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Performing Musical Silence: Markers, Gestures, and Embodiments

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Chapter 4 on gestures in Cage originated with research I did with Szymon Hernik at the Royal Academy of Art (KABK) as a visual investigation into the bookends and symbols for silence. This was published in Warsaw as *Silence|Noise* (Livingston & Hernik, 2020).

Chapter 5 on gestures in Beethoven is based on research that I first presented at the 13th Society for Artistic Research (SAR) Conference at Bauhaus-Universität Weimar on July 2, 2022. Subsequently, I presented a newer version of this chapter at the 25th annual conference of the Dutch-Flemish Society for Music Theory in Amsterdam on March 2, 2024.

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Table of Contents

Acknowledgments.....	iv
Chapter 1. Introduction, Concepts, and Terminology	1
Chapter 2. Markers, Notations, Dimensions.....	31
2.1 Introduction	31
2.2 Potential Markers for Silence.....	32
2.3 Markers and Framing	53
2.4 Eloquent and Non-Eloquent Silences	56
2.5 Multidimensionalities of Silence	60
Chapter 3. A Noisy Archive of Eloquent Silences.....	63
Part 1: Integrated Silences	65
Part 2: Inherent Silence: Works Made of Silence.....	72
Part 3: Silent Discourse	75
Part 4: Silences that Arise from the Work or Context (Meta-Silences).....	80
Part 5: Silencings	87
Chapter 4. Case Study: Audible Markers for Silences (John Cage's 4'33")	93
4.1 The Checklist	95
4.2 Learning From the Waveforms.....	98
4.3 Attitudes of Silence in John Cage's 4'33"	102
4.4 Updating the Checklist	118
Chapter 5. Case Study: Visual Markers for Silences (Beethoven's opus 111)	123
5.1 The Sonata.....	124
5.2 Examples: Picturing Silence Through Embodiments	130
5.3 Embodiments of Eloquent Silence	144
5.4 Coda	149
Chapter 6. Case Study: Notational Markers for Silences (George Antheil's <i>Ballet mécanique</i>) ..	150
6.1 On <i>Ballet mécanique</i>	151
6.2 The Rests in <i>Ballet mécanique</i>	153
6.3 Performing <i>Ballet mécanique</i> with Ballet Zürich.....	162
6.4 Markers	166
Chapter 7. Conclusion	168
7.1 Conceptual Contributions	170
7.2 Practical Contributions	171
7.3 Ideas for Future Research	181
7.4 Coda	185
Bibliography	187
Summary	199
Samenvatting	202
Curriculum Vitae	207

Chapter 1. Introduction, Concepts, and Terminology

The word *silence* encompasses a multitude of meanings and is used in a wide variety of ways across disciplines, media, and cultures. Silence can be subject, verb, and object. It can be societal, religious, mindful, meditative, diplomatic, political, aggressive, or punitive. As a classical conservatory student in the 1990s, I performed through or past the rests in the score, bestowing little attention on them. During a rest, I focused solely on counting for myself or retaining the attention of the audience. It had not yet occurred to me that silence could be malleable in the same way that sound is; or rather in its own way, in another way. Discovering the silences of George Antheil’s *Ballet mécanique*, which I experienced as some of the noisiest, most brutal rests in the history of classical music, was a revelation. After performing Antheil’s breathless, nervous, precision silences, I went back to the piano with new ears and a fresh attitude, trying to understand performed silences and ask new questions.

What are the contexts that potentially affect musical silences? What are these rests that musicians easily take for granted? What are the silences in which performers or audiences willingly or unwillingly participate? In this research project, I will experiment with the performance of silences. I will act against vague assumptions about silence, consider the ways it is notated, and propose new interpretations for “playing” silence in music.

In western composed music, musical silences are usually written as shorthand signs called rests. These notations do not relate to the spatial context or acoustics of the performance venue, nor do they take the physicality or instrument of the performer into account. They may not even signify silence. While musical notes are often qualified and quantified in the score (via extra markings that indicate instrument, dynamic, nuance, duration, pitch, or accents), silence is notated in only one dimension: duration. This lack of notational scope seems to deny the wide range of affects that silence can convey, the many functions it can embody, and the information it can transmit.¹

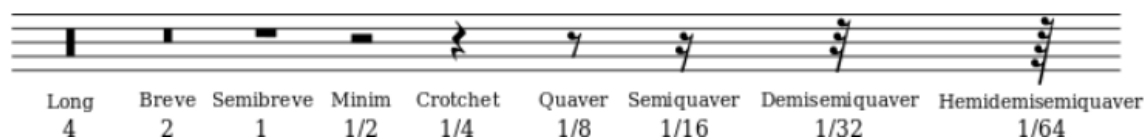


Figure 1: common rests conveying a single dimension (duration) in Western classical music ([https://en.wikipedia.org/wiki/Rest_\(music\)#/media/File:Music_rests.svg](https://en.wikipedia.org/wiki/Rest_(music)#/media/File:Music_rests.svg))

¹ Luigi Nono’s *Fragmente - Stille, An Diotima* quartet is a notable exception: his silences are labeled poetically, for example “with fancy free” (Cobussen, 2005).

Not only the notation of silence is one-dimensional. The literature on silence often seems insufficient. “Criticism and structural analysis usually focus on sounding musical events, leaving silence to be considered incidental, a mere accessory to the work proper” (Littlefield, 1996, p. 219). Classical music theory and history texts largely omit discussions of silence in music. Silence is rarely taught in conservatories. Textbooks and curricula also remain silent on silence. *The New Grove Dictionary of Music and Musicians* did not contain an entry on silence for 130 years, as musicologist Jenny Doctor (one of the editors of the 2001 edition) remarks:

There was a comprehensive lack of recognition of this term, this concept, this entity as a music-relevant subject, the lack of recognition itself symbolic of the role silence plays generally in music-related discourse. (Doctor, 2017, p. 15)

Indeed, silence in conversation, silence in society, silence in architecture, silence in psychology, and silence in diplomacy are all better chronicled than silence in music. In recent years, that imbalance has begun to change, and I situate my research as part of a new interest in musical silence, influenced by John Cage, by the field of sound art, and by non-musical agents such as noise pollution, the Coronavirus and the effects of global lockdowns.

Research Question

My experimentation at and around the piano has resulted in a question that will guide this research project:

How can performers engage with the multiple dimensions of silence in composed music?

The experience of performing and teaching silences has led me to question multiple aspects of silence. These sub-questions might be summarized as a problematization of the “rest” through a fascination for embodiment and the visual:

- What are potential *markers*² of the multidimensionality of musical silence, and how do they shape our experience?
- How do performers embody silence? Is there a gestural vocabulary of silence?
- What does performed silence *look* like? Can the visual component of musical silence be stronger than the auditory?
- Can silence serve a connective as well as a disconnective function in music?

² By markers I mean any cue which leads the audience to expect or experience silence. Markers can be audible or visual, or both; they can be performative or not. They can be iconic, notational, architectural, or ritual. I will define markers in Chapter 2, and illustrate them in the archive and the case studies.

I explore these questions through several strands of my artistic practice: through performing two classic(al) compositions (the piano sonata op. 111 by Ludwig Van Beethoven and 4'33" by John Cage); through George Antheil's modernist *Ballet mécanique*, as well as through many examples of pianistic silences from my performative practice, which constitute a Noisy Archive of silence.

This topic is relevant because there are gaps in the scholarly and artistic literature:

- The classical "rest" seems insufficient to represent the variety of musical silences.
- There is little visual analysis of what performed silences look like.
- There is little study of embodied or gestural silence.

I suggest that these gaps are a result of some common misconceptions:

- an assumption of silence as the *opposite* of sound;
- the tendency to evaluate silence as a *zero-signifier*;
- an expectation that silence can only be *ineffable*;
- a reluctance to consider silence as a *material* or *presence* with its own rules and parameters;
- the assumption that a performer's gestures during silence are *ornamental*.

These misconceptions are common in musicology, music criticism, and theory. Sound art writing has been more explorative of silence(s) but tends to focus more on the attitude of listening than on the activity of performing. Could one assert that silence might have tangibility, that it could be something to which one should listen, or something that can be isolated from its audiovisual context?

Stepping back from the specificity of musical silence, I believe my research has urgency as well due to silence's intimate relationship with the pandemic, and to the increasing noise levels around us. Some parts of society have gone in quest of silence as a result.



Figure 2: Physicality of silence, visualization of silence, and violent silencing are all tangibles in *Broken Silence* by Sarah van Sonsbeeck (Dortyard, 2014).

Background

When I first began studying silence, I got asked one question a lot, which was, “Why silence?” No one seemed to understand my passion for silence when there were so many interesting sounds around us. But then we had the pandemic, lockdowns, and isolation. During the pandemic, no one asked any more questions—everyone was so excited to tell me their best or worst silence story—my topic had instantly become globally relevant. Silence discussions became commonplace.

Now, after lockdowns, the question people ask me is no longer, “Why silence?” but rather, “Why you?” The world is curious why I, a musician known for loud and raucous performances, switched over to the still and mysterious world of silence. Whatever the psychological reasons, I am quite certain of the musical impetus for my research. It was *Ballet mécanique* by George Antheil. Antheil’s brutal measured blocks of silence gave me the idea for this dissertation and eventually led me to question how musical silence is made visible, what it consists of, and what its attributes are. I was particularly fascinated by Antheil’s assertion about his silences that “here I had time moving without touching it.” This is a compelling idea: that by employing silence, the composer could be pushing time forward without acting upon it. I will come back to this in reference to other silences later.

Manifestations of Silence

I am fully aware of the complexities of the term “silence.” The term is employed in conversation, rhetoric, music, visual art, religion, acoustics, diplomacy, and politics. Each of these fields gives the word multiple and sometimes contradictory meanings. Nonetheless, a word must be found within my research on performed music to refer to events where the composer or performer has chosen to *depict* silence. I will call these manifestations “silences,” knowing that they might be full of sounds or activity, that they might or might not be indicated with rests in the score, and that they certainly are not silent in a scientific or acoustic sense.

English words related to silence (stillness, peacefulness, mindfulness, rest, calm, pause) are over-used and imprecise. And silence is often defined in either-or dichotomies, usually as a negative. For example, “silence is not sound”; “silence is not noise”; “silence is a lack of vibration.” We cannot fully understand silence by deciding what it is not, although it can be a good place to start.

Silentio

The origins of the word are ambiguous. Silence, which came from the Old French around the 11th century, meant “muteness” and was derived from the Latin *silentium*, “a state of being silent,” after *silens*, from the verb *silere* “be quiet or still.” This one word is already slippery; for example, being mute could imply wanting to say something and not saying it. Silence does not necessarily have that connotation anymore. Being quiet is definitely different from being still (ask any four-year-old). So this etymology seems to complicate things, especially in the dualism of passive vs. active. In what sense does silence refer to an action, or in what way is it an experience? When are we muted, and when are we mute? And have people lost something by no longer conjugating *silens* as a verb? *I silentio, you silens, we all*

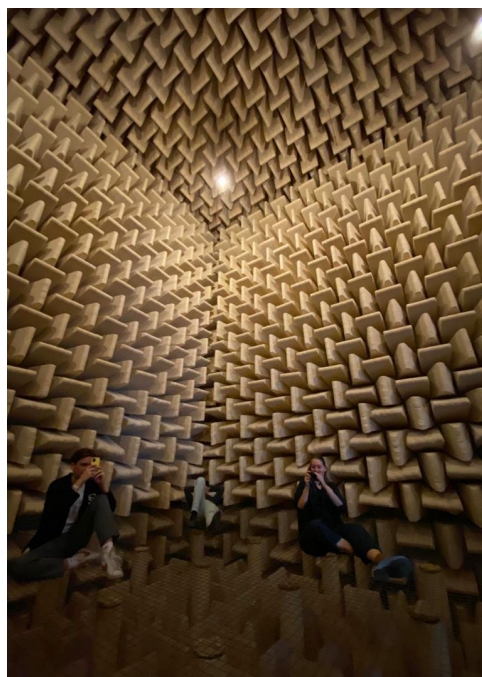


Figure 3: visiting the Anechoic Chamber at TU Delft with architecture students (author’s photo, 2022)

silensimus... wouldn't that make our language richer?³

The philosopher Georges Bataille characterizes silence as a “slipping” word because it is “the abolition of the sound which the word is; among all words, it is the most perverse, or the most poetic: it is the token of its own death” (Bataille, 1978, p. 16). By speaking of silence, by trying to take its measure, we disturb it, and we break it. Bataille’s observation helps to understand some of the ways in which the ideas presented in Cage’s 1961 book *Silence* are not as solid as he made them appear. This slipping notion will be fertile ground for discussion in Chapter 4, which analyses multiple performances of Cage’s seminal work, *4’33”*.

Scientific Silence

From a scientific point of view, there is no silence in music and no silence on our planet, except in the rarefied context of a vacuum. From a strictly quantifiable point of view, musical silence does not exist. It can be experienced, but it is illusory. Acoustic definitions of silence focus on the silent source (an absence of vibration), or the silent transmission (an absence of reflection), or the silent receptor (an absence/loss/incapacity for hearing) (Rolo, personal communication, February 6, 2020).⁴

Different engineering disciplines have slightly different definitions; for example, antenna engineers speak of an absence of reflections, while aerospace engineers speak of an absence of atmosphere to propagate sound waves. The former definition is focused on the borders of the space, the latter is focused on the air molecules that are the space.

Anechoic Chambers

I have spent many hours inside various anechoic chambers and find them fascinatingly bizarre. Lined with spiky triangles of foam, these are rooms within rooms, totally isolated from the outside world, and eerily quiet. The experience is a disorienting one, like being

³ In Dutch, the intransitive verb *verstillen* means to become quiet or make still. Moreover the transitive can be used (*ik stil mijn honger*/I still my appetite), although the meaning is used more as a derivative. A famous example in (now archaic) English is Psalm 65:7, “Who stilleth the roaring of the seas, The roaring of their waves, And the tumult of the peoples.” *Stilleth* seems to be used here as both a calming (of the physical waves) and a quieting (of the tumult, of the roaring).

⁴ Translating this into musical terms, a silent *source* would be a non-playing instrument; a silent *transmission* would be a non-playing performer; and a silent *receptor* would be a non-listening audience, but not a quiet audience.

on a spaceship in another galaxy. Sounds are deadened so much that you begin to recalibrate all of your senses. And the absence of reflections confuses our sense of self.

John Cage was inspired to write his famous silence piece *4'33"* after entering the anechoic chamber at Harvard University. In that composition, the performer makes no sound for four-and-a-half minutes. But, as I will argue later, his experience of the anechoic chamber, colored by the sounds of his own body, was far from the experience of the composition that made him famous. Neither experience was silent, but for very different reasons. Cage heard the sounds of his heart beating, his blood pumping, his brain whirring, and discovered that there is no silence. Musicologist and philosopher Jael Kraut reduces this to a logical deduction.

One could summarize this empirical approach in a simple syllogism: whenever any form of hearing takes place, there is always a conscious subject that hears; wherever there is a conscious subject, there is a living body; a living body always produces sound; hence: it is impossible for a living body to experience silence.
(Kraut, 2010, p. 19)

There are always sounds around us and within us, even in an anechoic chamber (Cage, 1961; Cobussen, 2022; Gann, 2011). And those sounds underlay our daily experience as well as our experience of music.



Figure 4: a listening exercise while floating on the metal mesh grid in the Delft anechoic chamber (author's photo)

Nothingness

One of the important results of Cage's visit to the anechoic chamber was that it challenged forever the idea of silence as nothingness. Cage's resulting dictum that there is "no such

thing as silence” (Kostelanetz & Cage, 2003, p. 70) became famous, along with R. Murray Schafer’s similar conclusions.

Writer and composer William Brooks comments on the audience’s deliberate role in (mis)understanding silence:

Listeners are taught to disregard ancillary sounds. Silences in music invoke a tacit agreement: anything that might be heard is not really *there*. The listener stipulates at the composer’s request, that at such times there is *not* something to hear, and the empty moments in the music invite the contemplation of this possibility. (Brooks, 2017, p. 109)

Despite the artworks and writings of Cage and Schafer, silence is often mislabeled as a *zero signifier*, as if nothing is there, for we have been taught to disregard those ancillary sounds. Those are the very sounds that Cage wanted us to experience amongst the silence. For Cage, there was no zero signifier. Silence was not nothing. Recent psychological and philosophical research at Johns Hopkins University by Rui Zhe Goh, Ian B. Phillips, and Chaz Firestone gives scientific credence to the theory that silence has tangibility and thingness. It is not nothingness; it is a different kind of somethingness:

Do we only hear sounds? Or can we also hear silence? These questions are the subject of a centuries-old philosophical debate between two camps: the perceptual view (we literally hear silence), and the cognitive view (we only judge or infer silence). Here, we take an empirical approach to resolve this theoretical controversy. [...] In all cases, silences elicited temporal distortions perfectly analogous to their sound-based counterparts, suggesting that auditory processing treats moments of silence the way it treats sounds. (Goh et al., 2023)

The conclusions of their paper are only preliminary, and more research is necessary. But from the viewpoint of a performing musician, I will also argue that silence has tangibility.

Architectural Silence

From an architect’s point of view, silence is made possible by an acceptably low level of background noise, often measured in decibels. The better isolated the building, the lower the decibel level inside. But also the higher the implementation costs. For dedicated buildings in which the sonic experience is crucial, designers/acousticians evaluate the background noise level via a non-linear curve based on perceptual testing called the Noise Criterion (NC), which is more practical than the decibel scale (it is more oriented towards the capacities of the human ear). For example, NC25 is an appropriate level for a teleconference room and NC15 is the threshold of hearing. The ultimate quiet experience,

sought after in recording studios, is NC1, but it comes at “a high price for the client,” according to architects who specialize in acoustics (Sacks et al., 2013).

Anechoic chambers such as the one Cage “heard” are even quieter and are evaluated in decibels.⁵ Most have a background noise level in the range of plus 10 to 20 dB, but the levels inside Orfield Laboratories in Minneapolis are probably the quietest on our planet, with a background noise reading of minus 9.4 decibels (Cox, 2014).⁶ None of these places are absolutely silent, because there are inevitably mechanical sounds (electricity, ventilation, computer systems), and just as inevitably also natural sounds (vibrations in the earth). Nonetheless, humans perceive these spaces as silent due to our limited hearing capabilities.

Situational Silence

Where the built environment has been designed to create sensations of rest or repose, we often “hear” silence that may or may not be there. More commonly, we experience architectural silence in terms of *situational silence*. When I was staying at the Rustpunt monastery in Ghent in 2019, I worked on recording the sounds of the walled garden. Visitors often remarked to me how silent it was in that verdant space with its ancient brick walls and leafy trees. Yet my recordings of that space are a frustrating mix of sirens, beeping cars, clanging tramways, and more. Reality is louder than we assume, even if a place seems situationally silent.

Silence in an architectural situation might also be very loud. I made a series of radio programs about the Cathedral of Notre Dame in Paris between 2010 and 2015. Frequently the sound inside was louder than outside. Yet the majority of tourists experienced it as a place of silence. This effect was created by a combination of monumental physical space and spiritual expectations. Yet the sonic reality was a high level of background sounds, a wash of white noise punctuated by doors slamming, coins clinking into metal boxes, cameras clicking, priests chanting, and tour guides narrating the experience in multiple languages. Notre Dame offered a qualified experience of silence despite a quantified experience of noise.

► AUDIO: <https://www.researchcatalogue.net/view/1712958/2917575#tool-2931221>

⁵ The decibel scale itself is logarithmic scale related to humanly perceivable sounds (also a theoretical construct since hearing is so individual).

⁶ To put this in scale, a whisper is about 30 dB; and the theoretical lower limit of human hearing is 0 dB.

Kraut offers insight on how composers usually work from a concrete, textured space instead of the “chimerical horizon” Jankélévitch envisaged:

Silence considered as an empty background, and therefore as the perfect condition for music to appear, means considering silence as a kind of nothingness or void. But what if the “silent background” is not nothing nor empty? Silence would not always be one and the same. Like the canvas, any background of music has what one may metaphorically call its own “texture”. Many composers considered the silent background in which any musical event takes place not as an “chimerical horizon” but as a concrete space. (Kraut, 2010, p. 18)

Concert halls, temples, churches, monasteries, cemeteries, and tunnels are marvelous examples of spaces that project or enclose silence. Although this dissertation focuses on performed silence, I will periodically reference architectural/situational silences as a canvas that definitely can influence the performative experience.

Even assuming that the background noises in the space and around the music are very quiet, it still is difficult to hear silence within a musical experience. Schafer writes:

The myth of silence has been exploded. From now on in traditional music, for instance, when we speak of silence we will not mean: absolute or physical silence, but rather merely the absence of traditional musical sounds. (Schafer, 1977, p. 12)

I would nuance his statement. We can hear silence in a Chopin nocturne even while the pedal is still holding resonance from previous notes. That resonance is still a traditional musical sound but offers a listening experience of silence. Philosopher Roy A. Sorenson makes a key distinction: “You can hear *that* it is silent by means of a sound. But you cannot hear silence by means of a sound” (Sorensen, 2009). Auditory culture researcher Marcel Cobussen puts it slightly differently: “We can only experience silence *through* non-silence” (Cobussen, 2002). New research in psycho-acoustics (Goh et al., 2023) has suggested that we can perceive silence in some controlled situations, but their experimentation also involves sounds, and it is difficult to know to what extent those sounds influence the perception of silence. Kraut suggests a schema for understanding how the audience selectively “hears” silence at an orchestral concert.

