil is doing: he is neither loving nor patient. More specifically, his use of eighth-note rests emphatically *calls attention to* this nothing. Antheil's nothing is not anonymous, which is why I found it such a revelation. This is silence as materiality, silence as a thing, *silence as noise*. I am encouraged in this assumption by Antheil's letters (Whitesitt, 1989, p. 105), by Ezra Pound's analyses of Antheil's music, and most of all by the actual manuscript, written in Antheil's hand.

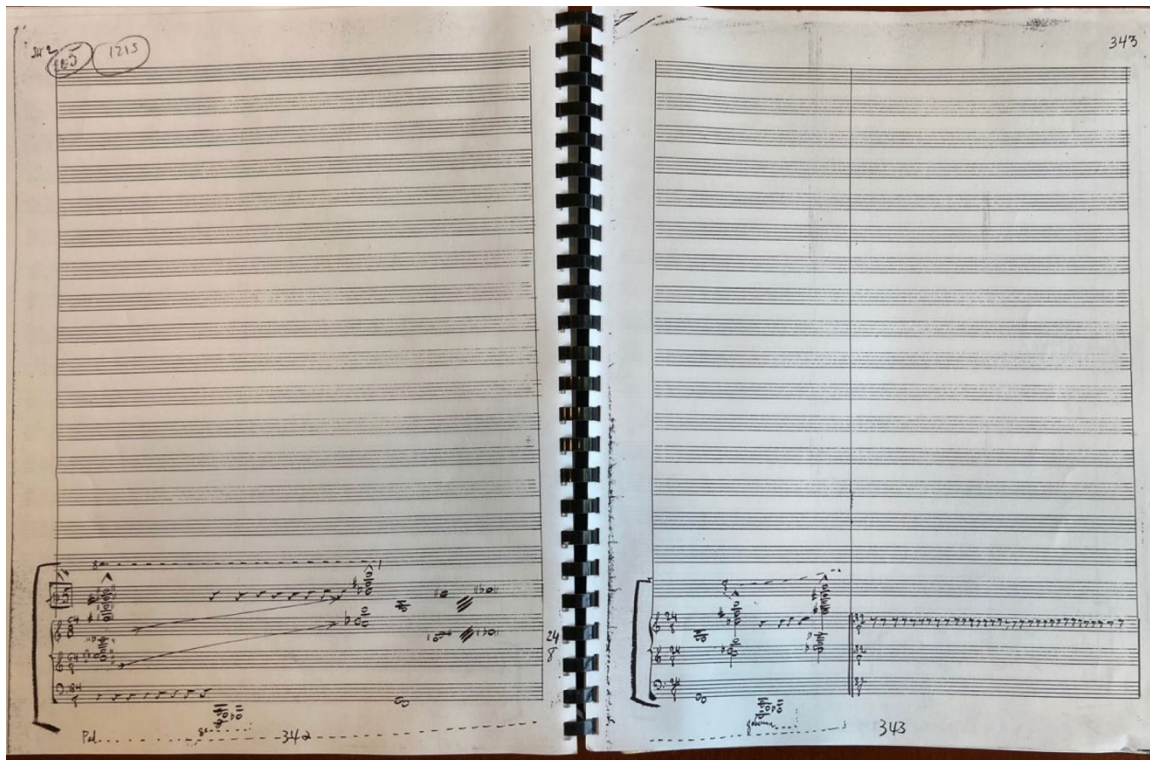


Figure 75: photocopy of Antheil's manuscript (1923/24) showing the full bar of 32 eighth-note rests on page 343 (New York Public Library for the Performing Arts)

The piano parts are notated differently than the percussion or other instrumental parts. The piano parts were intended to be mechanical pianos—hence the eighth note rests could be reminiscent of the punched holes in pianola rolls. I like this confluence of technology and graphic representation. A modern pianist performing this score does not need the restlessness of that representation. But the score contains its roots in the mechanisms that Antheil imagined, made tangible in an ever-turning piano roll.

Even if they do not see the notated score and do not know the history of the pianos, the audience feels the flowing urgency of these silences. The preceding rapid succession of eighth-note notes in Antheil's music might lead the audience to perceive the silences as fast and agitated too, echoing the mechanical nature of the pianolas, which constantly advance with relentless, regular motion. This perception of an audible “shadow” or “afterimage” could imbue the silences with a sense of speed and urgency, as though they are being propelled forward—metaphorically by Antheil's “time flowing through it,” and literally by the momentum of the composition's machinery. This perception may come from the presence of a constant *fast pulse in sound* that extends or continues (like an echo) when the sound abruptly stops.