While listening, one passively accomplishes an intentional distinction between those sounds that belong to the music and those that occur in the environment. On the basis of this passive though nevertheless intentional consciousness, one has the possibility to only perceive the intended sounds. [...] On the basis of this possibility, one is capable of hearing only the music the orchestra plays. The

environmental noises – the whisperings, mumblings, coughing of the public, the humming of electronic devices, and other sonorous turmoil – disappear into the margins. (Kraut, 2010, p. 98)

All these suggestions relate back to a core problem in my research: it is impossible to hear silence as an isolated phenomenon. It always appears in a context or relationship, and the audience can passively (or intentionally) make non-intended or non-musical sounds disappear into the margins.

As a contrasting example, the phenomenon of hearing silence *from the audience* is well-known amongst musicians: violinist Jenna Sherry recently told me about performing with John Eliot Gardiner in Budapest and how the silence from the Hungarian audience was palpable. Onstage, she and the other musicians could hear the silence, feeling the audience's participation in the work: "We felt an intentional silence—an active communal silence that's being created, and not accidental, not an absence: it was a focus of created intention which allowed something else to appear" (Sherry, interview, January 20, 2023). Sherry's experience—though unquantifiable—is shared by many musicians.

Audience Silence

The 18th-century diplomat and music patron Gottfried van Swieten is often credited with setting modern European standards of audience silence:

[Van Swieten] exerted all his influence in the cause of music, even for so subordinate an end as to enforce silence and attention during musical performances. Whenever a whispered conversation arose among the audience, his excellency would rise from his seat in the first row, draw himself up to his full majestic height, measure the offenders with a long, serious look and then very slowly resume his seat. The proceeding never failed of its effect. (DeNora, 1998, p. 27)

This silencing of the audience occurred as well in France (and much later in Italy) for a variety of reasons ranging from performer safety to the rise of operatic divas, to the increased status of composers (Verdi, Wagner, Mahler) who demanded respect for their silences and to political fears of riots (especially in France) (Richard, 2021). More than a century later, audience silence barely needs to be enforced and has come to indicate respect and attentive listening during classical concerts. This is what musicologist Juliana Hodkinson refers to as the *silence of decorum* (Hodkinson, 2007, p. 32).

Tacet

An instruction used often in musical scores is *tacet*, a term that first appeared in late medieval chant (Hodkinson, 2007, p. 26). *Tacet* is the imperative to stay silent, noted in orchestral parts. I remember sitting in the back of a student orchestra facing a blank page (only marked *tacet*), waiting interminably for the end of a Mahler symphony so I could finally play the cymbals. Thus, the marking *tacet* often means “count like hell” to the symphonic trumpeter or percussionist, who might otherwise doze off after 300 empty bars. *Tacet* is the instruction, and *tacit* is the adjective meaning expressed in silence; implied, but not made explicit; done or made in silence; for example, *tacit* consent is consent by silence or by not interposing an objection.

Taceo and Sileo

In the original Latin, the verb *taceo* meant silencing something already existing, whereas *sileo* is the void of something that never comes to be. Roland Barthes also makes the distinction in his lecture series *The Neutral* (Barthes, 2005). He interprets *tacere* as verbal silence, while *silere* suggests stillness, the absence of both movement and noise. Barthes poetically uses *silere* to refer to things, to the night, to the sea, to winds. “Hence a series of very beautiful ordinary metaphors: the moon turned invisible at its waning, the bud or the tendril that hasn’t yet opened up, the egg that is not yet hatched: *silet*, *sileunt*” (Barthes, 2005, p. 22). In his definitions, silence is not a nothingness, but rather offers a potential for somethingness.

Stillness

The word *stillness* can be helpful when discussing silence and is a familiar term from mindfulness, yoga, and other reflective practices. John Cage, himself into meditative practices, spoke often of quieting the mind (Cage, 1961). When you get into the flow during a yoga session or meditation, you might well be experiencing stillness as physicality, a sort of mental silence generated through focused bodily activity.

Indeed, stillness can be very active. When I am onstage playing “minimalist” music of Philip Glass or Simeon ten Holt, I get into a similar zone, a trance-like state. This experience of a repetitive activity that quiets the mind resembles silence, but a silence that is physical and euphoric. So it is more an active stillness: involving physical repetition, a chanted “ommm,” or a steady rhythmic pattern. In concerts of Henryk Górecki, Simeon ten Holt, or Arvo Pärt, audiences often experience a silence *behind* the music, a sort of trance-like stillness.

Ma

Since the western words for silence are overloaded with societal, spiritual, and political baggage, some writings on sound adopt the Japanese word *ma*. Japanese traditional art, including music, describes *ma* (間) as the space between things, a far more eloquent and useful trope than the western idea of mere “emptiness.” This centuries-old concept is illustrated in scroll paintings, in Zen gardens, and in the design of temples. In modern terms, any graphic designer today is familiar with the concept of “white space” and its usefulness in creating tension and coherence on the page. In terms of *ma*, silence might be perceived as a temporal space to reflect, feel, or imagine connections. *Ma* itself is as full of connotations and baggage as western words for silence, if not fuller. Japanese composer Toru Takemitsu writes:

To the sensitive Japanese listener [...], the unique idea of *ma*—the unsounded part of this experience—has at the same time a deep, powerful, and rich resonance that can stand up to the sound. In short, this *ma*, this powerful silence, is that which gives life to the sound and removes it from its position of primacy. So it is that sound, confronting the silence of *ma*, yields supremacy in the final expression. (Takemitsu & Ozawa, 1995, p. 51)

George Crumb was inspired by ideas of unsounded resonance within *ma* to better communicate with performers. Not only do his scores make extensive use of white space in their layout on the page, but he pioneered new notational depictions of silence.

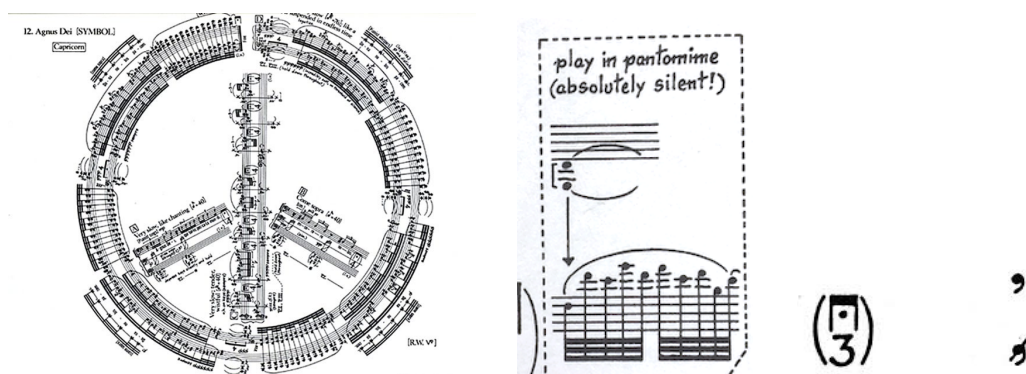


Figure 5: Notational innovations of George Crumb (from left to right): *Agnus Dei* for solo piano; the ending of *Vox Balaenae*, in which the pianist plays silently on/over the keys; a precise 3-second pause from *Makrokosmos*; commas as breaths, and slashed commas which are shorter, more like gasps (Edition Peters, 1972).

Oddly, given the depth of meaning of *ma* in Japanese visual art, traditional Japanese musical notation fails to indicate silences with any nuance. A comma or change of row (column) suffices to indicate silence or the end of a phrase in traditional musics (Wada,

interview, 2019). In this sense, traditional Japanese silence notation is not more helpful than its western counterpart.

Liú bái

In Chinese art and culture, *liú bái* (留白) can have layered and contradictory meanings: it can mean leaving empty space in a work of art; or the space where the brush does not touch the canvas; or setting aside idle moments in life; or (oddly enough) leaving a message. As an art concept, it has continued importance in experimental Chinese cinema. And *Liú bái* can also imply a framing function.⁷



Figure 2: *liú bái* characters (Zhang, 2021)

Shin

Another word that could give heightened dimensionality to western notions of silence is the Japanese term *shin*, much like “hush” or “shhhh” in English, yet different. Manga translator Polly Barton explains:

‘*Shin*’ is far more prevalent as a straight-up sound effect, particularly in contexts like manga, where the long midbar of an enormous しーん is often found traversing the awkward space between two characters, or spreading through an entire room to indicate the voluminousness of the silence. (Barton, 2021)

In Barton’s example, the concept is made visible, marking silence dramatically on the pages of manga art—an explosion of silence illuminated on the page, a tension between two characters (Barton, 2021).

⁷ Film theorist Lyuwenyu Zhang has considered the “space around” in new Chinese cinema, giving as an example filmmaker Jia Zhangke, who uses *liú bái* not so much as a blank or a void, but rather as a decorative filigree behind the main action (Zhang, 2021).



Figure 7: manga frames translated into English, in which the original word しーん has been retained for a powerful graphic result (Barton, 2021)

Rests & Breaths

For singers, the breath is a straightforward physiological necessity. Vocalists cannot sing without breathing in between. For them, *breathing is silence*, and that makes perfect sense given their instrument. The silences between phrases are fundamentally a part of the sound production. This may be part of the reason that the notation of silence arose long after the notation of notes: the silences were obvious to the singers and so did not need to be notated. At some point in the medieval period, a graphic system of spaces between phrases was replaced by commas.⁸

Notated rests would seem to be silences, *ipso facto*. But it is not that simple. For example, from a pianistic viewpoint, a rest may often be pedaled (enabling the previous sounds to resonate). Or a rest may have the function of letting one hand play without the interference of the other. Rests may visually indicate the end of a motive in a Bach fugue without connotating silence because other motives are in progress simultaneously. Rests could let another part or voice come to the foreground. Or rests could be included to enable the performer to leap across the keyboard to a different register. Sometimes rests mark a space in the score in one or both hands, but are only there for counting purposes. These are some of the many situations in which the pianistic rest does not indicate silence.

⁸ Hodkinson's impressively complete catalogue of silence notation is an important reference on the history of silence symbols (Hodkinson, 2007) and has been helpful in tracing the evolution of rests.

The word rest can also suggest “at rest,” which implies a waiting or attentive stance, or even a relaxed or asleep condition. So, for example, the left hand might be “at rest” at a given moment while the right hand performs a solo. The presence of the rest is also, in some ways, a reassurance that the musician or the musician’s hand is still present in the performance, whether active or non-active.

The durationally specific rest is not the only means of suggesting silence in a score. Here are additional common notations indicating breathing and pauses, which will be further examined in the next chapter.



Figure 8: comma, breath or hesitation, *fermata*, pause or breath, *staccato* dot, *staccatissimo* triangle, *caesura*

Markers for Silence

I propose the term *markers* to describe cues that communicate dimensions of silence. Markers are visible or audible signals used to shift attention and thus *impose* silence, *summon* silence, or *shape* the perception of silence. A performer’s gesture while interpreting the notated rests can be a visible marker for silence. Or a performer’s breathing can be an audible marker for silence. The notes themselves can offer audible markers that change the audience’s impression of silence. Dimming lights or a closed curtain can summon silence in a room. In Chapter 2, I will discuss markers in more detail, and in Chapter 3, I will give concrete examples from my practice.

Framing and the Work

Framing—conceptually closely connected to markers—can be created by the silence surrounding the work; conversely, sounds can frame silences (see Chapter 2). Or the frame can indicate the edges of silence, as in performances of *4’33”* (see Chapter 4). There is always framing of some sort, but it can take many forms. In practice, it is not always clear where the frame ends and the artwork begins, nor vice-versa. Markers may indicate the edges of the frame. Sometimes, it is difficult to distinguish the frame, especially in Cage’s *4’33”*. The audience and the performer may experience the frames at different times. One must sometimes guess where the music begins and where it ends. Chapter 2 will discuss the porosity of frames. And in the Cage chapter, I will show that *looking at*—rather than *listening to*—the performance can sometimes lead to a clearer delineation of inside and outside, of start and stop.

This may lead to the question about the definition⁹ of “the work.” Where is it, and when does it start? Following Östersjö, I define “the work” as encompassing notation, score, expected performance practice, historical context, and performer’s interpretation. Hence, I use the term “work” broadly, thus recognizing that a work is no finalized entity but is constantly evolving. (Within this writing, the term “artwork” is used in a looser manner, that is, as a less formal label.)

Embodied Silence/Gestural Silence/Eloquent Silence

Embodiment and *gesture* have multiple meanings in music and in other performance-related disciplines. For clarity, my use of these terms aligns with violinist and researcher Barbara Lüneburg’s ongoing research project on embodiment and re-enactment (Lüneburg, 2023; Lüneburg & Ciciliani, 2021): embodiment is the overall collection of active performer movements, gestures, postures, facial expressions, and passive performer choices such as hairstyle and costume. Embodiment is also a technique used to imitate another performer’s physicality. Finally, it can be used to describe a specific corporeality or tangibility, as for example, the embodiment of a silence through a specific gesture.

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

⁹ Östersjö (2008, p. 70) writes: “Assigning meaning to a musical work through performance is achieved by way of a critical reading of *the work* (and not only the score). And further, if we adopt the notion of a musical discourse made up of authoritative texts in the form of scores as well as performances, this means that a performance of *a work* might in many cases also involve an interpretation of previous performances as well as the score, its musical tradition and performance practices.”



Figure 9: Evgeny Kissin performing the second-bar rest of opus 111

Gestural silence can also be described as embodied silence. The gestures or embodiments are not the silence but are cues or markers for it. Indeed some embodiments may be wildly distracting or even noisy. For example, this figure shows pianist Evgeny Kissin performing a rest at the start of Beethoven's opus 111. He embodies the silence in a very physical, powerful gesture. My argument that the visual plays a crucial role in the experience of performed silence will be supported by analyses of embodied silence.

Eloquent silence communicates from the performer to the listener; non-eloquent silence might have a functional role but does not have rhetorical, communicative value in the performance. Eloquent silence is hardly a new idea for musicians: Baroque music performers, for example, employ rhetorical tools that parallel eloquent silence: *abruptio*, *aposiopesis* (pause), *dubitatio*... The pianists in

the case studies of Beethoven's opus 111 (Chapter 5) are creating eloquent silences, as are the professional and amateur musicians in the examples of Cage's *4'33"* (Chapter 4).

Performed Silence can be eloquent but also purely functional. Following the notation of a score, a performed silence is literally the performance of a notated rest. But it might not have much to do with audible silence. A performed silence might be played with the pedal fully down, but if the musician eloquently embodies the silence, the audience will understand it as silence. It can also be simply functional, as in the gesture a pianist makes during the rest to move their hands from one note to another.

Non-playing

Pianist and composer Paul Craenen has written a description of a fictional silence concert. The three featured pieces are John Cage's *4'33"*, Dieter Schnebel's *Nostalgie*, and Mauricio Kagel's *Con Voce*. One of the ideas Craenen introduces to describe this intriguing performative situation is that of the non-playing performer, who is acting against audience expectations: "The pianist makes herself *and* the public present through her non-playing" (Craenen, 2014, p. 51).

Is *non-playing* a definition of performed silence? I wonder if the non-playing body exists—is it possible that the body is always playing? Non-musicians might have non-playing bodies, but a performer always has a playing body, certainly onstage. This said, I think that Craenen is suggesting a "non-" that refers to an expectation of the audience that is not fulfilled. But one could also describe the non-playing as a "not-filling," thus leaving space

for the audience to experience the performance of silence. The non-playing abstract/political silences of Dieter Schnebel or Mauricio Kagel are in stark contrast to the dramatic and rhetorical silences in the music of Beethoven, in which the player is communicating emotions, sculpting time, in intense communication with the audience.

Non-playing might also be a state of inactivity, which is characteristic of artworks that are about and consisting of silence, for example, Erwin Schulhoff's *In Futurum*, Cage's *4'33"*, or Marina Abramović's *The Artist is Present*.¹⁰

Meta-Silences

Composer Ferruccio Busoni, in his 1907 manifesto *Sketch of a New Esthetic of Music*, launched a new silence discussion for the 20th century:

The tense silence between two movements—in itself music, in this environment—leaves wider scope for divination than the more determinate, but therefore less elastic, sound. (Busoni, 1911, p. 23)

Although Busoni was compositionally conservative, he proposes an idea that is indeed avant-garde for its time: The non-notated silence between movements is itself music, and silence has a potentially wider scope than sound. Silence is more indeterminate and therefore more elastic. What is compelling is his use of the words *divination* and *elastic* to describe these silences. This is the earliest musical reference I have found that directly acknowledges the malleability of musical silence.¹¹ These intra-movement silences are *meta-silences*, in the sense that they are non-notated and the product of context or cultural rituals, assumed by audience and performer alike.

A common example of a meta-silence is the silence between movements; a rare one is the death of a performer onstage. The philosopher Vladimir Jankélévitch gives another example: *prophetic silence*, such as when the conductor taps his baton before the performance (Jankélévitch, 1961, p. 165). These meta-silences are not notated, but ritually standardized and culturally understood by Western classical audiences. These silences can themselves be anticipative, as before the start of an opera; or retrospective, as at the awesome end of Anton Bruckner's [*Te Deum*](#); or reflective, as within and surrounding

¹⁰ In Chapter 3 these will be referred to as “absence art” (Farennikova, 2019).

¹¹ Saint Augustine possibly did suggest a precursor of elasticity through his term of *Silentia voluntaria* (see next chapter).

[*Psalom*](#) by Arvo Pärt. Meta-silences can also “frame” a musical work in the case that the performance starts and ends in silence.

A Working Model of Performed Silence

In light of some of the gaps listed above, silence can be interpreted not only as a separator but also as a knot or a tying together. Silence might be simultaneously a continuity and a discontinuity, both a *knot* and a *not*.

The inspiration for this idea comes from architectural theory, specifically the ancient Greek theory of tectonics, which can refer both to cutting and joining, as explained by architectural theorist Udo Garritzmann and philosopher Maria Karvouni:

Karvouni observes an analogy between the tectonic operation of cutting and joining, or division (*diarexis*) and synthesis (*synthesis*) that the *tekton* and *architekton* perform, and similar dual operations ‘in cosmogonic myths, in mathematical accounts, in philosophical speculations, and in the discussion and definition of art in general.’ (Garritzmann, 2021, p. 21)¹²



Figure 10: still image from Nicoli’s *No Entry/No Exit* (Koop, 2009)

Transposing across disciplines may be fertile inspirational territory for thinking silence. Silence could serve a tectonic function in performance, both linking and separating the musical components around it. So many discussions of musical silence fall into the confusion of paradox or the traps of dichotomies. Silence is this or that. Silence is absence or presence. Silence is on or off. Theoretical dichotomies may obscure the complexities of silence, but in practice composers can use these same dichotomies to magical advantage. This is illustrated in a multitude of musical examples, such as Argentinian composer Cecilia Arditto’s composition [*Straal*](#), in which light and sound are made equivalent, or Italian composer Andrea Nicoli’s [*No Entry/No Exit*](#), which has a rapid density of silenced notes that cannot be played on the keys because the lid is closed. Dutch filmmaker Nalleke Koop’s video of my hands performing this composition creates a visual synesthesia marvelously illustrating this light/dark vs. sound/silence dichotomy.

¹² The 19th-century German architect Gottfried Semper pioneered the modern use of the word tectonics in considering the relationship between division and synthesis, especially in respect to the woven materials which may have constituted the first huts or constructed human habitations (Garritzmann, 2021).

But if *diuresis* and *synthesis* can be merged into one tectonic entity, then silence is no longer one side of a dichotomy, but rather both sides of the dichotomy simultaneously. The analysis of Karvouni's work above (Garritzmann, 2021, p. 21) suggests an analogy between sounds and bricks, which is far from accidental: like notes in a composition, bricks get all the attention in an architectural façade. The grout, that cement which both connects and divides them, is relatively rarely considered. Yet, one cannot exist without the other. It is unnecessary to take the metaphor too far and claim that the bricks *are* notes and the grout lines *are* rests. But I draw attention to this rough analogy because both elements have a structural function in architecture, just as notes and silence have in music. The bricks cannot hold together without the grout, yet the grout has no strength without the bricks.

A similar structural importance for silence can be inferred by a visual analysis, in this case, of Beethoven's last piano sonata. The opening bars are here represented without the notes, and then without the rests.

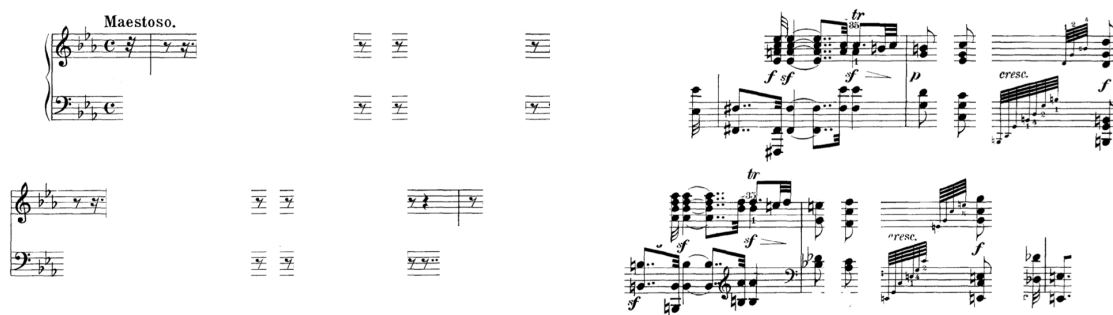


Figure 11: opus 111 (Edition Peters, 1974)

This graphic is very useful for understanding the structure, but it also suggests a kind of dichotomy that is foreign to the actual music. Looking at the graphic does offer insight into silence tectonics: one part cannot exist without the other. The insight here is perhaps the simultaneity of silence in a musical context—its paradoxical ability to be both sides of the dichotomy at once: positive and negative, on and off, background and foreground. Just as a knot connects one piece of rope to another rope, so does silence connect disparate elements in a piece of music. Karvouni observes that

Techné [...] is the ability to divide and connect. This requires delimitation (assigning limits, measures, proportions) and synthesis (joining, composing, assembling). In doing so, the *tekton* imitates the cosmogonic operations of bringing things into existence. (Karvouni, 1999, p. 108)

Silence has the same ability to divide and connect. In my performative model, silence is assigned attributes of delimitation and assemblage. I see the performer as the *techne*, the ancient Greek artisan who cuts and joins stone.

As an interpreter, I relish the challenges and opportunities involved in interpreting a work that exists only in the composer's mind or on paper. Interpretation means translating those ideas into a visceral, palpable, tangible, performative reality. And interpretation involves an enormous amount of creativity. The not/knot model of silence will merit the embodiment that performers award it onstage, as well as the absence that the composer indicates through notation.

The immense difference in silence interpretations in the following chapters suggests that the composer's notation often has little influence over the on-stage performativity of the rests. In Chapter 5 I will suggest that rests offer an affordance for classical pianists to create freely, to assign their unique proportions to the performed artwork. In this sense also, the rests offer an opportunity for the performer to create knots that join the musical elements together or separate them dramatically. Despite the notation of rests as merely pulse or duration, the performative reality is far from merely counting out rests. These rests are *eloquent silences* that are brought to life by the performer as *techne*, joining and cutting at just the right moment.

Methodology

I am a pianist, curator, and podcaster. Experimentation across genres and mediums plays a daily role in my artistic practice. My work as a pianist is varied and complex. I have a preference for large-scale projects, either experimental or historical, leading to public broadcast or performance. Often this involves guiding an audience through the densities of the artwork, giving them the toolkit that they need for understanding, appreciation, and also enjoyment of the stories and philosophy behind the composition.

I would certainly describe my research as meandering, as it moves through a never ending and constantly branching ramification of time, mechanics of performing, and waves of history. Throughout this dissertation, I will draw experiential examples from my research projects, including silence concerts, collaborations with design students and composition students, podcasts, radio shows, my prior work in hospitals in Paris, etc.

Finding Ways to Study Silence

Much silence research and discussion already existed, even before Cage's "discovery" of silence. Especially in the early part of the 20th century, composers and interpreters were creating musical silences with new functions, affects, and emotions. Part of my research has been to collect these functions, affects, and emotions and to care for them, investigate them, imitate them, understand them, and employ them in performance.

Throughout my research process, I struggled with the format that would best express the results. Early on in the process, I envisioned a taxonomy of silences, made flow charts of the ontology of silence, and began working on an alphabet of silences. The beginnings of this alphabet are suggested in the conclusion of this dissertation, and it attempts to transcend the sterile notation of our common musical rests. As I worked on this dissertation, I realized that rather than drawing symbols of silences (creating an alphabet), my purpose would be better served by creating a digital archive of those silences. Each entry in the Noisy Archive (Chapter 3) offers an example of silences and includes videos, audio, and text to demonstrate and explain the relevance and singularity of that particular musical silence.

Even though I argue against silence's ultimate ineffability, I am still aware of its *insaisissabilité* or ungraspability (Jankélévitch). Silence is difficult to qualify and quantify. So the artistic research process seems to call for some techniques of comparison, some fair methods of cognitively, creatively, and affectively approaching performed silences. I have chosen three major paths for comparing and studying silences:

- *Listening/watching/performing* based on films and photographs of other performers;
- *Personal reflection videos* based on my (tacit) knowledge and performing practice;
- *Waveform analysis* drawn from my experience editing radio programs.

These three techniques are complementary and offer multiple perspectives on each examined silence.

Listening/Watching Practice

Starting in 2021, I began to make videos of myself performing silences, and copying other performers' silences to understand their techniques. The videos exist as instantaneous

means of experimentation to catch my thoughts while making sound/silence. These new reflections and experiments accompany my writing by encapsulating acts of play that generate immediacy of thought, complementing—and bouncing off—the writing. These have been my “future-generating machine,” leading to “repetition with difference” (Rheinberger, 1992, p. 311). This rehearsed and re-rehearsed practice is expressed via annotated musical scores and videos in which I perform reflections on other performers’ embodiments.

Reflection Videos

The primary focus of the Noisy Archive is personal video clips of many pianistic silences drawn from the classical and contemporary repertoire, as well as works composed for me. In these videos, I engage with the performative complexity, tacit knowledge, and technical challenges of creating eloquent silences.

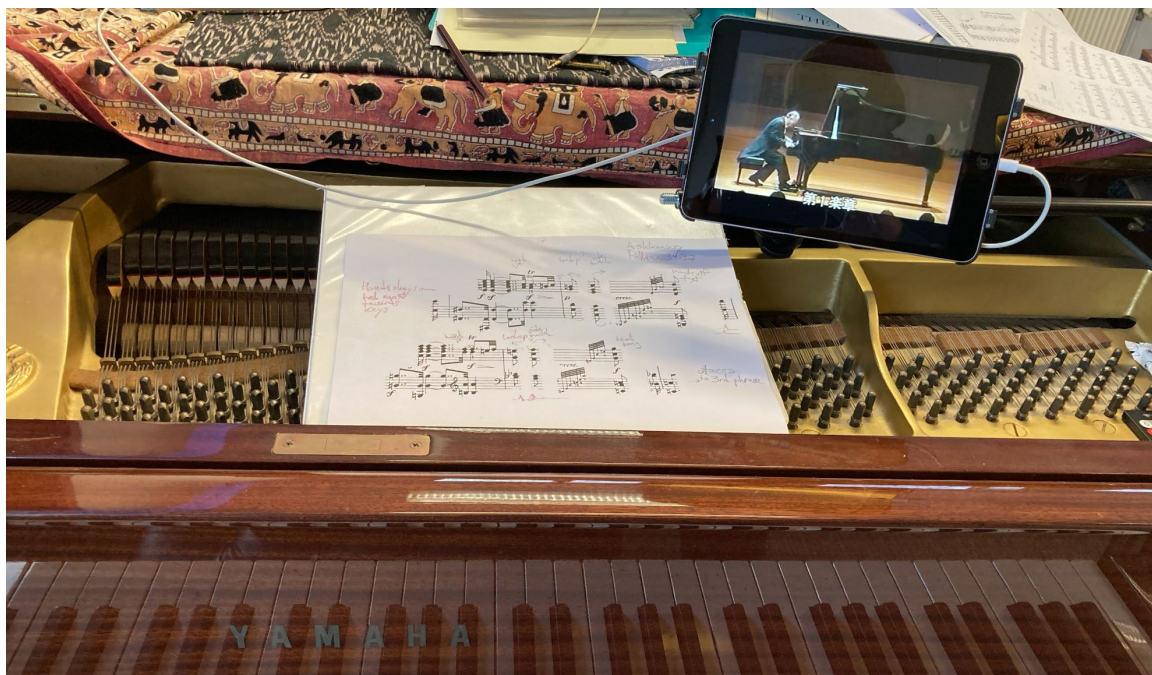


Figure 13: studying and learning from opus 111 videos in my studio (author's photo, 2022)

Waveform Analysis

The impetus for looking at waveforms of classical performances comes from my work with graphic designer Szymon Hernik and was influenced by the writings of musicologist Elizabeth Margulis. Here is her example of silence/rests at the beginning of Beethoven's opus 106 piano sonata, in a performance by Alfred Brendel.

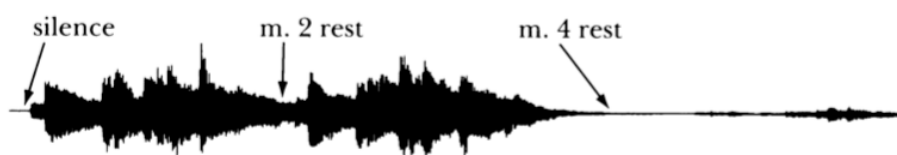


Figure 14: Margulis's waveform analysis (Margulis, 2007, p. 247)

This illustration immediately reveals that rests do not correlate directly with silence (the rest in measure 2 contains much sound, while the rest in measure 4 contains almost none). This is evidence of the relativity of silence within the performative context. As Margulis points out, we perceive both rests as silence even though they are each a unique mix of audible interference—the resonance of the hall, the lingering notes of the piano, the rustling of the audience, and the pianist's movements.

Margulis's ideas mesh with my suggestion that notated rests, acoustic silence, and eloquent silences have an uncertain (not one-to-one) correlation with each other. I use waveforms throughout this thesis to illustrate examples of performed silence.

Background Literature on Silence

This section underscores the breadth and depth of silence as an academic, social and artistic topic. The works below are not necessarily at the center of my research, but they constitute a useful collection that can offer points of departure for researchers who wish to pursue additional research on silence.

Notational Background

The notation of silence in musical scores was a crucial point of departure for my research. Understandings of silence notation have evolved significantly in the last century. Hugo Riemann was among the first modern theorists to categorize performed rests, distinguishing five types, including an accentuated rest (Riemann, 1903, 1884). Wallis Dwight Braman expanded upon Riemann's work by compiling around 400 examples of composed silence, predominantly from classical composers. Braman's definition of silence as "time without sound" suggests contemporary discussions of musical silence, particularly relevant to Bohdan Syroyid's analysis of silences in Webern's works (Braman, 1956; Syroyid, 2020). Syroyid's research offers a comprehensive historical study of rests, examining and improving on taxonomies of notational silence and influencing my ideas on the complexities of performed silence.

Thomas Clifton discusses the poetics of musical silence (Clifton, 1976) with examples from Haydn to Mahler (plus one outlier: Elliott Carter's piano concerto). Toru Takemitsu has written extensively on silence from a composer's perspective in Western and Japanese contexts. He writes that the "powerful silence of *ma* [...] is that what gives life to sound and removes it from its position of primacy" (Takemitsu & Ozawa, 1995, p. 51). Junichirō Tanizaki's intra-disciplinary book on shadows in Japanese culture (Tanizaki, 1977) offers unorthodox interpretations of silence, which often overlap with the suggestions elucidated in *The Neutral* (Barthes, 2005), and could be a point of departure for additional research.

Silence and Language

Many of my ideas about communication within or by means of silence arose from studying silence in linguistics and discourse. For example, Max Picard demonstrates the tension between verbal and non-verbal communication. His observation that "the absence of language makes the presence of silence more apparent" provides a critical framework for understanding how silence functions beyond sound, especially in moments of linguistic failure or inadequacy (Picard, 1952). This idea is expanded upon by Kris Acheson, who contends that silence can become an expressive tool when words fall short, and Ikuko Nakane, who identifies multiple forms of conversational silence across cultural contexts (Acheson, 2008; Nakane, 2007). These findings are given depth by Harahsheh's cross-cultural studies on silence in English and Arabic discourse, highlighting the universal role of silence as a conversational pause (AL-Harahsheh, 2012), relevant to many of the examples in my archive.

Silence and Silencing

To understand silence beyond a musical context, I researched silencing that operates as a mechanism of power, control or resistance. Michal Ephratt distinguishes between "eloquent silence" and "silencing," emphasizing that the latter represents a deprivation of expression rather than a choice (Ephratt, 2008). Political and societal silencing can be investigated through feminist and postcolonial lenses in examinations of silence as a tool for oppression, particularly in gendered and political contexts (Caprioli & Crenshaw, 2017; Clair, 2020; Dhawan, 2012).

Silence in non-western cultures takes considerably different forms and conveys meanings in dramatically different ways. These three sources provide contrasting challenges to European assumptions about silence. In *Eloquent Silence among the Igbo of Nigeria*, Gregory O. Nwoye discusses silences in Igbo culture within bereavement rituals, marriage proposals, greetings, and many other situations as a means of "managing highly charged situations and relationships" (Nwoye, 1985). In *Teaching Spirits: Understanding Native*

American Religious Traditions, Joseph Epes Brown and Emily Cousins discuss silence and the sacred through the art of storytelling, oral traditions, and the compromise of tribal languages (J. E. Brown & Cousins, 2001). In her book *Knowing and Learning: An Indigenous Fijian Approach*, Unaisi Nabobo-Baba theorizes a taxonomy of silences in a traditional Fijian community, highlighting the immense complexity and importance of silence within the hierarchy of the Vugalei community (Nabobo-Baba, 2006).

Silencing in international relations is studied by Elisabeth Schweiger, who applies Cage's and Wittgenstein's ideas to understanding legal judgments and political assassinations (Schweiger, 2018). Shani Brown's thesis, "Cartographies of Silence" (Brown, 2013), discusses torture, gender, secrecy, and war crimes. Although I do not engage directly with political silencing in my dissertation, these sources provided essential background understanding and are relevant to Part 5 of the Noisy Archive.

Samuel Beckett's work constitutes an important 20th-century reference for the intersection of (musical) language and silence. David Metzger links the use of textual silences in the plays of Beckett to silences in the scores of Luigi Nono, Anton Webern, and Salvatore Sciarrino (Metzger, 2006). Deborah Weigel draws connections between Beckett and Cage (Weigel, 2002). Catherine Laws has devoted a dynamic book to Beckett and music, noting parallels between Beckett's *Quad*, Cage's *4'33"*, and Mauricio Kagel's *pas de cinq* (Laws, 2013). It would be a compelling challenge to create a collaborative theatrical concert program around Beckett and silence.

Gesture and Silence

Gesture plays a critical role in performed musical silence. Embodied silence serves as a basis wherein the musician's internal states and interpretive gestures appear, offering a space for the audience's engagement and interpretative interaction (Acheson, 2008). Indeed, the audience gets many cues from embodiments. For example, behavioral psychology research shows that musical experts and non-experts can correctly identify the winners of international classical music competitions by watching videos of the contestants without sound. But this clear result is muddled if the original sound is restored (Tsay, 2013, p. 14583). Watching the videos *with the sound on* results in a less accurate prediction of the winners. Other analyses of cross-modal interactions in piano performances also suggest that visual kinematic cues can be stronger than auditory cues (Vuoskoski & Thompson, 2013).

These findings support my ideas on the importance of gesture in performing Beethoven's silences and form part of the growing literature on the role of gestures in music, a field that Giusy Caruso explores in a study of piano performance, emphasizing the distinctions between sound-producing, facilitating, and interpretative gestures (Caruso, 2018).

Meanwhile, *Romantic Anatomies of Performance* offers analyses of 19th-century embodiments, including gender, sexuality, and tactility, often with reference to performed silence and silencings (Davies, 2014).

Notation of gestures has evolved in the last few decades along with technological advances, from sketches to light-point analysis to more detailed video documentation methods. Although I have not developed a language nor notation of performed gestures for silence, I considered many potential ways of documenting and experimented with some sketches for an “alphabet of silences” (see Chapter 7). Current research continues to uncover new ways to capture and analyze non-verbal musical expressions (Davidson, 1993; Zbikowski, 2011). These methods allow for a deeper understanding of how performers’ embodied silence can be communicated to and interpreted by audiences, a critical aspect of contemporary music performance and research (Davidson, 2012; Lüneburg, 2023).

The next chapter will engage with those authors who were most influential to my arguments, especially Roland Barthes, John Cage, Marcel Cobussen, Paul Craenen, Richard C. Littlefield, and Elizabeth H. Margulis.

The Noisy Archive

The Noisy Archive helps to illuminate the diversity and quality of musical silences. I have explored these possibilities in research that begins at the piano.¹³

Of course, my research has involved many additional research techniques: a study of the literature, interviews with performers and theorists, visits to anechoic chambers and architectural spaces, and discussions with scholars and musicians.

In real life, live performance is messy and unpredictable, resisting codification. My videos, plus waveforms and reflections on listening, offer a beginning, an attempt to examine the possibilities of markers in relation to silence.

¹³ I have deliberately chosen to focus on a musical language with which I am already (physically and intellectually) familiar due to the importance of embodiment to my studies. As a pianist trained in the classical European tradition, my approach to silence in musical performance is shaped by this music, in which silence is often seen as a structured absence framed by notated pauses and formal concert settings. My background may lead me to privilege western notions of silence, overlooking non-western or alternative perspectives. Additionally, the hierarchical relationship between performer and audience in western traditions may bias my understanding of how silence is embodied and communicated. While my research deliberately challenges these assumptions, I remain aware that my interpretations are influenced by the biases of my training and the repertoire I have chosen to portray.

One of the interesting aspects of musical silence is that it both reflects the past and anticipates the future. Indeed, the experience of silence is frequently described by the twin bookends of its relationship to the past (remembrance) and the future (anticipation). As a musician, I want silence to be navigated and felt, perceived in the moment of the performance, but related to what comes before or after. In the Noisy Archive, I will evoke dimensions and markers through which the performer and environment can influence the experience of silence.

Structure of the Dissertation

- Chapter 1 (this introduction) presents my **research question** and **key concepts & terminology** of silence drawn from science, musicology, and performance practice.
- Chapter 2 contextualizes the framework and notation and suggests **markers** for silence. Markers are signals used to shift attention and thus *impose* silence, *summon* silence, or *shape* the perception of silence.

Chapters 3 to 6 discuss examples of performed silence, with reference to gestures, markers, framing, connectivity, and embodiment:

- Chapter 3 is a **Noisy Archive** that examines **eloquent silences** in my performative practice as a pianist, giving a diversity of examples, stretching the definition of silence, and drawing from the terminology of Chapter 1 and the framework of Chapter 2.
- Chapter 4 is a case study analysis of mostly online performances of Cage's *4'33"*, emphasizing **audible markers** for silence.
- Chapter 5 is a case study analysis of **visual markers**, taking the embodied silences during the opening bars of Beethoven's last piano sonata as its specific point of departure.
- Chapter 6 is a case study analysis of **notational markers** in George Antheil's *Ballet mécanique*, with examples from my solo and collaborative practice.
- Chapter 7 offers some **Conclusions**.

Chapter 2. Markers, Notations, Dimensions

2.1 Introduction

Chapter 1 suggested a vocabulary for manifestations of silence, drawing from English, Latin, French, Chinese, and Japanese terms, but also from diverse fields, including acoustics, architecture, and linguistics. It posited the existence of *markers* that serve as cues to engaging with silence.

Performed musical silence can be eloquent, meaning that it can communicate in more dimensions than only duration: memory and anticipation, feeling and emotion, listening attitudes, connections with the audience or the environment, and more. Performers can use embodiments such as gestures, postures, or facial expressions to communicate this multidimensionality. I propose that these embodiments can be described as markers of eloquent silence.

This second chapter will propose and explain the term marker to further the understanding of musical silences in performance.

Radiating outwards from my own practice as a pianist, this chapter will consider the on-stage interpretation of silence notation from a performer's perspective. This text may carry an "I voice" rooted in my practice as a pianist, thereby centering the research in process-based and reflexive material that comes primarily from my performance practice. It is a conscious decision to focus

Relevant terminology employed in this chapter

Silence is perceived stillness or quietness. Silence in music is not necessarily an absence of sound, but more often a relative experience of contrast.

Eloquent silence communicates from the performer to the listener; non-eloquent silence might have a functional role, but does not have rhetorical, communicative value in the performance.

Dimensions of silence include temporality (pulse, speed, duration), function (accentuation, expectation, remembrance, listening...), and emotion.

Markers are signals used to shift attention and thus *impose* silence, *summon* silence, or *shape* the perception of silence.

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

Notation is the collection of symbols used by composers to communicate to the performer.

Rests are notations which indicate silence, stillness, absence, duration, pulsation, and beat division.

Performed Silence is the description of silence created in a performance by the performer. It may be loud or soft, but the musician has chosen to shape it as silence.

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

on the performer, but this does not leave out the composer or the listener. Within the field of classically composed music, the composer is essential to the creation of rests which lead to performed silences, and the listener is essential to the reception, validating any eloquence created by the performer.

This research thus implicitly includes the triptych of composer, performer, and listener. All three roles are complementary and often necessary for performed silences: creator, interpreter, and receiver. However, the main focus will be on the interpreter's embodied role as the central link in the creation and understanding of performed silence.