The pianolas suggest an unperturbed, flattened approach to metered time that does not distinguish between strong and weak beats. Antheil chose a meter of 8/8 (in place of 4/4) or more extremely 64/8 (in place of 32/4). By choosing a meter measured in eighth notes, he was ensuring that there would be neither strong nor weak beats.

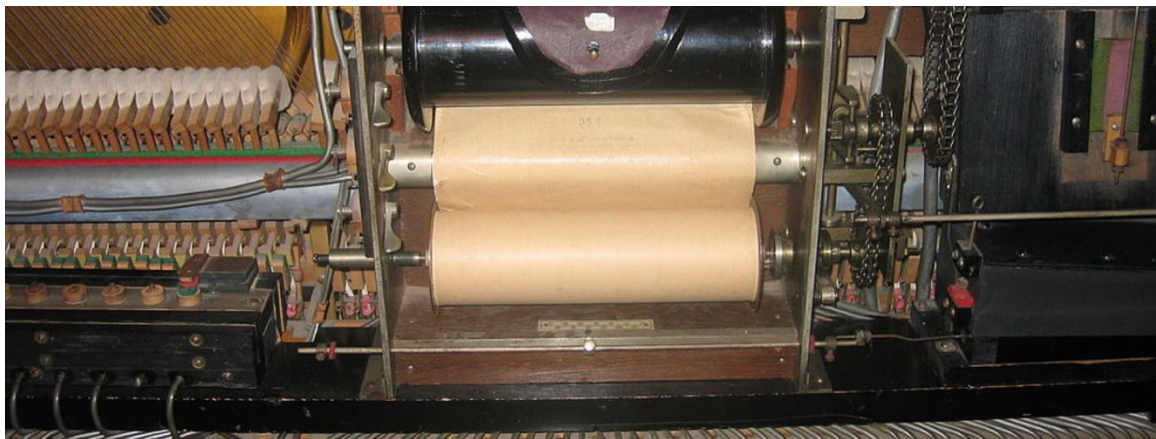


Figure 76: The inside of a pianola reveals the paper roll, the mechanism, and the air tubes that connect to the piano hammers. Unpunched paper equals silence. The holes in the paper equal specific piano notes. In this photograph, the paper is wound to the end, so no holes are yet visible. This picture is thus of the silence preceding the music. (Mechanical Music Museum, Northleach, U.K.)

Antheil could have (and indeed maybe should have) notated the empty pianola measures with a number of beats (quarter notes were the standard), a duration in seconds, or simply a time signature. His choice to notate excessive numbers of eighth-note rests is either pointless micromanagement or it is a way of communicating something important about the nature of the silence. Although a pianola does not *play* silence, perhaps the rows of eighth-note rests represent the continuous rotation of the paper roll. The eighths could

then be seen as the quantification of time, linked to machinery and industrialization, again heralding the spirit of Charlie Chaplin's films.⁵²

Antheil wrote the eighth notes in the automated pianola staff on his score. He notated nothing (not even staves) in the manuscript for the live performers during this cascade of silences. This reinforces the idea of mechanical, inexorable, chopped-up silences: these *are* the silences of the machine. A 64/8 bar for Antheil makes a statement about sixty-four eighth-note divisions of time, which is not 32 quarter notes, nor 16 half notes. Also, the manner in which he notates the rests by hand, in a messy and confused script, recalls the hectic rush visible in Beethoven's manuscript of [opus 111](#). Antheil was in a hurry but still took the trouble to write out the detailed rests physically.

Antheil is playing with the audience's expectations. The silences unfold in a fast tempo and are often prefaced with extra loud sounds (electric bells). After a few bells and sirens, the audience wonders if they are markers for the silences. But they are not. There is no consistency in the pattern that enables prediction. Silence comes abruptly, at unexpected moments. The effect is that the audience becomes paralyzed with a kind of fear at the sudden, awful silence; their ears run out of breath.

Onstage as a performer, the tempo feels incredible, inevitable, awesome. By the time I arrive at the silences, the action up until then has been so wild and relentless that I am shaking. I fear that my breathing is louder than the silence and that my body will collapse under the pressure. What excites me as a pianist is that *Ballet mécanique* treats silence not as a gap nor an absence but rather as a thick, heavy, powerful substance. The deafening quality of the silence arises because the preceding cacophony sets up an intense auditory expectation that when abruptly met with silence, leaves a resonant void. This amplified silence feels as loud and as materially present as the preceding rush of sound. The highly mechanized experience of this composition gives it an impersonal aggression in which the silence is as palpable, as "thingy" (Voegelin's term) as the noise.

In some audience members, it may evoke fear or astonishment, but it could also recall and emphasize the loudness and obsessive ostinato rhythms, making present the machines and instruments on stage. By incorporating silence as an element of the music, Antheil

⁵² A connection is often made between Antheil and Chaplin, because Fernand Leger and Dudley Murphy used a stylized cartoon of Charlie Chaplin ("Charlot") in the introduction to the *Ballet mécanique* film. However, Antheil was not yet aware of this when he wrote the music. It was simply in the air of the times, particularly for the Dadaists and Futurists, for whom Charlot's antic films merged dystopian and utopian futures. *Modern Times*, Chaplin's great satire of industrialization, was released twelve years after *Ballet mécanique*.

emphasizes the mechanical nature of the piece, highlighting the start-stop action of machines.⁵³

After I had written it, I felt that now, finally, I had said everything I had to say in this strange, cold, dreamlike, ultraviolet-light medium. (Antheil, 1945, p. 137)

The effect is to make the resumption of sound more striking and to give the composition a disjointed, almost cinematic pacing, akin to the editing of a film. Each strange, cold, ultraviolet onslaught of silence is followed by an onslaught of sound. The silence contains no affect, no emotion, no meaning. It is not multidimensional, to use Margulis's term. Antheil refers to the silence of interplanetary space, and the heat of an electric furnace, but these are not rhetorical notes nor silences in the sense of serving a narrative function within the music. The silences deliberately exist outside and separate from the music around them. If any emotion is communicated, then it is astonishment, surprise, or a sensation of overwhelming intensity. And that surprise-separation affect suggests control and power, reinforced by the mechanization of the instruments that frame the silences. In Antheil's futurist 1920s world, silence becomes its own kind of thundering, a time moving without us touching it.



Figure 77: the author with dancers of the Zürich Ballet performing the “mechanization” via choreographic embodiments (Opernhaus Zürich, 2024)

⁵³ Antheil was, like the Futurists, consumed with technological “progress,” as reflected in the titles of his compositions during this period: *Sonate für Radio*, *Death of Machines*, *Airplane Sonata*, *Mechanisms*, etc.

6.3 Performing *Ballet mécanique* with Ballet Zürich

My collaboration in 2024 with Ballet Zürich dispensed with the eponymous film (which, in any case, Antheil was not involved with) and attempted to create embodiments through a focus on one musician (myself) and eighteen dancers. We arranged the music for solo piano and 64-channel playback to create a three-dimensional sonic experience surrounding the audience and to intensify the experience of time moving inexorably through the silences; and of the silences being relentlessly pulsed in eighth notes.

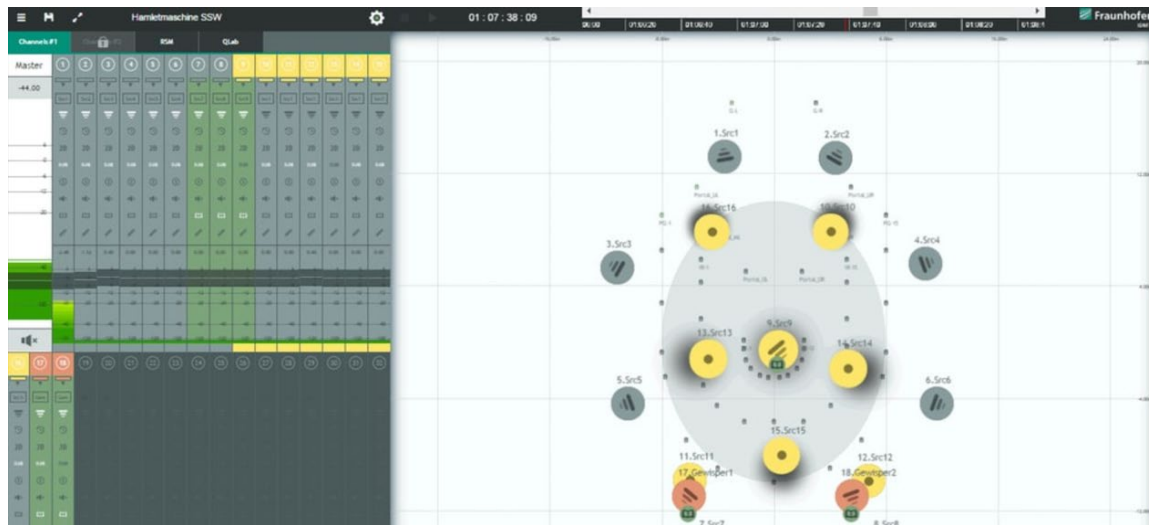


Figure 78: testing the software used for distributing the sound around the hall (Opernhaus Zürich, 2024)