This chapter will suggest more specific ways to describe and understand performed silence through markers. It will suggest some potential markers for silences and briefly explore how markers can arise. While the most obvious markers originate with the performer, markers that arise from audience behavior, from symbols, or from architectural context will also be evoked. In order to situate the idea of markers, I will draw on relevant texts of several scholars in musicology and sound art. Juliana Hodkinson has studied the notation and history of rests and their implications; Richard Littlefield has written about framing as a way of understanding musical silence and about silence as a tool for framing; Elizabeth Margulis has suggested a multidimensionality of silence to describe the communicative and emotional perception of silences; Salomé Voegelin has called for a separation of silence from the visual, encouraging me to re-examine musical connections between the audible and the visible. I will engage with these texts in a way that is relevant for the case studies in subsequent chapters.

My systematic approach to different aspects of performing silence offers an understanding of this important but neglected aspect of music-making. My overview and differentiation of approaches elucidate tacit knowledge, thus enabling performing artists to engage with silence in a more conscious way. This may open new listening possibilities for audiences as well as artistic possibilities for composers and interpreters.

2.2 Potential Markers for Silence

Silences can be signaled or sometimes imposed through markers which may include icons, gestures, flags, text, signs, pictograms, architecture, audience behavior, ritual, spiritual ceremony, the word “shhhh,” bells, alarms, and, at the very worst, physical restraint and murder. Here are some common examples:

- *A marker that imposes silence:* Prior to an orchestral concert, the conductor ritually indicates silence to the audience and the musicians by tapping three times with the baton. Most people in the concert hall recognize and respect this signal, which leads to anticipatory silence in the

audience and orchestra. The signal is both audible (the three clicks of the baton) and visible (the conductor is seen making the gesture).

- *A marker which summons silence:* The absence of sound can itself be a marker for silence, as in a 19th-century library lined with books. The clichéd furniture (oversized leather chairs, green porcelain lamp shades, oak tables) provide visual cues to be silent, assuming we are familiar with this language. And the audible hush pervading the room perpetrates a continuing cycle of quiet, again based on ritualized cues of behavior. The presence of sound, as in audible markers like bells, gongs, and wind chimes can also summon silence.
- *A marker that describes silence:* A pianist performing a Beethoven sonata throws her arms dramatically behind her during a rest, gaining extra audience attention for her silence. Her gesture, which serves no audible or technical purpose, communicates the silence theatrically to the audience despite the sound still reverberating through the hall. When Katie Mahan does this, her moving arms become gestural markers for eloquent silence.



Figure 15: Katie Mahan performing the 4th-bar rest of Ludwig van Beethoven’s opus 111 piano sonata (YouTube: <https://www.youtube.com/watch?v=Sk8oL4jDWIw>)

Silence is ephemeral and is slippery as a word, as a concept, and as a phenomenon. Philosopher Georges Bataille characterizes silence as a “slipping” word because it is “the abolition of the sound which the word is; among all words, it is the most perverse, or the most poetic: it is the token of its own death” (Bataille, 1978, p. 16). By speaking of silence, by trying to take its measure, we disturb it and we break it.

Perhaps my model of markers offers a solution to Bataille’s paradox. By marking the phenomenon of silence, the musician captions it, wordlessly. Visual markers especially may sometimes allow the silence to (less slipingly) communicate, maybe without breaking it.

Sometimes the marker for silence includes the person gesturing (a conductor signals for silence, and is then silent), and sometimes it does not (a preacher holds up a hand, palm facing out to the audience, signaling silence for the congregation, even though he/she continues to speak). Sometimes, silence is imposed through a silent gesture (finger to lips), sometimes through a noisy gesture (clapping twice loudly in front of a rowdy classroom). In many spiritual practices, bells indicate subtle changes in activity—activities that take place in stillness, simultaneous to the non-stillness of the bells.

How the markers are sensed is important: It is tempting to sort the sensoriality of markers into audible and visible. Yet cues for silence can be highly subtle and may involve multiple sensory inputs: smells, rituals, lighting, or memory. For example, the smell of a spice or a flower could recall the past and cause one to become suddenly still. The dimming of lights in a theater produces a hush in the audience, a keen sense of anticipation and also a tiny rustle as everyone settles into their seats before the show. Thus, markers can indeed be visible or audible, but they can also be multi-sensory, feeding back on each other, reinforcing or diffusing the silence around a performance.

From a musician's perspective, markers are the signals that are used to communicate silence to the audience. Here is a possible definition from the perspective of the performer.

Silence markers = signals that are used to shift attention and thus:

- *impose* silence,
- *summon* silence,
- *shape* the perception of silence.

And here is a possible definition from the perspective of the listener.

Silence markers = signals that draw attention and thus:

- *impose* if and when one must keep silent,
- are the symbols by which we *understand cognitively* that silence is happening or being summoned,
- *shape* the personal narratives of the listening experience.

The distinction between imposition and shaping is an important one insofar as it affects the relationship between listener and performer. A conductor pointing the baton straight out between movements may be imposing silence on the audience and musicians. But, during the performance, the baton may be used horizontally to shape how the listener experiences silence. Both of these gestures employ the baton as a marker, but the effect is very different. Markers are the caption that gives performed silence its meaning. They will

be the tools used to examine performed silences in the subsequent chapters. There can be some overlap between types of markers, as a given marker might, for example, contain both visible and audible aspects.

Visible Markers

Visible markers for silence are a very prominent focus of this research. The visual aspects of performed silence can be indicated through various means and include performative embodiments of silence. Specifically, performed embodiments encompass body language, gestures, hair tossing, and facial expressions. For example, in theater, a performer can convey silence through their posture, facial expression, or movement. In dance, silence can be represented through stillness, pauses, or specific gestures. In painting, silence can be suggested through an absence of sound or color (Rothko) or pigment, as well as more literally via a scene that evokes silence (Hopper).¹⁴ But visual markers also include lighting, signs, and symbols which can be expressed through theatrical or architectural means.



Figure 16: These are paintings by two artists who engaged extensively with silence: *Untitled (Black Blue Painting)* by Mark Rothko (1968) (<https://www.phillips.com/detail/mark-rothko/UK010121/15>) and *Room in New York* by Edward Hopper (1932) (<https://www.edwardhopper.net/room-in-new-york.jsp>).

Visible markers for performed silence cover a wide variety of signals and cues. Here is a partial list from this research project of some of the embodied (gestural) visible markers that are documented in the archive and the case studies: aggressive gestures, balletic gestures, poised gestures, contorted face, curving arm gestures which seem to summon or

¹⁴ Danish painter Vilhelm Hammershøi is known for his silent scenes containing unplayed musical instruments and isolated women with their backs to the viewer.

prepare nostalgic silences, Dadaist embodiments, dramatic gestures in romantic pianistic style, extravagant movements, fingers hovering in a precise embodiment above the keys, hairstyle, hair-tossing, hands, head thrown back, immobility, magisterial posture, motionless posture, moving without playing, poise, posing, swooping arms, tuxedo, etc.

Non-performed Visible Markers

Visible markers do not always originate from the performer. There are many non-performed but visible cues for silence. One example is lighting cues. When the lights dim in an opera house, it often induces a hush in the audience. The dimming acts as a marker for attentive silence, a cue that the show is about to begin (or has begun already). Some composers use this as a technique for observing silence. An example is *Straal* by Argentinian composer Cecilia Arditto, in which the pianist responds to a flashing screen. Another example is a jazzy improvisation by Australian composer Matthew Schlomowitz, in which the musicians react to the on-and-off states of colored light.

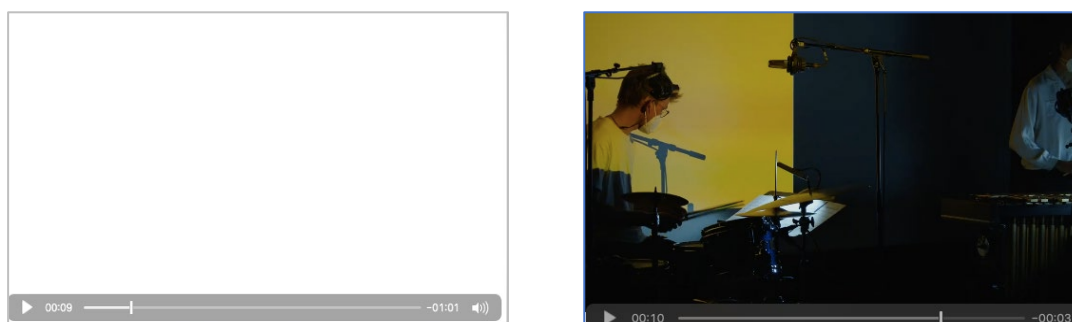


Figure 17: A white screen in Cecilia Arditto's *Straal* (film by Juan de Graaf) is activated by sounds from the piano; color backgrounds in Matthew Schlomowitz's *Popular Context V.6* (concert video of Romanesco Duo, Bern, 2022) indicate that the drummer on the left plays (lights on) while the vibraphonist on the right is silent (lights off).

In these examples of light, gesture, and image, silence correlates with light or darkness, making sound and/or silence visible and creating a binary experience. Here is a partial list from this research project of some of the external visible markers that are documented in the archive and the case studies, including spatial and ritual markers: architecture, darkness, empty glass, hall (design, curtains, organization), handcuffs, page-turns, blank paper, rocks (nature), stage lighting, Steinway & Sons (instrument), table, water (nature), etc.

Gestural Markers

Gestural markers for silence can include the movements of a pianist freezing in mid-air to indicate silence and hold the audience's attention; the gesture of the drummer poised to strike their drum, raised sticks above their head; the attitude of the guitarist with eyes closed; the pose of the DJ with head bowed, the pianist vigorously nodding their head to an unheard beat. Or the many gestures that conductors employ for silence, whether compelling their musicians or their audience to be still. Or a hand raised in the air by a politician. Or a monk's crossed arms inside his cloak. The eloquent silence examples proposed in my Noisy Archive (Chapter 3) will often demonstrate the different dimensions of performed silence that are communicated within the embodied performance of silences.

Academic research on musical gesture generally corroborates my suggestion that a performer's embodiments can significantly influence silence perception. In "Visual Perception of Expressiveness in Musicians' Body Movements," Sofia Dahl and Anders Friberg write:

Musicians also move their bodies in a way that is not directly related to the production of tones. Head shakes or body sway are examples of movements that, although not actually producing sound, still can serve a communicative purpose of their own. [...] We prefer to think of these performer movements as a body language since [...] they serve several important functions in music performance. (Dahl & Freiberg, 2007, p. 433)

Musical gesture is often considered to be a multimodal phenomenon. It is not only about the visible but also about the auditory and the kinesthetic. In their article for the journal *Music Perception*, "All Eyes on Me," Küssner et al. show that a musician "acting" as a soloist not only exhibits more pronounced body movements but also attracts greater visual attention from observers, irrespective of their actual musical role. Switching the roles so that the accompanist *acts* as a soloist results in greater attention being paid to the person who embodies the role of the soloist. "Gesturing and movement are highly likely to attract overt visual attention, possibly taking precedence over auditory cues" (Küssner & Van Dyck, 2020, p. 198). An example would be [Katie Mahan's performance](#) of Beethoven's opus 111, in which she exhibits highly pronounced body movements. Her performative body is "acting" as a soloist.

Musicologist Nicholas Cook gives an example of this phenomenon, describing a striking public display of gesture:

In a 2002 concert performance [...] Russian pianist Grigory Sokolov performs virtuosity as much as he performs Chopin: his hands often fly up after a particularly telling note, providing an idiosyncratic balletic correlate to the

sound. His performance makes perfect sense on CD, but seeing it adds further meaning. The striking quality of public display in his playing is redolent of the cavernous spaces of modern concert halls and the star quality of the international virtuoso. He enacts exceptionality. (Cook, 2008, p. 1187)

Enacting exceptionality or performing the role of a soloist might have a self-fulfilling effect. But expressive gestures are not only about enacting exceptionality or performing as a soloist:

The musical gesture manifests itself as musical meaning at the intersection of sound, motor movement (whether open or suppressed), stylization and figuration. It can be associated with the visible or audible motor movements of the music-making body; it can refer to a typical sound progression or even to a culturally styled gestural convention. (Craenen, 2014, p. 166)

Pianist William Marx effortlessly embodies a combination of these manifestations in his [performance of 4'33"](#). He mixes classical performing conventions (tuxedo, massive grand piano) and a suggestion of visible motor movements (highly formalized and emblematic gestures) of the music-making body. His deliberate non-playing during the performance is made more effective by this stylized intersection.

Gestures can have many communicative embodiments and can arise from performance techniques. But communicative embodiments can also arise independently of functional gestures. Musicians are able to perform complex functional and expressive gestures simultaneously and independently:

Redundancy (or variability) in the motor system is therefore a crucial condition to perform tasks well and could explain why musicians performing unusual(ly) expressive gestures are still able to achieve a certain musical goal (i.e., produce an adequately expressive sound). (Küssner & Van Dyck, 2020, p. 196)

Research on musical gesture offers little consensus on functional taxonomies, underscoring their multifaceted and complex role in performances, as well as the difficulty of categorizing movements unequivocally; alternative terminologies are used. Some research fields, particularly those associated with body movements, such as kinesiology and biomechanics, avoid the specific term “gesture.” Within music performance research, gestures can describe *motion* or *movement* (Davidson, 1993; Gabrielsson & Juslin, 2003), *expressive movement* (Pierce and Pierce, 1989; Davidson, 1994), or *corporeal articulations* (Leman, 2007). Performance scholar Carrie Noland describes gestures as *learned techniques* of the body or *corporeal forms of cultural communication* (Noland,

2009). Music theorist Robert S. Hatten suggests that a *gesture* is “any energetic shaping through time that may be interpreted as significant” (Hatten, 2006, p. 1). If that energetic movement lacks meaning, then Hatten refers to *gesturing* instead of gesture.

An approach that is more closely aligned with my research assigns labels of sound-producing, communicative, sound-facilitating, and sound-accompanying gestures that include elements of visual communication and interaction (Jensenius & Wanderley, 2010). Jensenius’s communicative gestures correspond to my eloquent gestures.

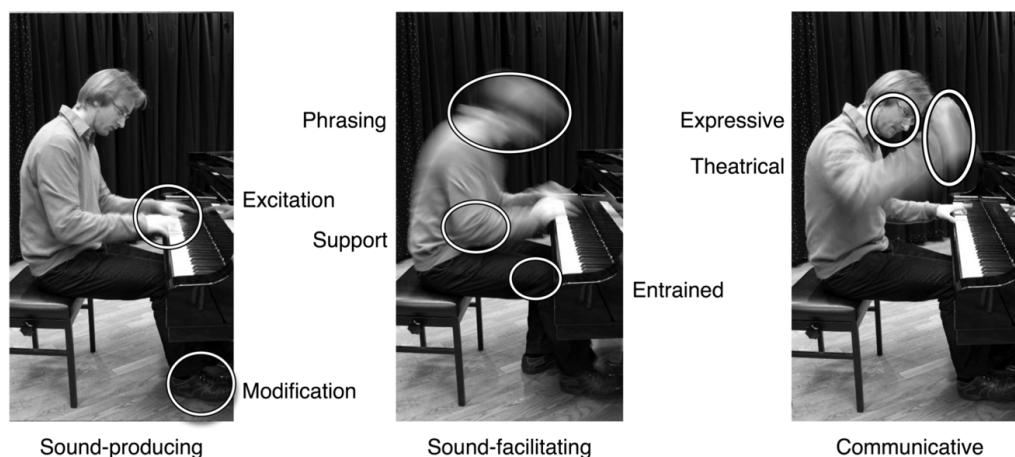


Figure 18: schema identifying gestural zones of the pianist’s body (Jensenius & Wanderley, 2010, p. 9)

For the purposes of this study, the term “gesture” encompasses any movement made by the performer in relation to the instrument. However, it is crucial to differentiate that not all movements serve as significant markers within the performance context. For instance, a physical exertion such as a leap may not equate to a gesture imbued with eloquence. A performed silence is not necessarily an eloquent silence. I concentrate specifically on those gestures that imbue the surrounding silence with eloquence: gestures that are (intentionally) executed to enhance the audience’s experience of silence. These gestures straddle the line between technical necessity (such as navigating the keyboard) and expressive eloquence (using dramatic movement to convey emotion to the audience), underscoring the multifaceted nature of performer intent and the nuanced interplay between action and silence.

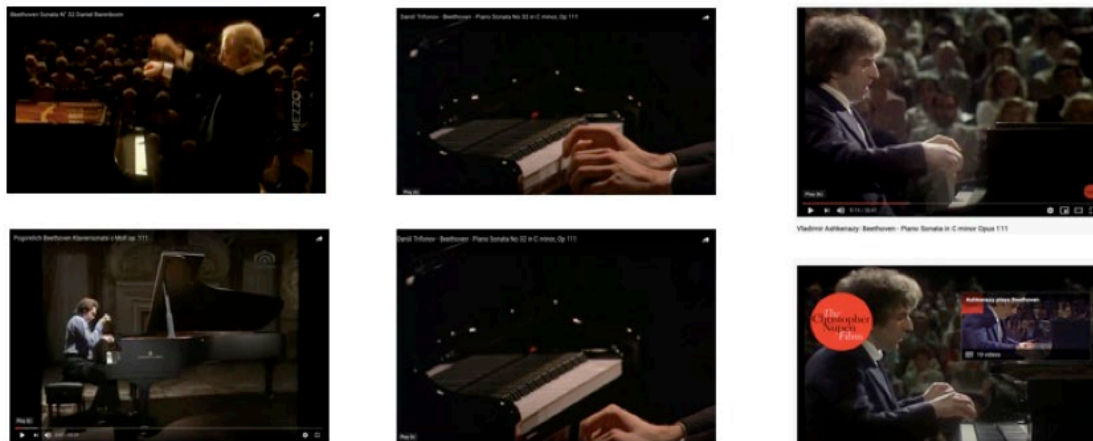


Figure 19: Classical pianists interpreting the fourth bar rest in the first movement of Beethoven’s opus 111: As will be discussed in Chapter 5, pianists perform the silences in Beethoven’s sonatas with an amazingly complex and varied vocabulary of gestures, confirming the difficulty of categorizing silence embodiments.

My analyses are influenced by my method of “reflective imitation,” which is a re-performing or re-enacting of other performers’ gestures. I analyze their gestures and embodiment to try to pinpoint the motivations of the performer and then re-use those motivations in my own performance to engender similar effects. I use video extensively as both a technique and an output. While my interest is primarily the silence gestures, I am inevitably drawn into the performance complexities of the notes as well.

A similar process of copying and re-rehearsing (Schechner) is also being tested currently by the artistic research group of violinist Barbara Lüneburg at the Anton Bruckner University in Linz. Her “Re-enacting Embodiment” method is similar to my approach and involves intensive back-and-forth work with performance videos in an attempt to shed one’s own performative habits and trade them for another’s: “The process of musically and physically re-enacting another person’s interpretation provides in-depth insights into the intertwining of musical interpretation and embodiment” (Lüneburg, 2023, p. 26). Similar to Lüneburg, my research focuses on bodily repertoire, body language, and the discovery of potentially new performative results.

Audible Markers

An electric bell ringing outside the auditorium becomes an audible marker summoning silence. So is a Tibetan gong calling monks to meditation; a massive bronze bell ringing high above a city is a call to mourning; or *The Last Post* played by a trumpet to commemorate the dead. These sounds call for and evoke silence.

Audible markers can be noisy and can have a role in implying silence despite their noisiness. The tolling bell in the distance can suggest silence to the listener or even summon silence in a crowd.¹⁵ The bell acts noisily as a marker, implying or imposing silence on the group of listeners. One musical example is American composer Alan Frederick Shockley's *Cold Springs Branch, 10pm* for piano, which includes a low Eb representing a tolling bell. The composer does not tell his audience what the bell tolls for, but it evokes an experience of silence.



Figure 20: performing the low Eb bell in Alan Frederick Shockley's *Cold Springs Branch, 10pm* (1999)

Even more tangibly, Arvo Pärt's *Cantus in memoriam Benjamin Britten* uses a real bell on stage, which is highly visible and audible to the audience, powerfully embodied by the physical gestures of the percussionist whose sole job is to ring the bell endlessly throughout the composition.

► AUDIO: PÄRT BELLS FROM *CANTUS*: <https://www.researchcatalogue.net/view/1712958/2916472?c=26>

¹⁵ It is possible to distinguish between markers *for* silence and markers *of* silence. For example, if the silence in the crowd follows the sound of the bell, then the tolling bell becomes a marker *for* silence. If the bell drowns out the sound of the listeners, then it becomes a marker *of* silence.

In Hollywood movies, audible markers for silence are common, for example, the banging of a wooden shutter in a western ghost town or the whipping noise of a flag waving above an empty schoolhouse. These sounds cognitively inform the receiver that silence is happening. In nature, weather and animal sounds can also serve as markers and cues for what seems to be silence. These might include birdsong, waves, rustling leaves, a gentle wind, crickets¹⁶ or frogs at night, and cicadas. These audible markers indicate a context in which listeners *feel* silence to be present, whether it is or not.