Like any complex collaboration between many actors and within the administrative context of a busy opera house, this project did not permit certain types of experimentation characteristic of a research project. But using a 64-channel mixing board, 64 focused speakers, and an array of sub-woofers, we manipulated the original recording so that the sounds of the 23 instruments could be moved around the hall in real-time. This was particularly effective with the sirens, which gained in intensity by traveling through the hall in three dimensions. The pianola sounds were then set to fixed positions so that they appeared to each originate from a pre-determined location in the hall. Our purpose was an attempt to come as close as possible to Antheil's dream of a lone pianist surrounded by mechanical instruments. Following this vision, sound engineers Paul Lehrman (Tufts University) and Raphael Paciorek (Opernhaus Zürich) created an immersive electronic "performance" of our version of *Ballet mécanique*. Simultaneously, I was working with the dancers and the choreographer. This video documents some of our work in rehearsals.



Explanatory Video 2: experimenting with silences and embodiments during rehearsals of *Ballet mécanique* with Ballet Zürich (2024)

▶ VIDEO LINK: <https://www.researchcatalogue.net/view/1712958/2937742#tool-2938921>

During the weeks leading up to the premiere, I continually experimented with new ways of performing silence. The choreography by Meryl Tankard gave primacy to Antheil's assault on hearing as if the dancers were being attacked by walls of mechanized sound.⁵⁴ This made the rests towards the end all the more remarkable, for their unexpected absences and their "loudness."

⁵⁴ The choreographic approach was more narrative than the non-linear approach that Antheil's blocks of sound/silence may imply.



Figure 79: Rehearsing *Ballet mécanique* in Zürich: my hands curl rapidly off the piano keys (inspired by Richter) to emphasize the precision start of a silence. The oversized jacket also catches the light, amplifying my gestures to the scale of the theater (author's photo, 2024).

From the piano, I tried different means of embodying the silences, especially influenced by the Beethoven performances in Chapter 5. Gestures like Richter's "reverse boxer" or Kissin's "dentist" took on new strength when employed in Antheil's modernist rests. No longer expressing Beethoven's anguish nor the isolation of the "lonely prince," these embodiments launched the thundering silences and granted the audience some insight into the speed of the notation and the internal pulse I was feeling (see the explanatory video above). These movements also came to embody the frenzy and restless precision of Antheil's silences.

German composer Helmut Lachenmann writes about another "restless" silence:

The silence into which Nono's late works lead us is a *fortissimo* of agitated perception. It is not the sort of silence in which human searching comes to rest, but rather one in which it is recharged with strength and the sort of restlessness which sharpens our senses and makes us impatient with the contradictions of reality. (Lachenmann, 1999, p. 27)

This fortissimo of agitated perception in Nono's music arises from the complexity of the music, the denseness of its constant changes, and the technical difficulties of performing it. Antheil's music is simpler, in architectonic blocks that are stacked and arranged in patterns. Yet the restlessness of the silences is very similar, sharpening our senses and

heightening the contradictions of the environment. During these silences, the dancers also create (inadvertent) sounds with their moving bodies. These were intended more as markers for movement or for action rather than markers for silence but served also as a reminder of the disconnected, restless nature of these silences. Silences were also embodied by the dancers through posed attitudes, collapse, or frenetic motions. Contrary to our expectations that silence should map to stillness in the choreography, it transpired that high-intensity gestures afforded meaning to the stillness of the music, and that these gestures offered unexpected ways of communicating Antheil's rests to the audience.

As with Cage's *4'33"*, the stillness anticipated in conventional musical performances is subverted, echoing his use of high-intensity gestures that articulate the rests in unexpected manners. In Cage's silence, every rustle, cough, or murmur heightens the listener's awareness, emphasizing the restlessness and connectivity of the environment, making the audience acutely aware of the sounds that are always present but seldom listened to. Similarly, Antheil's silent intervals act not just as a negation of music but as an exposition, drawing the audience's attention to the "noise" that surrounds the supposed stillness.

Working almost a century later than Antheil but concentrating on similar themes, the South African experimental audio artist and DJ Jacques van Zyl writes about his own music:

In a profoundly unsilent world, noise stands in for silence. Amplified to a roar, stretched, compressed and filtered, it becomes a thundering black backdrop to how small experience becomes by having to filter out detail [...] On the other hand, black noise is a space—the negative roar left behind after the sudden ending of any continuous sound field. It's not unlike the state sought in the practice of meditation, but more immanent and beyond one's control, and commonly only of short duration. (Zyl, 2018)

Zyl's musical idea merges with the negative roar of Antheil's silence: the thundering black backdrop that shrinks experience. What Antheil might like us to hear is the negative roar, the ultimately uncontrollable. And that is much like experiencing [Zyl's black noise](#) after hearing extremely loud sounds. For that reason, I contend that these silences do not serve a connecting function. They are *not*, without an element of *knot*.

6.4 Markers

Antheil integrates silence as a musical element that impacts the structural and expressive dynamics of the piece. During *Ballet mécanique*, as at a rock concert, we revel in the disconnections of the thundering backdrop, and the noisy silence. The silences are separative in the sense that they physically interrupt and destabilize the notes. This does not mean that they are the structure. But they emphatically influence the perception of the structure. The way these silences are presented and perceived can be significantly influenced by embodied markers—visual or physical cues from the performers that highlight and contextualize these moments of silence.

- **Visual Markers:** The mechanical instruments themselves, such as player pianos and percussion instruments, along with the anti-traditional, Dadaist objects (airplane propellers, sirens, and electric bells), serve as physical, theatrical markers that underscore the silences. When these instruments abruptly cease making sound, their visual presence continues to resonate with the audience, enhancing the impact of the silence that follows. The sudden absence of mechanical noise makes the silence more profound, with the visual reminder of the instrument's capacity for noise serving to heighten the sensory contrast, just as in Dead Territory's performance of *4'33"*.
- **Performer Interactions:** The actions and reactions of the performers during the moments of silence act as embodied markers. In our Zürich workshops, we started with the assumption that a performer might abruptly halt their movement, freeze in place, or execute a dramatic cessation of activity that coincides with the onset of silence. But soon, we moved on to a more complex interpretation, which emphasized the agitation of the silences. Actions occurred, dancers collapsed, and the pianist froze in increasingly dramatic poses. Such visual cues can significantly shape the audience's experience and interpretation of these silent intervals, making them more deliberate and integral to the performance.
- **Choreographic Elements:** In staged performances of *Ballet mécanique*, choreography and stage direction can play a crucial role in marking silence. The way performers move or do not move, the lighting changes, the positioning of performers on stage, and the video projections all act as markers that signal and frame both the sounds and the silences, especially guiding the audience's attention to the long and frenetic rests as a potent element of the composition. Although my choreographic choices were limited by the piano, the choreographer chose a large white dinner jacket for me, which "amplified" my gestures, but also favored storytelling over abstraction.
- **Inadvertent sounds:** the noise of the dancer's toes brushing the floor, their breathing, the rustles of their costumes, the pounding of their feet during the energetic sections—all of these created a soundscape that was audible on stage and in the front rows. My experience of the performance was imbued with these "extra" sounds, meaning that, for the artists and anyone near the stage, silence was impossible.
- **Silence as "not":** the silences resonate not as interludes but as profound embodiments of non-existence—what Lachenmann describes as a "fortissimo of agitated perception." Yet, where Lachenmann sees a charging of human perception, Antheil's approach engenders a distinct

disconnection, a deliberate suspension of playing and performing. I have argued in this chapter that these silences, far from incidental, are voids deliberately structured within the insane noise and agitated clamor of the composition. They articulate a “not” that is about absence, negating not just sound but the very presence and continuity of the musical narrative. In this stark negation, Antheil compels the audience to confront non-being, non-playing—a radical quiet that amplifies the chaotic roar that precedes and follows. The embodied silences in Antheil’s score, marked by the dancers’ frenetic stillness or sudden collapses, do not merely punctuate; they enable time’s flow, creating a disconnection where each eighth note rest serves a pulsating purpose.

These visual and audible markers do more than signal a change in sound; they enrich the audience’s engagement, allowing the silences to communicate as powerfully as the sounds. They transform the silence from an absence of noise into a dynamic noise of another kind—the noise left behind by the notes, a noisy silence, Zyl’s black noise. In Antheil’s sphere, silence emerges not as a connector but as a profound disruptor, a radical element that roars.