Figure 21: an 8th-century Coptic image of Saint Anne indicating silence (National Museum in Warsaw)

Audible markers can be loud or soft, subtle or overt, silent or heard, notated or not. Here is a non-exclusive list showing the variety of audible markers that occur in this research: amplification (on or off), audience rustle or applause, audience awe, audience censure, breathing, clock ticking, explanatory text, humming, loudness, meta-silence, silence as a behavioral construct exterior to the artwork, metronome, noise, notes, performer's silence before the concert, stopwatch sounds, tradition, traffic, voiceover, warmup riff, yelling audience, wrong notes, etc.

Symbolic Markers

There are many symbols that call for silence and have temporal permanence (they do not change over time), like rests in a musical score or a sign indicating “quiet please” outside a recording studio. These referent markers are printed, written, or drawn and have the benefit of making no sound themselves. They can last a long time. This 8th-century icon communicates its message as easily to the modern viewer as it did 1200 years ago. These symbols for silence will be referred to as “symbolic” markers.

When percussionist Max Neuhaus created a silent walk, he stamped “LISTEN” on the hands of each audience member. The inked letters were markers that invited the audience explicitly to use their ears but implicitly to be silent while doing so. Symbolic markers are instructive. They command or impose silence on the audience/listener.

¹⁶ Following Hollywood's trope of the windblown [tumbleweed](#) as a visual silence marker for abandoned towns of the far west, “[crickets chirping](#)” has become a slang term on social media for silence/no response. Crickets in fact are very loud.

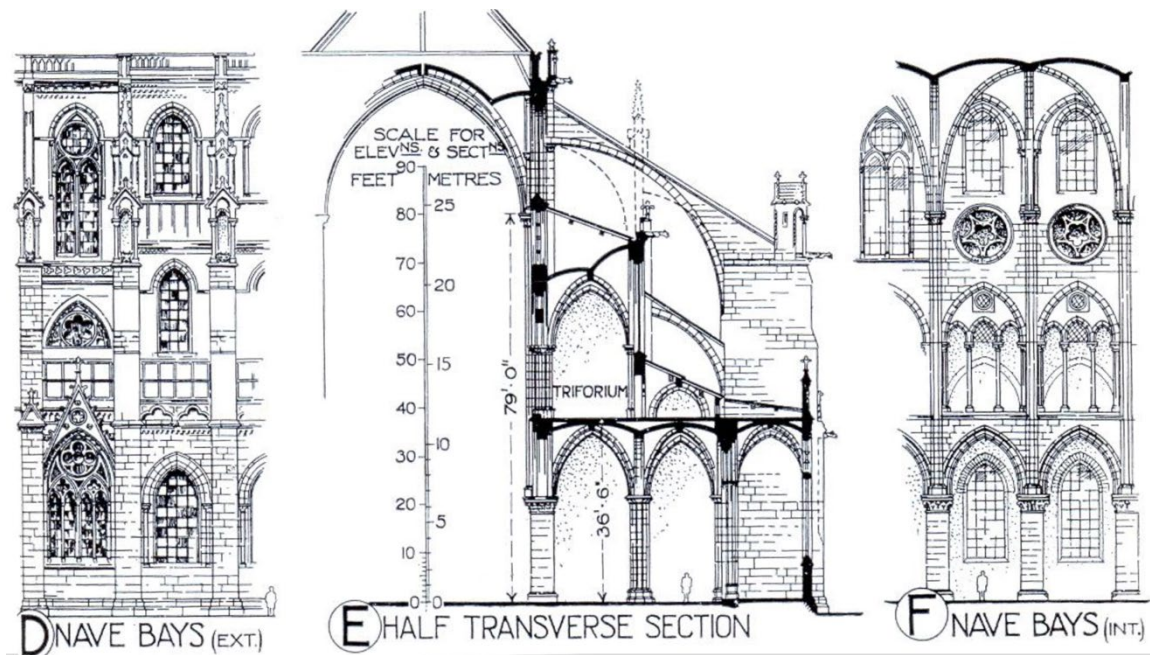


Figure 23: Notre Dame’s unique design of bays and buttresses contains massive resonant spaces (the triforium galleries) twelve meters above the floor. These are usually unseen by visitors. (https://upload.wikimedia.org/wikipedia/commons/d/d1/Notre_Dame_531.jpg)

This acoustic is often called into service in the experience of silence. For example, at the end of Bruckner’s *Te Deum*, the audience sits still, in awed and silent admiration of the echoing last chords. The combination of stone, resonant spaces, and curved vaulting create a long and unique diminuendo of sound after the last chord has been played by the musicians. There are abundant examples of architecture influencing the experience of silence—whether in a cathedral, classical concert hall, chamber music hall, living room, airport, elevator, shopping mall, restaurant, or bar. In each, the sound of silence is different. Effects of ambiance, room tone, acoustic, and reverberation color the listener’s silence experience.¹⁷ Cobussen echoes this:

Hearing several sounds simultaneously produces a complex materiality, the measure of which is not strictly additive. And while we know that sounds often leak from place to place, it is all too often assumed that rooms are bounded and neutral physical spaces. Yet, spaces actively shape the sounds that reverberate within them. (Cobussen, 2022, p. 49)

Because spaces actively shape sounds, the listener will experience silences more intensely in a reverberant context: this is ironic because that same reverberation prevents the notes

¹⁷ See the Noisy Archive (Chapter 3) for a detailed analysis of this sonic experience, which has been explored by musicians since Léonin and Perotin, the medieval composers of the “École de Notre-Dame.”

from fading away. Thus, their persistence *after* the musicians stop is what draws the audience into the experience of silence.

The built environment is an essential component of experiencing musical silence and contributes to the emotional affect of the silence. These silences are situated in space:

Through listening to a place, this place can be perceived not as a fixed context or a preexisting void in which something happens, but as an active and unstable agent, participating and constituted in the moment the action takes place.
(Cobussen, 2022, p. 13)

Music and space act upon each other, radiating sounds and silences that interact as unstable agents. This allows the experienced performer to engage with the acoustics during a performance.

Ritual Markers

Ritual, place, and music can encourage non-notated silence to arise. Audience stillness itself can engender silence. In Chapter 1, I suggested the term “meta-silences” to describe these non-notated silences that arise from combinations of music, place (context), and behavior (ritual). These participatory silences are not planned and do not only arise from the music. The audience can also enforce its own silence as a form of social control — “the silence of decorum” (Hodkinson, 2007). It might not be notated or formally planned, but it can often be anticipated. For example, the hush that falls over the audience when the lights dim before a performance is entirely predictable, though nowhere notated.

Multimodal Markers

Markers are not an either/or. They are not always either audible or visible. For example, the *shhhh* action can be both audible (saying “shhhh”) and visual (look at my finger and be quiet). Further, assuming we have knowledge of the gesture, the *shhhh* action can be translated purely into an iconic marker: a *picture* of a person with their fingers to their lips sends the same message as an actual person making that gesture. Another mixed marker is that of putting your fingers in your ears, which can be a call for silence (a gesture for others to react to), as well as self-protection against loudness (I need silence now). More subtle markers can be mixed as well. The children’s book character Paddington Bear was famous for his hard stare, calculated to embarrass someone into shutting up. The stare is a gestural (facial expression) attempt at enforcement, at imposing silence. But it is also a silent marker: Paddington would fall silent while “performing” the stare.

Below is an example of a visual marker for silence, which is purely visual. It conveys a high iconic aspect but a low instructive aspect. The VU meter indicates to the receiver that silence is happening at a specific moment, but it does not give an instruction for silence to happen, nor does it communicate any information about the silence. Yet this is a very popular symbol of silence amongst rock musicians, techies, and scientists:



Figure 24: VU meter indicating a lack of audio signal
(https://en.wikipedia.org/wiki/VU_meter#/media/File:VU_Meter.jpg)

Markers for silence can have their own physicality and permanence *and* have a temporal quality. Traditional Japanese gardens incorporate the sound of dripping water to convey an atmosphere of silence. The *suikinkutsu* 水琴窟 (which can be read as “water instrument cave” in the original Chinese) is an upside-down clay pot used frequently in Japanese gardens to create an irregular dripping sound. The effect is remarkably peaceful and effectively communicates an impression of silence, even in gardens that are surrounded by high-decibel modern cities.

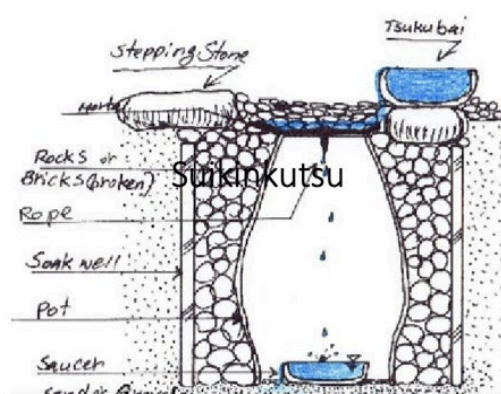


Figure 25: A *suikinkutsu* at Hosen-in Temple, Kyoto
(<https://traditionalkyoto.com/gardens/suikinkutsu/>); the drawing shows the underground structure (<https://www.semanticscholar.org/paper/Creating-a-Virtual-Suikinkutsu-Brewer/8a450662762acefab999ea2204036713b94b3ae2>). The large clay pot resonates with

the irregular drips of the water. This marker combines audible and visual aspects and exists in a physical/architectural context, as well as a ritual (meta-silence) context. Indeed the picture on the left could be considered iconic in a traditional Japanese setting, as the shape of the object is well-known and highly symbolic. That is, the picture itself evokes a sensation of silence.

Richard Long's conceptual artwork, *A Line Made by Walking* (1967), is another multimodal marker for silence. Long created the work by walking back and forth over the same line for many repetitions. The work left traces on the ground he touched.



Figure 26: Richard Long's *A Line Made by Walking* (1967), photograph, gelatin silver print on paper (<https://www.tate.org.uk/art/artworks/long-a-line-made-by-walking-p07149>)

This conceptual work is an embodiment of silence, a marker for stillness. The line is a marker for what has been.¹⁸ The walk is performed quietly over a long period of time, and once the physical embodiment is completed, then the line gradually fades away in silence as the grass grows back, also over a long period of time.

Contextual Markers

A major suggestion of this thesis is that the visual can be essential and unique to our understanding of performed silence. Visual markers allow performers to communicate many dimensions of silence, such as emotion, speed, and accentuation. Does this visual focus mean that eloquent silence loses its eloquence in a radio performance? Not necessarily: radio listeners can easily be transfixed by stillness in a song, breaths in radio plays, awesome pauses in broadcast concerts, and late-night pauses in the shipping news. This appreciation of silence on radio is a common experience, so it cannot be claimed that broadcasting or recording removes the emotional content of silence. Performed radio silence is more than an on/off state, a neutral not-sounding.

So while visible markers are lost between the transmission tower and the kitchen radio, other markers might gain in importance for the listener:

- These could be *metaxical* sounds (Amaral, 2022), encompassing the sounds occurring around, during, and within the performance. These sounds, such as room tone, audience rustlings, and incidental page turns, though faint, provide subtle cues about presence which help the listener grasp the context of both sounds and silence.
- Alternatively, the sounds of breaths, gasps, and the physical efforts of the performer, recorded with sensitive microphones and careful attention, can serve as cues for understanding radio silence.
- The characteristics of the performance space itself, whether a dry recording studio or a vast concert hall, contribute their unique reverberations to the broadcast, which the listener interprets.
- The political context surrounding the performance can also become a potent marker for silence.

On the radio, can the audience hear the difference between a performance of Cage's *4'33"* and one of Schulhoff's *in futurum*? The short answer is no: they sound the same. But no performance occurs in a vacuum, neither literally nor figuratively. There is always context

¹⁸ Another artwork, entitled *Klankspoor (Soundtrack)*, which explores similar concepts through very different techniques, was created by the Logos group, led by Godfried Willem Raes and Moniek Darge, in Ghent on July 16, 1982. The performers crossed the city carrying a machine that was recording in real time. The recorded magnetic tape was then left to rest on the pavement, or buried underground, leaving an evanescent trace of the sounds which had been recorded as the microphone passed over that precise point. (https://www.logosfoundation.org/scores_gwr/soundtrack/klankspoor.pdf)

in performed silences. Chapter 4 will mention a performance of *4'33"* on post-Soviet radio in which a strong political context had a powerful influence on the audience experience. This performance of *4'33"*, which would have sounded “the same” as a performance of *in futurum*, nonetheless acquired a totally different meaning due to the atmosphere of state collapse during which it was broadcast. To summarize, even if there is no visual communication, “total radio silence” gains meaning through non-sounding context.

Notational Markers

Composers in Western Classical and experimental music usually notate silence via symbols in the score that indicate duration. These rest symbols are aligned vertically with the beat at which they begin and are valid horizontally until the end of their notated duration. Although note symbols use the vertical axis to indicate pitch, rest symbols are not pitched. Thus rests are vertically placed wherever most convenient, which can be within or without the staff.



Figure 27: Different vertical placements for rests are acceptable since the vertical axis does not indicate pitch. But in multi-voiced notation, the vertical placement can imply voicing. The horizontal axis represents time. Each rest is placed at the beginning of the time span which it occupies. An exception is made when one rest fills the entire bar: then it is centered.

The horizontal axis indicates time so that when the duration of the rest is completed, another rest or note usually follows on the next available beat. During the notated duration, the designated performer, hand or voice does not play notes.

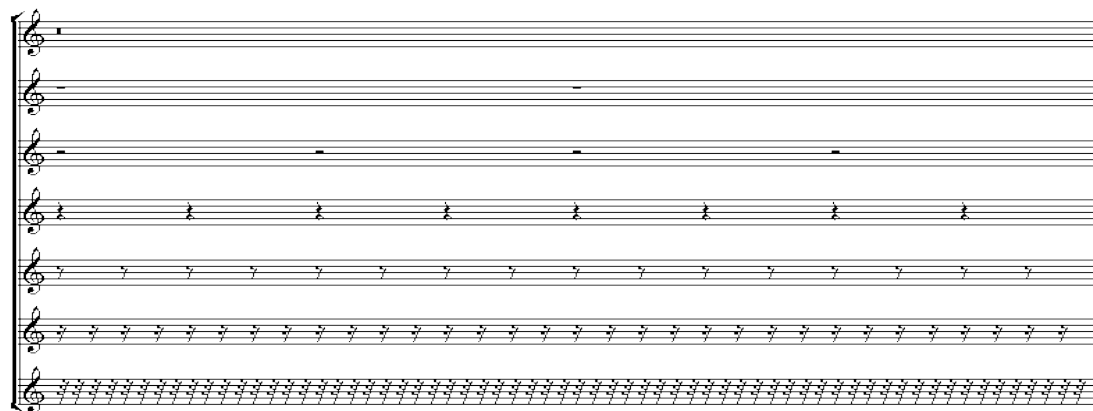


Figure 28: An 8/4 bar is measured out into the seven most common symbols for rests. This measure contains 64 thirty-second rests, for example. The different notations on each line add up to the same duration but represent increasingly fast pulsations.

The current western notational system for silence is quite simple. Each individual rest above encodes only one variable: duration. A second variable is pulse or beat, which is encoded in the sequential choice of which rests to use. A rapid pulsation of rests might thus suggest speed, as in the bottom stave. Yet an individual rest (or note) offers no encoding of source, affect, emotion, accentuation, phrasing, direction, symbol, internal, external, mental, physical manifestation, facial expression, or bodily gesture. Why? Do musicians seek neutrality from silence? Must rests communicate nothing about the kinds of silence they imply? Surely the desired silence effects have an importance that is not limited to duration? If so, where is that importance indicated? Where is that knowledge held? This section will answer some of these queries.

At first glance, an enquiring performer might find that standard rests are frustratingly neutral symbols and that no care has gone into their design. But silence notation has evolved through many manifestations since its origins in the late medieval period.

The origins of silence notation are not known. Ancient performed silences may not have been notated at all; or if they were, the notation has not been discovered or deciphered. Greek musical texts mention *kenos chronos* as a rhythmic silence; or *tempora inania* as a temporal silence. It is not known if these pauses were ever represented by notational symbols.

In the 4th century, Saint Augustine wrote of *silentia voluntaria*, referring to pauses outside metrical notation.

Silentia voluntaria is the term for pauses that are not indicated through meter—i.e. pauses that are ‘free’ of the metrical notation—and it might be expected that the ‘voluntary’ nature of these pauses was a mark of something akin to musical expression or phrasing. (Hodkinson, 2007, p. 28)

Again, no visual symbol still exists from Augustine’s epoch, but his text provides two valuable clues. Firstly, that pauses were part of contemporary performance practice, and secondly, that pauses potentially involved a departure from the meter. The role of performed silence in interrupting and thus delineating time is already suggested, even at this historical distance. In Chapter 1, I suggested that silence may both connect and disconnect, like a not/knot. Perhaps Augustine’s *silentia voluntaria* could be the first suggestion of silence as both *not* and *knot*. Little is known about the context or the sound of the pauses he describes. Pauses that are *voluntaria*, free of the metrical notation, would seem disconnected, “out of time.” Yet their placement within the chant at moments which suggest phrasings implies a connective function.

In psalm singing, silence is a well-attested part of medieval performance practice, but its meaning is not primarily musical. Instead, the focus is on

meditation, unity, ceremony, the visitation of the Holy Spirit, and the release of mood-enhancing endorphins through the controlled breathing of the whole monastic community. The transcendent possibilities, or at least the possibility of a change of mental state, are clearly present in the silences of medieval monastic psalm singing. (Hornby, 2017, p. 151)

Musicologist Emma Hornby discusses *media distincto* pauses in medieval chant, citing a later source:

In the middle of each verse, there was a pause for taking breath, the *media distinctio*. According to the fourteenth-century *Ceremoniae Sublacenses*, this pause was long enough for the singers to exhale and inhale again. The *media distinctio* was considered to be a ceremonial pause, enhancing solemnity of the chanting. It sometimes served as an architectural pause, lasting until the echo of the previous pitch had died away; the length of the pause depended on the acoustics of the building. (Hornby, 2017, p. 143)

Notation lagged behind practice in the performance of silence. Late-medieval music theorist Franco Colonis cataloged 13th-century mensural silence notations as follows:



Figure 29: from left to right: *pausa perfecta* (ternary = 3 beats), *pausa imperfecta* (binary = 2 beats), *pausa brevis*, *pausa maior semibrevis*, *pausa minor semibrevis*; and *finis punctorum* (Hodkinson, 2007, p. 26)

These symbols encode duration as a correlation of height. The longest silence in this example is the *finis punctorum*, the silence at the end of the composition. Graphically, the symbol stretches from the bottom to the top of the stave. Though somewhat modified in shape and placement, these symbols are still in use. Initially, only long silences were notated; short pauses to breathe might have been simply improvised, staggered amongst the musicians, and known as an implicit part of the performance practice. Somewhere in the medieval era, short pauses began to be notated as thin vertical lines as in this example of Gregorian chant.

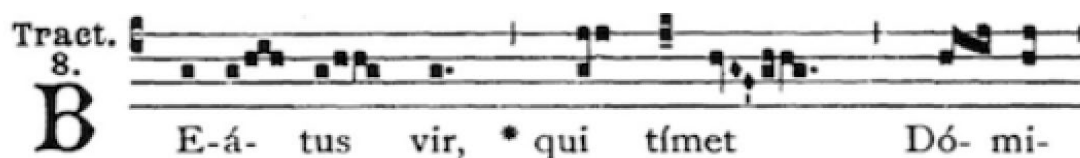


Figure 30: *Beatus vir qui timet* (<https://gregobase.selapa.net/chant.php?id=8857>)

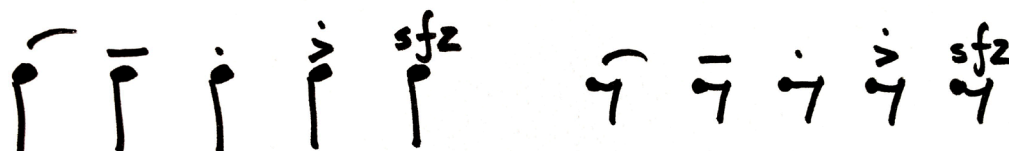
Silence notation continued to evolve towards rhythmic precision. By the 17th century, the durations and symbols of rests had been standardized as follows:



Figure 31: semibreve, minim, crotchet, quaver, semiquaver, demisemiquaver, and hemi demisemiquaver, or 64th-note rest (Hodkinson, p. 26)

From a graphic design point of view, the updated symbols are far more whimsical and lighter than their late-medieval ancestors. For example, the quaver almost looks like a breath and suggests speed and lightness. However, the symbols are now encoded such that the taller the rest, the shorter the duration. Hence a hemi demisemiquaver is almost four times as large visually as a quaver, yet it lasts only one eighth as long. This paradoxical system means that very long rests and very short rests are larger and more visually dense, while the most commonly used rests (in the middle of the range) are the smallest and visually lightest.

Another critique of silence notation that has been suggested above is that the symbols for silence are neutral, containing only information about duration and possibly beat division. Semiotically speaking, the symbols for silence are no more neutral than the notes themselves, which are also sterile on the page compared to the performed result. However, there is an important difference: notational rules for notes allow a wide variety of modifiers: accents, staccato marks, sustaining lines, phrasing, and so forth.



Unfortunately, there is no notational method for accenting a rest, slurring it, making it louder or softer, sharper or more diffuse. All of the examples on the right side are thus “incorrect” within the classical notational system.

Sometimes performed silences do not originate with a silence symbol (a rest) but rather with a delineative mark. Delineative marks include staccato, portato, lines, accents, and commas. These marks vary in usage between genres, and their interpretation is highly personal for musicians. Interpretive subtlety is necessary: the difference between *portato* and *portamento* may be debated in Early Music, but that there is a difference is immediately agreed upon, even though it only impacts the silence by a mere fraction of a beat. Similarly, every singer can identify for themselves the difference between a *gasp* and a *gap*, a *blank* and a *breath*, whether or not there are established notations for them.

Delineative marks are often placed directly after (commas, breath marks) the note that they modify. Some are placed over the notes whose ending they modify, like staccato or portato markings. The modification (staccato mark, *portato* mark, line) describes the release of the note.

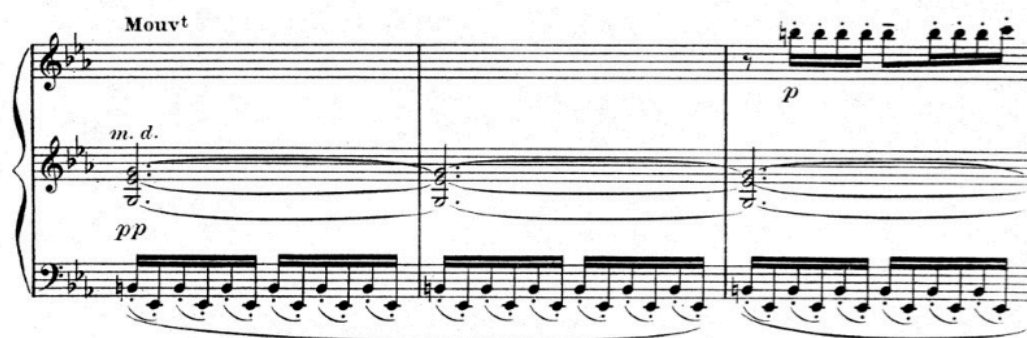


Figure 32: bars 32-34 of Claude Debussy's *Ondine* for piano solo (Durand, 1913)

In this complex example, the staccato marks in the left hand differ from those in the right hand. The combination of staccato points and multiple phrasing arcs is difficult to perform; hence it offers scope for virtuosity of interpretation. The staccato marks in the left hand might have more to do with the attack of the note than the release (an impression suggested by the long and short phrase marks connecting the notes and perhaps inspired by notations for bowed instruments). Yet the staccato marks in the top melody probably affect both attack and release, perhaps creating a series of micro silences between the sixteenth notes.

2.3 Markers and Framing

To better understand the potential of markers, a discussion of silence and framing is useful. The silences before and after the music can be considered to frame the work itself, thereby locating it and marking its borders. Silences surround the work, and in Western Classical music, they have come to be an integral part of concerts (as foretold by Busoni; see Chapter 1). These silences are not notated. They are ritualized and part of cultural and social conventions. Musicologist Richard C. Littlefield has examined silences as framing elements for the musical work itself:

In music, the internal environment is a virtual world of another temporal quality—a world we could not access without the silence(s) of the frames [...] At minimum, such a project should construct categories that account for the

lack(s) within music that allow us to hear framing as both necessary and contingent at the same time. (Littlefield, 1996, p. 7)

Littlefield's model, influenced by composer Edward Cone, describes the situation of many classical and modern compositions: before the music starts and after it has ended, there is silence. However, as both Littlefield and Cone acknowledge, some of the silence immediately before a composition is a part of the work, not of the frame. In other words, framing is a complex issue; frames suggest clarity and absoluteness but are often open and fluid. Hodkinson also discusses this porosity of the frame in her analysis of Beethoven's *Fifth Symphony*, which begins with a famous rest:

A painting, of course, conventionally has four sides, whereas temporal artworks have two: the beginning and the end. The silent downbeat at the beginning of Beethoven's 5th Symphony (1808) is one example [...] However, the symphonic silent downbeat is part of the work, not of the frame. The conductor performs it as part of the composed score; the work/score is already happening, even though we do not hear anything yet. This is a frame that participates in the work itself—metrically, gesturally, structurally and motivically—and cannot be separated from the work. The silence of decorum, on the other hand, is a convention that might change over time, can be overridden, and is external to the identity of the work itself. Thus, it is still possible to draw clear distinctions between inner and outer, internal and external, frame and framed. (Hodkinson, 2007, p. 32)

She suggests a conceptual differentiation between internal frames (those composed into the artwork, like the silent downbeat) and external frames (the silence of decorum). Exploring this very idea, French composer Pierre Boulez created a notational symbol for the silence that comes at the end of the artwork. He used this in his third piano sonata, a work that specifically explores framing and the edges of the artwork via an open form and unusual notation:



Figure 32: the ending caesura from Pierre Boulez's *Troisième sonate pour piano* (Universal Edition, 1961)

Boulez's symbol indicates both the end of the artwork and the beginning of what follows: it is a visualization of an otherwise invisible frame. And it is an acknowledgment of the contingency of that frame, its porousness.

Frames are necessary to separate art from non-art. But the frame itself is, in fact, undecidable: an indispensable element of an artwork, but still not really belonging to it.

This will become clear with examples of Cage's 4'33" in which the audible or visual demarcations of "before" and "after" give rise to ambiguity about the edges of the work. Even in a Beethoven sonata, one cannot easily answer questions about exactly when it starts. Porosity arises because that which needs to be excluded is, by definition, always already included on the inside, always already a part of it. As Cobussen writes, "The border between music and silence is neither discrete nor absolute" (Cobussen, 2024, p. 7).¹⁹

Besides the silences that precede and follow a composition, Littlefield recognizes other silences as well (thereby expanding Cone's ideas), for example, unplayable notes or pitches that are vertically too high or too low to be heard by humans.

To this, Littlefield adds a second kind of verticality:

The highest and lowest pitches establish borders that confine a piece of music to a certain registral space. Unlike the silence that occurs at the limits of human hearing capacity, the highs and lows produced by the piece itself are constrained by conventions of musical style and genre, and by the physical and mechanical limitations of instruments and/or voices used. In this case, the work itself acknowledges or compensates for its own framing silences, which the highest and lowest pitches 'fend off.' Another reversal of function takes place: instead of the imposition of frame from the 'outside' (silence, lowered lights, conductor's gesture, etc.), the framing occurs from the 'inside,' by the work itself. (Littlefield, 1996, p. 6)

Besides describing silences as markers that disconnect a musical work from "the real world," there are many other possibilities by which the beginning or the end of a piece of music can be indicated: applause, the audience's silence, an opening or closing curtain, lighting turned on or off, or combinations of the above.²⁰ Littlefield adds:

Of course silence is not the only musical frame. [...] Certain types of introductions and postludes can have framing effects [...] More abstractly, a

¹⁹ Both Littlefield and Cobussen have taken their inspiration from French philosopher Jacques Derrida's text "Parergon" in his book *The Truth in Painting*.

²⁰ A performance of Tchaikovsky's *1812 Overture* often ends with the audience cheering and clapping before the notes even finish. And in Charles Ives' *Central Park in the Dark*, the heavy silences before and after are often interrupted by audience members who do not realize that the performance is already/still happening. We can and often do access an in-temporal musical world without understanding the frame. A full and clear perception of the frame seems not necessary for an appreciation of the artwork.

composer's signature can frame a work, by delimiting audience expectations, establishing ownership, and separating it from works of other composers. Discourse about music can frame its reception. When literary genres [...] are used to frame musicological arguments, they can produce auras of authority and reality, respectively. (Littlefield, 1996, p. 9)

Considering silence as a frame is highly relevant to my own research. However, there is an important difference with my approach: whereas Littlefield and Cobussen mainly write about silences that are framing the music, my project is, in fact, about framing silences. By noticing different silences, I put a frame around them. Nevertheless, Littlefield's framing elements also resemble my markers, and the ambiguities he evokes—Where is the frame? Where is the silence? What is the role of the audience?—are quite similar to the questions that arise around my ideas on markers for silence, just as a frame's porosity shares similarities with the way I present silence as both a separator and a connector. Markers might indicate a before and an after, or an inside and an outside, but they also indicate and enhance the edge condition of the work, existing neither outside nor inside, and simultaneously both inside and outside (see Chapter 1 for my reflections on the not/knot). Littlefield has focused on silence as a frame, that is, as a knot/not between music and non-music, an either/neither belonging to the inside (the notes) or the outside (the not-notes). I will return to his theories later, for they also offer a useful perspective in analyzing Cage's 4'33".

2.4 Eloquent and Non-Eloquent Silences

Markers are essential to the performance of silences, and every rest is somehow surrounded by markers. However, it is the performer's responsibility to make choices about which rests are more communicative, and which rests are more functional. In performance, some rests are just not treated as interpretive or creative spaces; they are gestural or technical necessities, allowing the pianist's hand to get from A to B, permitting the flutist to breathe, or enabling the cellist to change bowing direction. That is, not all rests, not all silences are necessarily "eloquent." In situations where eloquence is not a desired outcome, the notational system is amply sufficient. Although this dissertation mainly deals with eloquent silences, it is important here to digress and propose some situations in which silence has less eloquence. Thus here are three common examples of pianistic rests that do not indicate silence, nor have an emotional dimension.

As a first example, a rest can be placed to indicate that other events are happening, including notes from other performers, leftover sounds from prior events, or even notes in the same hand.



Figure 34: excerpt from J. S. Bach's *Toccata BWV 915* (Henle Verlag, 1971)

In this example, the rest does not indicate performed silence or no-sound, as the keyboard player's right hand continues to perform notes, continues to create sounds. The rest rather serves an explanatory function to clarify the separation between the upper and lower voice. A performer who desires to bring out the independence of the fugal voices will annunciate this rest and make it audible as part of the lower voice's activity. The performer might thus guess that this rest is placed here by Bach or his publisher to encourage the player to modify the sound of the printed notes rather than to express a silence. The actual notation does not give concrete information beyond that of duration. This rest is not about silence *per se*.

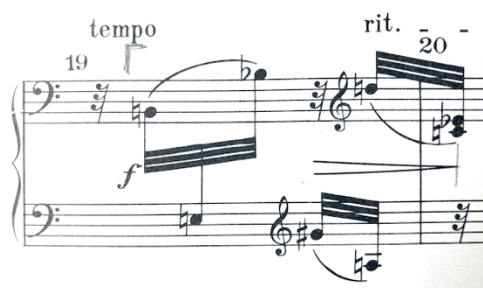


Figure 35: from Anton Webern's *Variationen für Klavier* (Universal Edition, 1937)

In this second example, from Anton Webern's *Variationen für Klavier*, the first rest has no rhythmic equivalent on the lower stave. But on the third beat, the composer introduces a rest on the upper stave while a G# is played in the lower stave (left hand).

By means of this notation (the absence of a rest in the first beat, the presence of an extra one on the third beat), Webern communicates to the pianist that one voice is expanding to two voices. The outward expansion of the musical lines is thus made apparent to the performer. The audience may not directly experience this effect, but the composer uses the rest notation to communicate emergent structural information to the performer.

A third example suggests that sometimes, the functionality of rests is solely about the manual technique and *praxis* of performing. In order for the performer to safely leap down

four octaves in tempo, composer John Adams has inserted rests in this example, creating a margin of safety for the leap of the hand.



Figure 36: from page 10 in John Adams's *China Gates* (Boosey & Hawkes, 1978)

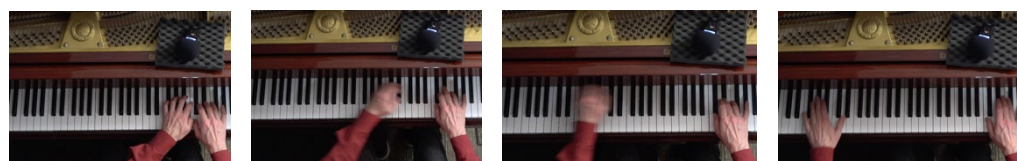


Figure 37: In this sequence, the left hand moves down three octaves to play the bass note. The gesture expresses effort but not eloquence.

The audience does not hear these rests as silences, as the pedal is held down throughout, and there is a full wash of sound from the piano and a continual pulsation of notes from the right hand. Although the rests are unheard, they serve the purpose of helping the pianist keep the steady and calm wash of sound needed for this minimalist composition.

The three examples above demonstrate simple rest notation, which has simple results. In these examples, the notation is precise and direct. These are examples of functional rests. They are not “eloquent,” as they do not serve to communicate to the audience.

When Does a Rest Become Eloquent Silence?

The simple notational system in the examples above might seem to imply either that silence is non-communicative, suggesting that there is nothing to describe, that rests are merely negative space; or the opposite: that musical silence is completely ineffable, thus incapable of being described. Yet, silence, as *interpreted* by performers, is anything but ineffable. Most rests are not just functional; most silences are indeed eloquent. Performed silence communicates temporality, function, and emotion. Moreover, after years of practice, each performer has their own unique tools for interpreting silence: gestural markers, breath, timing, and pedal. Further, external and environmental factors such as the hall, the audience, and the instrument can shape the performance of silence. Thus, there is a complexity of performative options for eloquent silence, and an array of possible affects to be perceived by the audience.

Recognizing the complexity of eloquent silence, some composers such as Luigi Nono and George Crumb incorporated additional parameters in their silence markings, via texts or modifications of existing notation:

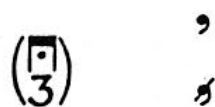


Figure 38: examples from George Crumb's *Makrokosmos* for piano: a precise 3-second pause; commas as breaths; and shortened commas (Edition Peters, 1972)



Figure 39: examples from Luigi Nono's *Fragmente-Stille, An Diotima* (1980), showing fermatas of different relative durations (from long on the left to short on the right)

The examples above give a broader idea of the functional and performed implications of standard silence notations, as well as newer experimental notations. Yet these notational experiments are exceptions that have not been widely adopted. Most composers continue to use the standard and straightforward set of duration-based rests. Much like the rhetorical silences of public speaking in ancient Greece, the eloquent silences of musical performance engender creativity and imagination. These performed silences are found everywhere, across periods and genres: from the keyboard works of J.S. Bach to William Bolcom's experimental ragtime pieces. Despite the neutrality and non-specificity of classical silence notation, the performative reality of musical silence is richly complicated, offering musicians many opportunities for exploring the borders of sound.

As the Debussy example above shows, many aspects of phrasing are cumbersome to symbolize. It is impossible to notate all potential articulations and intentions. Here is a complex example of three eloquent and famous silences from the ending of Frederick Chopin's ninth nocturne.



Figure 40: bar 63 of Frederick Chopin's ninth nocturne with markings by my teacher at the time, Galina Belenky (Polskie Wydawnictwo Muzyczne, 1965)

In practice (and in the traditional way I was taught to play it by a piano teacher trained at the Moscow Conservatory), the second two rests are often performed similarly, with pedal, while the first rest is performed considerably shorter, as in this video essay:

VIDEO LINK: <https://www.researchcatalogue.net/view/1712958/2916399?c=5>

The traditional performer may decide on the eloquence for each rest based on the following:

- pre- and post- *context* (for example, the notes seem to become more frantic and more grasping),
- *phrasing* (for example, the pedal and arched phrase marks imply a similarity to be achieved),
- *reference performances* by pianists of note (for example, “That is how it was played by Emil Gilels”).

The dimensionality of the silences is not fixed, even in the relatively traditional context of the 19th-century romantic piano repertoire as it is now performed.²¹ These rests offer a freedom of interpretation that can be adapted to the audience, to the hall’s acoustic, or to the mood of the performer. The multiple possible interpretations illuminate the key interpretive role of the performer. That interpretation depends not only on the score but also on the way each rest is embedded in musical language.²²

2.5 Multidimensionalities of Silence

In order to better understand markers and their use in creating eloquent silences, it is important to ask briefly *what* is communicated by silence. How does that communication of silence lead to complex perceptual experiences? In my research question, I evoked the multiple dimensions of silence in composed music: What might those dimensions be? Musicologist Elizabeth Margulis’s analysis of silences in classical music has been essential in directing my research due to her model of silence dimensions. She postulates that musical rests are *unidimensional acoustically* (a rest indicates only duration) but *multidimensional perceptually* (the performed rest has duration, function, and emotion). Often, the performer communicates these multiple dimensions of perception to the

²¹ See the book *Romantic Anatomies of Performance* for a look at the “carnal” embodiments of Chopin and his contemporaries in early 19th-century Paris (Davies, 2014, pp. 41–64).

²² The rest (to paraphrase British philosopher Marianne Talbot) is the *referent*, but has no meaning until that meaning is conferred by the context around it (Talbot, 2003). Yet, sometimes that meaning can also be conferred by directives, by pointing. To map Talbot’s terminology of spoken language onto musical performance, silence markers are *pointers* which show the meaning of a silence.

listener. In Margulis's vision, the audience and performer perceive the dimensions of silence based on their information about what is happening, their relationship to the music being performed, the performer's embodiments of silence, the context, the space, and their own state of mind. So, what are those possible perceptual dimensions of silence?

Margulis posits that performed silence has at least three dimensions: duration, function, and emotion (Margulis, 2007, p. 246). I suggest that her concept of silence dimensions might be rephrased as follows: Dimensions might include temporality (pulse, speed, duration), function (such as accentuation, expectation, remembrance, listening), and emotion. Emotions, or possibly affects, constitute an almost limitless list of the communicative possibilities of silence. As subtle as these perceptions are, they are fertile ground for musicians. However, in addition to Margulis' dimensions, another one could be mentioned: directionality, a potential function of silence that could communicate harmonic, rhythmic, melodic, or polyphonic motion. Especially in tonal music, the context of harmony and rhythm plays an important role in the perception of silence. Not every silence offers the possibility of engaging with all different dimensions. But they also invite creative combinations. One silence at the piano could be *exquisitely promising* or *disturbingly muted*. Another silence might have a strong sense of *location*, while another could carry *tragic* or *tense* emotion. One silence might communicate more about *listening*. As composer Luigi Nono suggested, silence can be *poetic*, full of *fancy-free*.²³ It is not only silence by itself that leads to a physical or mental reaction in the audience. It is the set of very specific, singular circumstances in which many multimodal silences are participating, which directly act on the receiver's nervous system.

How do musicians describe the emotions of silence? Based on my experiences in teaching and performing, this is a non-exhaustive list of emotions potentially communicated through the multidimensionality of silence: Abrupt, anxious, awesome, arresting, breathless, brusque, calming, choppy, closing (inward) or closing (finalizing), concluding, confronting, deafening, destabilizing, disconnecting, disturbing, droopingly full (Margulis), eager, endless, final, full of fancy free (Nono), humorous, intemporally sung (Nono), interruptive, intimate, inward, ironic, irregular, leading, liminal, loud, meditative, menacing, muted, opening outward, pastoral, peaceful, penetrating, pregnant (Scruton) promising, prophetic, quieting, random, refreshing, relative, relaxed, regretful, with sharp sudden ecstasies (Nono), surprising, suspended, suspenseful, tense, too short, with tranquil breaths (Nono), tragic, unexpected, with unutterable thoughts (Nono), etc.

²³ American sound artist Christopher DeLaurenti has remixed Nono's quartet to focus (only) on the silences. (<https://delaurenti.net/chapters/>)

This fluid list of perceptions suggests overlaps between functions of silence and communicated emotion, and has been invaluable in illuminating a large diversity of silence examples via the lens of multidimensionality. Silence perceptions are essential to my teaching practice. I continue to use and refine this list with my students as I invite them to research new engagements with the dimensions of silence.

Attempts to qualify the dimensions of silence are not limited to music. There are strong parallels between the perceptual dimensions of musical silence and spoken silence. In his book *Silence, Speaking, and Language*, cultural theorist Paul Goodman explains:

Not speaking and speaking are both human ways of being in the world, and there are kinds and grades of each. There is the *dumb silence* of slumber or apathy; the sober silence that goes with a solemn animal face; the *fertile silence* of awareness, pasturing the soul, whence emerge new thoughts; the *alive silence* of alert perception, ready to say, ‘This... this...’; the *musical silence* that accompanies absorbed activity; the silence of *listening* to another speak, catching the drift and helping him be clear; the *noisy silence* of resentment and self-recrimination, loud and subvocal speech but sullen to say it; *baffled silence*; the silence of *peaceful accord* with other persons or *communion* with the cosmos. (Goodman, 1971, p. 14)

In music, visual cues such as performative stance and bodily gestures often indicate these dimensions (“kinds and grades”). As with speech, the circumstance in which the silence is performed is of crucial importance. This contextual information is part of Margulis’s *multidimensionality*, which will, at least for now, remain—as Busoni suggested—elastic.

Chapter 3. A Noisy Archive of Eloquent Silences

Introduction to the Noisy Archive

This archive attempts to depict some of the great variety and complexity involved in performing silences. It is a starting point for those interested in musical silences, presenting a flexible and constantly evolving search for an understanding of performed silences.

In Chapter 1, I covered existing terms for silences. In Chapter 2, I discussed potential markers for studying performed silence. This archive will give a more detailed idea of the various markers, as I have defined them in Chapter 2, through concrete examples from my practice. These examples will illuminate the use and kinds of visible and audible markers, the potential multidimensionality of performed silences, and the role of silence as both connector and separator, which I conceptualize with the terms “not/knot.” The archive will also testify to the incredible heterogeneity of performed silences and their resistance to taxonomies, for the silences offer no easy synthesis.

This archive is a noisy archive. It is noisy in the sense of being unpredictable and irregular, like a staticky television signal or an intermittent radio transmission from outer space. It departs in all directions. However, not everything could be included: silence news, silencing, sociological silence, public silence, scientific silence, silence technologies, silencing as a weapon, silence as a political tool, interstellar silence, the pandemic silences—these are examples of directions in which this research could have departed. To write specifically about performed silences, I had to silence a great number of related silences.

Moreover, I had to make choices about which repertoire to include. I studied silences and absences in rock music, bebop, heavy metal, air-guitar competitions, Merce Cunningham’s choreography, Samuel Beckett’s texts, and the Sankai Juku dance company. In the end, most of the

A non-exhaustive list of additional artists, artworks, and art forms that may be helpful for further explorations of musical silences:

Jean Barraqué: piano sonata

Samuel Beckett

Pierre Boulez: *Notations* and the Third Piano Sonata

John Cage: *Songbooks*, *Ryoanji*, and *Waiting*

Contact Improvisation (physical movement practice)

Tan Dun: *Circle with Four Trios*, *Conductor*, and *Audience*

Ron Ford: *Open* for accordion and assistant

Eugène Ionesco

Vanessa Lann

György Ligeti: *Touches Bloquées* piano étude

George Maciunas: *Solo for Violin*

Olivier Messiaen: *Catalogue d’oiseaux*

Thierry de Mey: *Silence must Be!*

Meredith Monk

Noh drama

Pauline Oliveros, especially her *Deep Listening* exercises

Salvatore Sciarrino, for example the clarinet part in *Lo spazio inverso*

Sankai Juku dance theater

Giacinto Scelsi

Karlheinz Stockhausen: *Klavierstücke IX* and *X*

The Wandelweiser Group, especially Bin Li and Radu Malfatti

Eugène Ysaÿe: the opening of the Sonata for Violin in A minor

works in the archive are pieces that I have a personal and tactile connection with, ones for which my hands know each nuance. My approach²⁴ to each silence begins with playing, so I did not include topics for which I had insufficient experiential data (see above sidebar, however for many more directions).

This personal approach is fundamentally aligned with the tenets of artistic research: research that is conducted through the creative act of making and critically examining that making. Such an approach can contribute insights to the scholarly discourse on silence within the realm of musicology and performance studies as well as to practical knowledge for composers and performers.

How to Use the Archive

Each example in the archive focuses on a particular aspect of performed silence, presenting a type of silence, a marker, a knot or a not, a specific notation, or a performative problem—concepts explored and explained in Chapters 1 and 2. For each of the examples, I have created at least one miniature video essay, in which I address—from a pianist’s point of view—*how* the silence should or could be performed and what types of experience a particular way of performing might engender for the performer and the audience.

Even if they are made at different moments in the research process, the videos represent a creative research method as well as an experimental artistic output, such that the video essays in the overall research project were a combination of:

- a source from which research questions emerged;
- experiments and test cases; and
- illustrations of arguments.

The videos were filmed in my practice studio, an acoustically imperfect room. The artifacts of real life often intrude, such as the sounds of traffic and birds and clanking radiators. These videos are speculative, exploratory, and personal. They are themselves launching points for further questioning and study. The videos are accompanied by supporting text and media,

²⁴ Unquestionably, this adds a bias to my research. My choice of repertoire has been shaped by teachers, competitions, and programmers. These external guide rails were mixed with my personal and idiosyncratic predilection for a type of Dada-esque theatricality. The Western European avant-garde idiom in which I was trained rarely included materials of other cultures and non-western approaches. Hopefully, these biases in my early outlook are somewhat tempered by my subsequent work in broadcasting, my teaching experiences, and my theoretical and historical explorations.

which may include scores, screenshots, personal anecdotes (“intermissions”), and links to related performances.

As discussed in Chapter 2, eloquent silences enable the performer to communicate with the listener. This chapter draws together a wide variety of examples of performed silence in which the performer communicates silence in different eloquent ways.

For convenience, this chapter differentiates these silences into five parts. Each part contains related examples of performed silences, which are loosely grouped by their commonalities. The grouping, in which I am deliberately stretching the definition of silence, is based on notation, ranging from precisely-notated to non-notated silences.

- Part 1. *Integrated silences* (silences that are fully notated and integrated into a musical score)
- Part 2. *Absence art* (“conceptual” works made of silence)
- Part 3. *Silent discourse* (hidden voices, partially notated, often with textual explanations)
- Part 4. *Silences arising from the work or its context* (non-notated audience silences arising from rituals, context, and behaviors; that frame or shape our experience)
- Part 5. *Silencings* (non-notated social, cultural, or political silences)

Part 1: Integrated Silences

Integrated silences form part of the artwork and are notated via durationally precise rests. These rests are integrated into the overall notation of the composition. In most of cases, these silences are already part of a compositional intention (as in the Chopin example). How they are mediated is often unspecified in the score (unidimensional rests), and therein lies the relevance of examining the multidimensionality of eloquent silences and the means through which performers embody them.

3.1.1 Yearning Silence—Frederic Chopin: Ninth Nocturne opus 32, no. 1

NOTATION: quarter-note and half-note rests, with or without fermatas

MARKERS: visible: often swooping, curving arm gestures that seem to summon or prepare the nostalgic silences; contextual: performance traditions

► EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916399?c=5>

Frederick Chopin frequently emphasized yearning and nostalgia, especially in the ending to his ninth Nocturne. The example is entirely unbarred, suggesting the *tempo rubato* freedoms of a cadenza. The successive pauses seem to summon longing, yearning, nostalgia, surprise, anguish, despair, or regret. This intense compression of emotions into a few rests is made possible by the complexity of the note passages in between and the tensions already set up in the exposition. In this fragment, the note passages between the silences are characterized by chromaticism, anticipation, or suspension in the melodic runs and unstable chords. Each rest

is inextricably linked to the notes around it, in a context of tension and release. This type of freely rubato writing contrasts with the regularity of the preceding three pages, but is certainly characteristic of Chopin, as in his *Impromptus*. In the quoted example, the right hand suggests the melodic potential of a violin, complete with pauses for upbows; it could equally well be reminiscent of an oboe or clarinet, with quick passages punctuated by pauses for breath. The pauses “speak” along with the notes. Unlike examples in 20th-century music, these silences do not seem to have their own tangibility. Whatever instrument is evoked here needs breath-like pauses, and the pauses contain a directionality as they lead fluidly, and in rubato timing, to the next melodic flourish.



Figure 41: excerpt from the ending of the ninth Nocturne (Polskie Wydawnictwo Muzyczne, 1965)

The first rest on the last line might imply a function of drawing out, pulling or extending. The last rest creeps in with finality, announcing the end of the composition. American novelist Amor Towles writes of a (fictional) performance of the ending of this nocturne:

Whatever personal sense of heartache Chopin had hoped to express through this little composition—whether it had been prompted by a loss of love, or simply the sweet anguish one feels when witnessing a mist on a meadow in the morning—it was right there [...] one hundred years after the composer’s death. (Towles, 2016, p. 326)

Each rest offers evidence for the multidimensionality of performed silence. The rests seem to function as pregnant silence, anticipatory silence, surprise silence, and breathing. The first two fermata rests in the example above imply a beat and are almost accented in their performance. The results could describe heartache, loss or sweet anguish. But they also serve a breathing, interrupting function, a catching of breath in the melody.

A pianist might choose to embody this catch in several ways. One option is to focus on the relaxation of tension in a reaction against the sudden G7^o chord that has preceded the rest. Another embodiment might be more of a visual bounce with the hands, emphasizing the accentuation of the rest. So the rests could be interpreted as drawing the line through, pulling Chopin’s gradual melodic ascension upwards. Or rather focusing on the interruptions, on the

thwarting of expectations, which also characterizes the melodic ascent. Other interpretations are just as possible, for example, one in which the pedal is held down to reinforce the dissonance of the minor 7th interval (G to E[#]). In this case, gestures would still be possible but might be embodied in a more drawn-out or languorous manner.

Each of Chopin's silences in this coda seems to summon a different type of nostalgia, knotting and weaving the phrases together. Similarly, the silences seem anticipated and prepared by the notes.

3.1.2 Pantomimed Silence—George Crumb: *Vox Balaenae*

NOTATION: Innovative notation precisely indicates the manner of embodying silent notes.

MARKERS: visible and (in)audible: The fingers play in pantomime, hovering above the keys, moving without playing; notational: "Hold attitude" suggests staying still and maintaining a position.

► CRUMB EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916402?c=6>

In this example from *Vox Balaenae* (1971), George Crumb is carefully scripting silence and has precisely notated the desired embodiment. Note the indications of gesture on the last, inaudible phrase: "play in pantomime," "hold attitude," as well as the very precise indication of timings underneath the fermatas (5 and 7 seconds, respectively). Crumb is creating a *visible* echo of the previous phrase. This is a silence that must be *seen* in order to be *heard*.

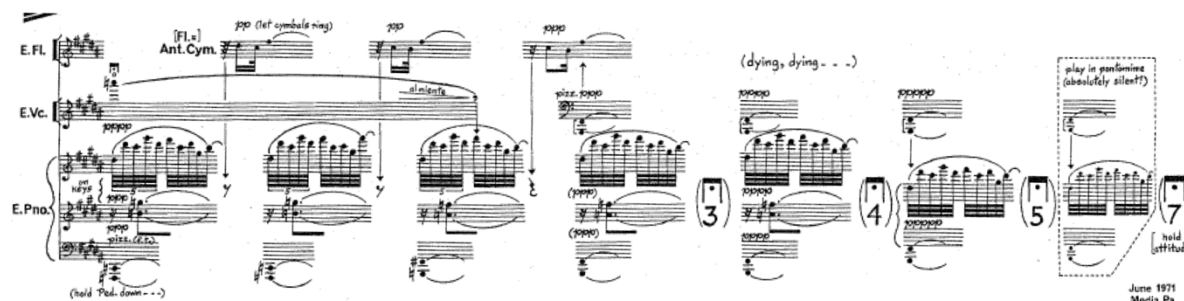


Figure 42: the ending of George Crumb's *Vox Balaenae* (Edition Peters, 1971)

I have performed this piece many times, but I find it extremely difficult to end convincingly. The disembodied playing of the last unheard notes can easily look artificial on stage. But like many of Crumb's musical ideas, it becomes a question of theatricality. Emphasizing the gesture makes it more effective. It is the opposite of Morton Feldman's world (*Intermission 6*) of subtly still silences. In Crumb's magical world, the performer must theatrically embody the silence.²⁵ In Feldman's more austere sound world, the performer usually seeks physical

²⁵ Crumb uses the same technique in *Apparition* (Besingrand, 2023, p. 52).

stillness and a minimum of gesture. And yet, both experiences could be described as dreamlike, probably due to the relative lengths of the silences.

Crumb has created a literal marker for silence: a pantomime of playing, which is acoustically silent, although visually not so. His ending critically reflects our capacity for retroactive hearing (connection) and a drawing out of the frame at the end of the composition (disconnection); these silences are (therefore) simultaneously not and knot.

3.1.3 A Field of Silence—Tom Johnson: *Imaginary Music*

NOTATION: random rests are distributed on a field of white, floating around three notes.

MARKERS: The three notes can be interpreted as markers, which make the silence audible or tangible. Or the white space or the traffic can be audible/contextual markers for silence. The white space on the page offers a notational marker for silence.

► JOHNSON EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916405?c=7>

Tom Johnson's book of pictures, *Imaginary Music*, is intended as a Cage- and Fluxus-influenced book of nonsense notations. These whimsical drawings stretch conceptual limits by creating unplayable music meant to be looked at and admired. Deliberately unframed, the score lacks a timeline and has neither a beginning nor an end.

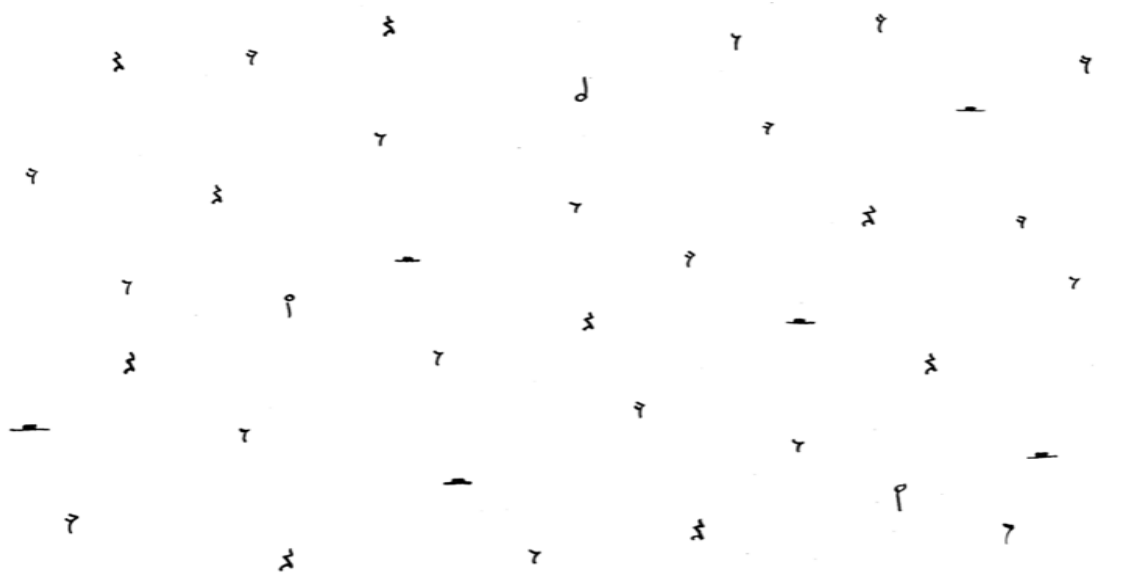


Figure 43: *Quiet Music for an Imaginary Celeste*, by Tom Johnson (Editions 75, 1974)

Quiet Music for an Imaginary Celeste consists of forty rests and three half-notes evenly distributed on the page. It is cheekily decorative but simultaneously cries out to be performed. Johnson cites turn-of-the-19th-century Parisian provocateur [Alphonse Allais](#) as an influence

(Johnson, 2015, p. 46). Like Allais, he initially intended his experiments more as graphic design than as musical works.²⁶

Like Dieter Schnebel's imaginary compositions, this score uses the icons of silence (rests) as graphic elements to be whimsically played with. Johnson's drawings have no indicated beginning and end; they exist abstractly as directionless random fields, potentially extending far beyond the page. The score looks a bit like a crowd of musicians on their day off, hanging around for a picnic in a field of silence.

I have interpreted the three half-notes variously as a cue for three musicians or a cue for three sounds—the resonant bowls in this video. Those three half-notes are perhaps the gestural and audible markers that highlight the silences around them. The white space in my video is the space between the plants, although the plants themselves or the traffic noise in the video might be the white space. The work leaves much space for imagination. Perhaps the traffic noise is the knot that holds this particular video performance together. It is the background to the background.

In terms of the dimensions of silence, this particular score also offers a perspective on silence's source: the spatial layout²⁷ of the rests on the page, and the lack of a clear frame, both suggest that silence is going on everywhere, all around us; and that it is composed of small bits of information.

3.1.4 Interruptive silences—Robert Eidschun: *Specks*

NOTATION: classical rests

MARKERS: embodied: performative choice to articulate interruptions by bodily freezes, deliberately staring at the score

► EIDSCHUN EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916408?c=8>

Specks is a composition that Robert Eidschun wrote for me, in which silence plays equally a structural and an interruptive role. The rests occupy a lot of the composition, and indeed, for every set of notes, there appears to be a balancing set of rests. These serve an interrupting and a connecting function for the individual short phrases of notes.

²⁶ However, many anti-establishment French composers of the 1990s (such as [Denis Chouillet](#), Dominique Clément, [Jean-Charles François](#) and Ernst H. Papier) were influenced by Johnson's scores, interpreting them as *real*, not *imaginary* music, and even performing them, un-silencing these pages by interpreting them onstage.

²⁷ Intriguingly, there is visible white space (*ma*) between the rests, which could mean that the rests sound in one manner, and the spaces between the rests sound in a different manner.

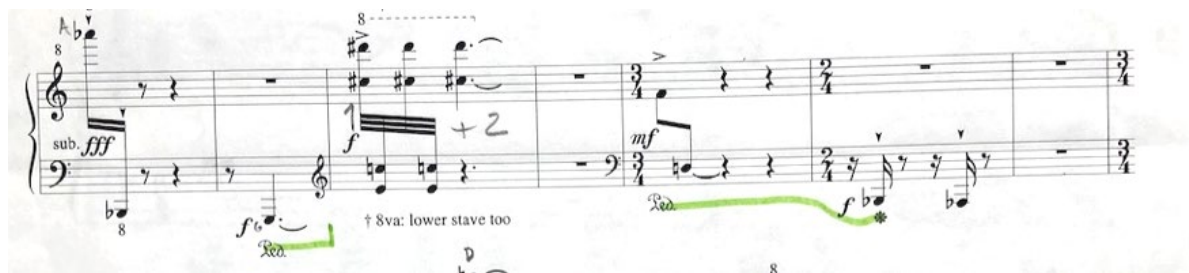


Figure 44: second line from *Specks* (Eidschun, 1999)

Interruptions have the power to help us remember something that has just happened. They signal one's brain in such a way that one later recalls the event better than if it had not been interrupted. Composer and sound artist Paul Craenen writes about cuts and interruptions never being absolute but always affording a kind of “bleeding” or “afterglow” of the interrupted events (Craenen, 2024). This might suggest a small-scale version of DJ Jacques van Zyl's [black noise](#) or even an alternate interpretation of composer George Antheil's [hectic silences](#).

3.1.5 Morton Feldman: *Intermission 6*

NOTATION: white space on the page (ma)

MARKERS: embodied: performer's choice of gesture, which might evoke (not impose) silence; contextual: stillness

► FELDMAN EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916411?c=9>

About the experience of listening to Feldman, English musician David Toop writes:

[...] washed by infinitely subtle traditions of tone that linger after the echoes of repetition, the room becomes silent sound, the memory of sound and the future of sound. (Toop, 2005, p. 93)

From Toop's viewpoint, silence in Feldman's music is about place, memory, and potential. These are expressed through a sonic vocabulary of non-action, non-moving. Many people remember his music as “silent.” Yet Feldman requests the use of the pedal during the performance of the white spaces so that the sound seldom stops; there is always a very quiet sound, always something.

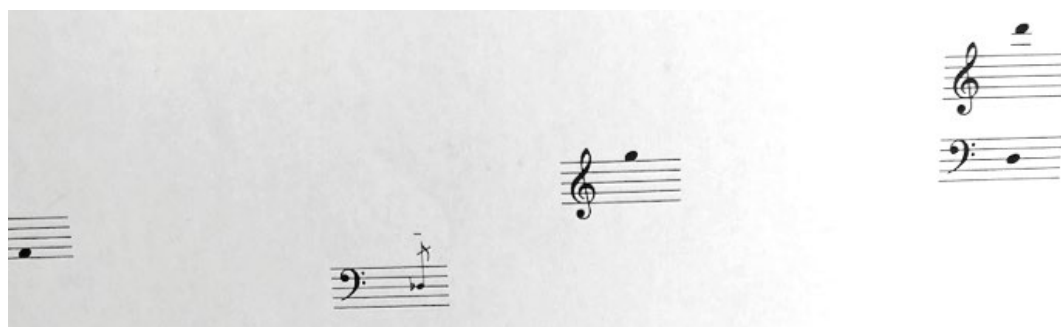


Figure 45: excerpt from *Intermission 6* (Peters, 1953)

The absence of detail and the withholding of information between sounding and silent music in Feldman's scores is what creates the knot, the connection between events. Indeed, my experience as a performer suggests that this music is about time; about slowing time down and relishing the feel, the tangibility, and the long-term elongated relationships between sounds. In that sense, my experience as a performer differs from Toop's observations: from my point of view, the room does *not* become silent sound, because I know that the next note will inevitably come. The listener's experience is different, for there is less certitude of the arrival of the next note. For them, this is an artwork in which the *not* aspect of silence is much stronger than the *knot*. The distance between the notes is so far that the connecting characteristics of silence are strained. And as Toop says, the memory of sound (which is probably not silence) is also strong for the listener. This gives these silences a retroactively "descriptive" function; these silences summon themselves.

3.1.6 Nostalgic Silences—Denis Chouillet: *Je me souviens n°4*

NOTATION: no rests notated; silence perceived behind the artwork

MARKERS: audible: notes and durations potentially; contextual: nostalgia

► CHOUILLET EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916414?c=10>

In Denis Chouillet's composition *Je me souviens N° 4*, there are no rests, no pauses, no barlines. The end of the piece tapers off without a notated conclusion. Yet memory is not necessarily stillness, and certainly not silence—it can be nagging, repetitive. The drawn-out sounds and the leitmotif of the descending sixth interval create an atmosphere of silence as if it were a silence lying "beneath the chatter of words" (Merleau-Ponty, 1962, p. 214). When performing this piece, I try to be very subtle about embodied markers, not drawing attention to my gestures. The silences are relative ones that lie beneath the notes.

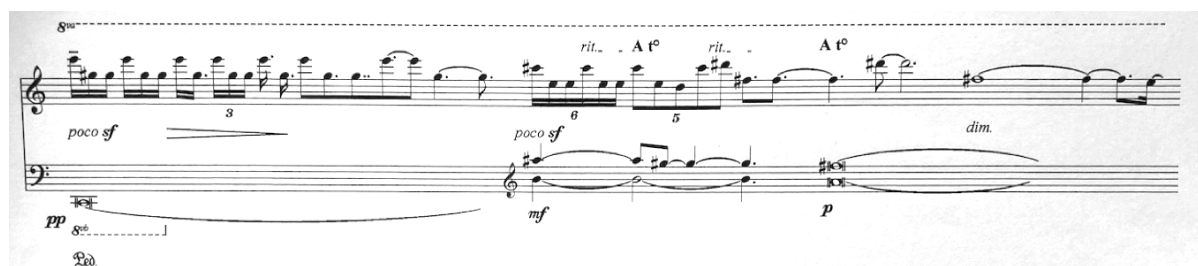


Figure 46: excerpt from *Je me souviens N° 4* (Chouillet, 2010)

Part 2: Inherent Silence: Works Made of Silence

Each of the artworks in this second part provides instruction(s) for silence. Those of the compositions which do contain notes or sounds only do so with reference to the silences which are the topic of the artwork. Other commonalities are that (almost) all of them are composed, meaning that there is a notated score and often detailed instructions for the performer. They usually imply performance in a specific situation by practiced musicians or actors. These are works of “inherent silence” which belong to the broader category of “absence art.”

The term absence art is drawn from the writings of Belarusian philosopher Anna Farrenikova. Although she readily acknowledges that even John Cage’s *4’33”* is not about absence *per se*, she classifies it as a seminal work of absence art nonetheless. I mention her terminology because she highlights a clear interdisciplinary connection between visual examples such as Robert Rauschenberg’s *White Paintings* and musical examples such as Abramović’s *The Artist is Present* or Cage’s *4’33”*.

Controversy is the bread and butter of absence art and there is also controversy in what should count as absence art. John Cage’s piece is famously cited as a piece of absence art, but a closer read of his explanation suggests that it’s more about what fills the gap, than about what’s gone. (Farrenikova, 2019, p. 257)

These inherently silent pieces are full of implied constraints and often far less silent than they initially seem. The composers frequently push the audience towards specific listening approaches. Each of these works has a very specific stance on silence, which (as with conceptual artworks in other disciplines) engages with the societal and the political.

3.2.1 The Benchmark for Silence—John Cage: *4’33”*

NOTATION: multiple versions over three decades: text only; proportional notation; “TACET”; and numerical (timed) versions.

MARKERS: many possibilities for audible, contextual, and visible markers

For an analysis of embodiment in performances of Cage’s work, see Chapter 4.

3.2.2 Conducting Silence—Anders Jallén: *Solokonsert för dirigent*

NOTATION: staves and barlines with logically notated rests, rests suggest specific embodiments

MARKERS: The performance consists of visually embodied markers, on top of the contextual markers of microphones, tuxedo, backdrop, baton, formality, etc.

► JALLEN EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916418?c=13>

I enjoy performing this humorous gestured performance for hands, arms, face, and body, including the baffling punchline of one sound. That sound is a sigh (“Aaaah”), five-sixths of the way through the piece, one that highlights the ongoing silence of the absent orchestra and the possibly frustrated condition of the solo conductor.



Figure 47: *Solokonsert*, first two lines (Jallén, 1979/ed. 2020)

While I am performing it, the audience seems to become the orchestra, uncertain or embarrassed that I am addressing them. Although I am facing them, I am, in fact, imagining an orchestra in my mind or reflecting (on that orchestra?).

Apparently, I am summoning silence; but not necessarily! Once, an audience member began to sing along, figuring that all these energetic cues were a call to action. I was astonished and delighted as this created a new line of thought—that the piece, intended for silence, might instead cause music to arise spontaneously. The audience member assumed they should be the musician and hence became one. My silence, illustrated by my embodiments, called forth sound. This was a wonderful moment, as the listener became the creator. Silence rarely summons sound so directly.

In his *Solokonsert*, Jallén echoes Schnebel's composition *Nostalgie* (1962) and multiple works of Mauricio Kagel. Jallén also foreshadows Tan Dun's *Circle with Four Trios, Conductor, and Audience* (1992), in which the leader conducts the musicians and audience in moments of silence. All of these works involve silent but highly embodied conducting. In these compositions, practicing the conducting means thinking like a choreographer. Without sounded notes, without musicians to respond, communication is entirely different. Time and gesture become the two most important ingredients for the interpreter. Craenen's evaluation of *Nostalgie* could apply equally well to *Solokonsert*:

Nostalgie presents a subject immersed in his or her own musical imagination. This allows an equally personal imaginary music to resound in the minds of each individual audience member. (Craenen, 2014, p. 50)

There is a paradox: the gestures are for sounds/counting, calling forth imaginary sounds in the mind of the audience, whereas the notation is for silence. The visually noisy but audibly silent embodiments should communicate to the audience potential soundings or, even better, potential silences. An unfollowed conductor or an orchestra-less conductor are both made silent.

3.2.3 Dadaist Silences—Erwin Schulhoff: *In futurum*

NOTATION: staves and barlines with many different rests

MARKERS: visible: potentially hyper-active gestures; notational: title and typography suggesting Dadaist embodiments; context: commentary on war

► SCHULHOFF EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916423?c=14>

Composed in 1919, the third *Pittoresk* by composer Erwin Schulhoff is dedicated to Georg Grosz, a key figure of Dada. This miniature is titled *In futurum* and consists of rests and text instructions. Musicologist Esteban Buch argues in his article “Seeing the Sound of Silence in the Great War” that, as in the Dada movement itself, the brutal legacy of war comes through in this artwork (Buch, 2018, p. 104).

As with George Antheil’s *Ballet mécanique*, *In futurum* overwhelms the pianist with rests, using dozens where one would suffice. Antheil’s use of rests is logical, if surprising. But Schulhoff’s deliberately florid, baroque notation produces a confused reaction in the performer, who has to struggle to express the rhythmic complexity—or choose not to.

Schulhoff’s piece arguably challenges the very notion of boundary. Rather, it is the negative of a non-silent piece of music, where time itself—historical and musical time—is pictured through its own negative, *Zeitmaß-Zeitlos*. In this sense, it is very much like a photographic negative. (Buch, 2018, p. 109)

Buch’s point is excellent: rather than being specifically about silence, the piece is the negative of a musical composition. Rests are substituted for notes, and smiley faces are substituted for rubato and other performative interpretations.

III. In futurum.

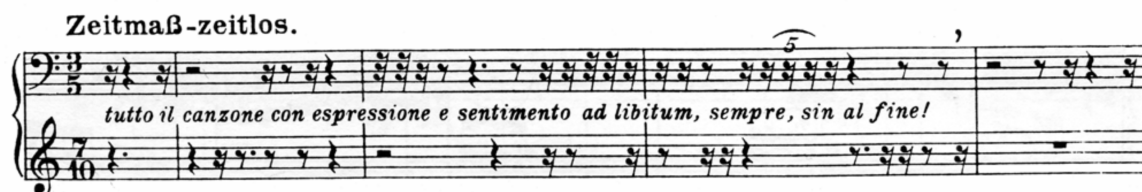


Figure 48: Erwin Schulhoff, *In futurum* (Verlag Jatho, 1932)

Schulhoff’s score is detailed—perhaps too detailed; it is fussy and confusing. Each rest is descriptive of a pulse or a beat, but attempting to interpret the rests “accurately” can slow down the performance, for example, at the end of the sixth line, where there are just too many brief rests in a row. But is accuracy even a goal to be achieved? Perhaps not. After all, the score is marked “timeless,” and the meter indication is 3/5 for the right hand and an equally absurd 7/10 for the left hand, even though most of the bars are really in 4/4.

Potential markers (a smiling silent performer? a frowning one?) are also created by the notation. Hence, I tend to give it a Dadaist theatrical flair in concert, complete with costume and exaggerated gestures. These markers become descriptive of the silences’ absurdity.

Part 3: Silent Discourse

Part 3 discusses silences that are concealed. Every musical work, no matter how abstract, contains subtexts, hidden histories, and stories of its origins and creator(s). Sometimes, they are expressed in musicological texts, program notes, or pre-concert lectures. Sometimes the audience is already aware of subtexts prior to the performance. Mostly the subtext served a silent function, communicating unspoken or unheard ideas from the composer to the performer. Subtexts could be as simple as the word “Andante” at the beginning of a Mozart sonata or as complex as the notebooks of Beethoven, which were not intended to be public but have become an essential component of the shared knowledge surrounding his artistic output. The silent subtexts in my examples are notated solely for the performer (and thus not for the audience) and are the inner voices of silent discourse. Dutch-Cypriot composer Yannis Kyriakides summarizes the inner voice as an ever-active part of the self:

[...] the less conspicuous inner voice [...] which varies a great deal from person to person, is the elusive inner voice of thought, that I call ‘silent discourse’; the voice that is in constant dialogue with different aspects of the self, ever active in the process of trying to comprehend and respond to situations on the conscious horizon. (Kyriakides, 2017, p. 38)

Silent discourse includes hidden lines, subtexts, invisible footnotes, and thoughts that liberate the performer to express more of what is being felt during a performance. Audibly or visually expressing these subtexts or sub-tunes during a performance might give rise to a multi-dimensional experience of un-silencing. Or it might ruin the composer’s intentions. The metaphorical silences in this part are often literally silent but not necessarily accompanied by acoustic silence. This means that a silent discourse may well occur during a section of musical notes. The inner voice is silent, but the audience cannot hear that it is silent; they can only know it if they are informed in advance.

3.3.1 Concealed Melody—Robert Schumann: *Humoreske*

NOTATION: an extra inner staff that resembles a vocal melody but is not meant to be played on the keyboard

MARKERS: notational: the score itself, aided by the explanatory text; contextual: historical including commentary by Clara Schumann

► SCHUMANN EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916426?c=16>

In *Humoreske* Opus 20 for piano (1839), Robert Schumann added a silent melody to be thought or silently hummed by the pianist. This line, whether the height of romanticism or subtly avant-garde, he labeled *Innere Stimme*:

This melody is intended to be sensed inwardly, ‘as one often does when one’s heart is full while playing,’ as Clara [Schumann] explained. The soprano line, or the ‘outer’

voice, traces out this inaudible inner voice, trailing behind it by just a fraction like a shadow missing its subject, an echo without a source. (Lin, 2020)

According to modern interpretive ideas, the performer is not supposed to perform (neither sing nor hum) but rather to internalize and imagine this inner voice. The modern audience is usually not even aware that the inner voice exists. It is a silent counterpoint to the piano parts, a kind of hauntology in which a ghostly voice from the past merges with the present.



Figure 49: excerpt from page 8 of *Humoreske* by Robert Schumann (Edition Peters, 2002)

The pianist must apparently know and feel the *Innere Stimme*, feeling it fundamentally below and within the played notes of the two outer staves. The same musical passage returns later, towards the end of the work, but *without* the inner voice, creating an “absence of absence,” according to music writer Douglas Murphy. He gives a related example from the 20th century: “It also occurs in jazz—Charlie Parker ‘weaving’ his way around a standard melody, suggesting it without ever playing it directly” (Murphy, 2008).

Just as jazz audiences today will recognize the hidden theme, audiences for Schumann’s performances would have been familiar (at least in his inner circle) with this phenomenon. Indeed, the inclusion of secret melodies was common, and their group of artists and musicians (including Johannes Brahms and Clara Schumann) often circulated themes and melodies in their correspondence (Berry, 2014). Thus, it is more than likely that Schumann’s audience would have been familiar with the hidden tune.

Perhaps it was even performed at the time. In these contrasting examples, Richter includes the hidden melody, while Horowitz does not.

AUDIO LINK: <https://www.researchcatalogue.net/view/1712958/2916426#tool-3046280>

Audio example: Sviatoslav Richter performing *Humoreske* (Sviatoslav Richter Edition, Vol. 3, Melodiya reissue, 2008)

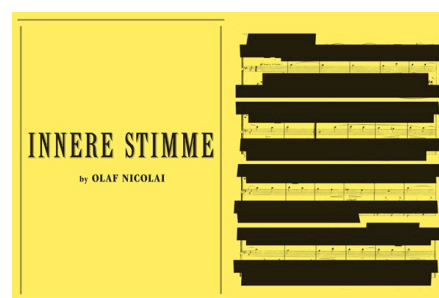


Figure 50: *Innere Stimme*, by Olaf Nicolai. Based on *Humoreske* by Robert Schumann (Roma Publications: 2010)

AUDIO LINK: <https://www.researchcatalogue.net/view/1712958/2916426#tool-3046287>

Audio example: Vladimir Horowitz performing *Humoreske* (live performance: Washington, April 22, 1979)

As a performer, every composition I learn acquires a dense layer of instructions, notes, references, cues, and memories, which coalesce over time into my artistic and embodied knowledge of the piece. When I perform the music, all these different layers run along in my head, like the parallel *pistes* running through a multi-track tape recorder. Even if the audience only hears the performance of the primary notes printed in the score, all of the other tracks continue in my mind. These ever-active voices are in constant dialogue, as the composer Yannis Kyriakides points out, interacting with the different aspects of the self that they represent (Kyriakides, 2017, p. 38). Yet, for all their activity, they are effectively silent tracks, unheard by the audience.

I have chosen to include this example because silence is implied through something else: the notation of a melodic line. But Schumann's parallel world could also be categorized as a meta-silence: the silence/silencing itself is not notated yet arises from the work. Working with the idea of meta-silence, the image shows a graphical response to Schumann's score by performance/sound artist Olaf Nicolai. He deliberately confuses eloquent silence and silencing as if Schumann's concept were about censorship. He has blacked out the performable score, leaving only the absent voice visible. The blackouts are definitely "not": any connective knots have been hidden by ink. Even the instructions are effaced.

3.3.2 Unsilenced Practicing—David Dramm: *Ruby*

NOTATION: Silence is partially notated but primarily arises from the sounds.

MARKERS: visible: metronome, composed gestures; audible: metronome

▶ DRAMM EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916439?c=17>

Ruby highlights silence by playing with a metronome, which is normally taboo on stage. Metronomes are intended only for practice. The audience never hears or sees a metronome.²⁸ It stays in the practice room. And a composition played with a metronome belongs in the practice room. It should thus be a composition without an audience. But that is not the composer's intention, for the notation makes clear that this is a piece meant to be seen as much as it is heard.

²⁸ Mauricio Kagel's *MM51* (1976) is also scored for piano and metronome. Other works which use metronomes are György Ligeti's *Poème symphonique* (1962) and Ned McGowan's *Sydney Polypulse* (2019).

Duration: 59.28"

For Guy Livingston

Ruby

David Dramm
2008

Set @ 250
D hold w/LH
move up w/RH

HOLD METRONOME W/LH IN FRONT OF YOU, GRADUALLY OUTSTRETCHING ARM SO THAT METRONOME IS FACING AUDIENCE.

X = MUTE METRONOME SPEAKER WITH FIRST 2 OR 3 FINGERS

*TO SILENTLY SET METRONOME AT CORRECT TEMPO, USE 'LAMP' BEFORE SWITCHING TO 'BEAT.'

Digital Metronome

Piano

Figure 51: the first line of David Dramm's *Ruby* (Dramm, 2008)

At first, the metronome hardly seems a marker for silence, but gradually, its audible presence emphasizes the silences in the piano score. And its visible presence, too. Embodiment is of supreme importance in this performance (and is notated). Dramm specifies how and where the pianist's arm should be held (raised, in front, "gradually outstretching arm so that metronome is facing audience") and that the metronome (called a *Ruby*) should descend gradually during the diminuendo at the end. In the performance, I add gestural swoops with my left hand to emphasize the rhythmic syncopations, thus generating additional markers that suggest the connectivity of the silences.

3.3.3 Introspection—Louis Andriessen: *Not [an] Anfang*

NOTATION: non-notated silences based on the composer's explanation

MARKERS: audible: humming as a marker for silence or silencing; contextual: composer's explanation

► ANDRIESSEN EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916443?c=18>

Composer Louis Andriessen wrote this piece for me during intermission at a concert in 1997. Could this be an illustration of what a composer hears during the compositional process? The fact that the piece was written on a program with no forethought is also a reminder of the constant music that runs through the minds of most musicians, especially composers. This sort of instant composition, written as fast as Andriessen could notate it and fitting into the limited space of a program booklet, is like a Polaroid photo of the moment: the composer's non-stop inner voice is briefly frozen in time.

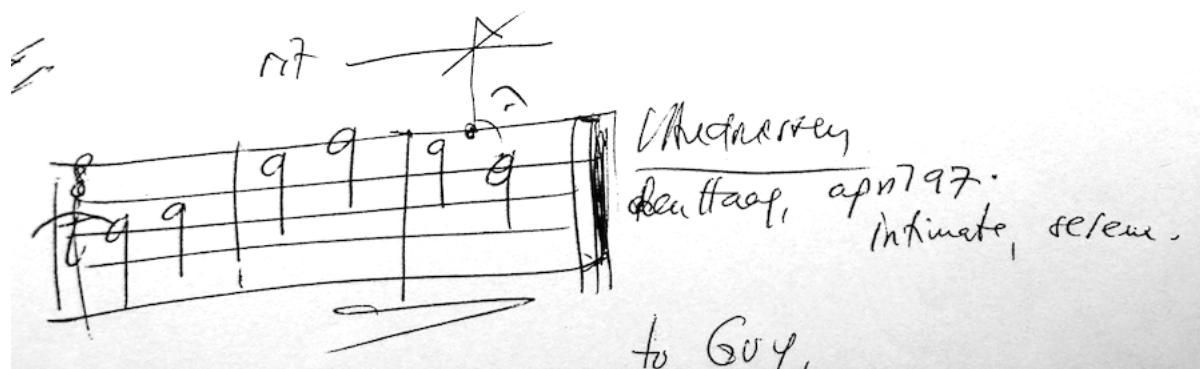


Figure 52: last line of *Not [an] Anfang* by Louis Andriessen (Andriessen, 1997)

The dimensions of this silence are intimate, serene, and poignant; the marker for silence is less obvious but might consist of the humming itself that precedes the end. The connections between the piano phrases are performed silence, made nostalgic, bittersweet, and even tragic by the cessation of the humming. These are knots of silence, holding the simple tune together.

3.3.4 Dadaist Voices—Erik Satie: *Avant-dernières pensées*

NOTATION: “secret” text messages in the printed score

MARKERS: notational: The performer must choose whether to make the written text audible. The audience might not know of the silences nor of any potential markers.

► SATIE EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916446?c=19>

French composer Erik Satie was fond of leaving secret messages in his scores: written instructions or sketches indicating feelings, emotions, or sometimes complete nonsense.

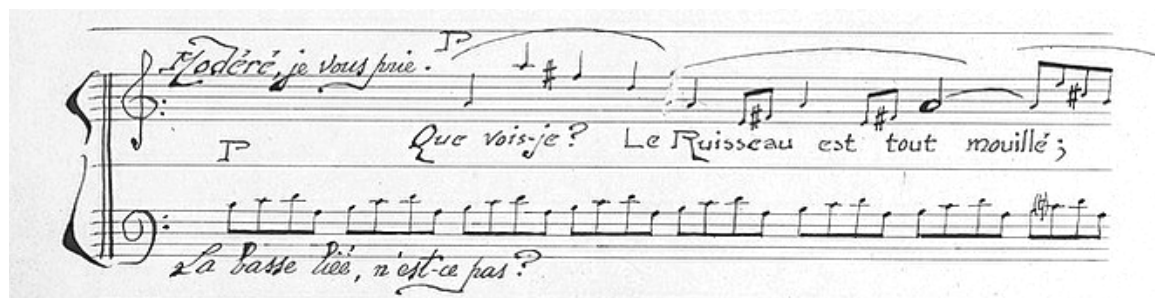


Figure 53: Erik Satie: *Avant-Dernières Pensées*, first line with sarcastic Dadaist text (“Moderately, I pray you,” “What do I see?”, “The bass is legato, isn’t it?”, “The stream is all wet”) (Satie, 1915) (<https://gallica.bnf.fr/ark:/12148/btv1b52500023h/f8.item>)

Musicologist Ornella Volta (Satie & Volta, 1989) maintains that these aphoristic memos were not intended to be performed, yet they are very much notes to the performer, and Satie might have intended them to merit extra attention, even if the texts were not directly read during the

performance. He deliberately fomented silent thoughts—a piece of mental music to be “interpreted” parallel to the notes written on the page.

Here, Satie writes, “*la basse liée, n’est-ce pas ?*” (“The bass is legato, isn’t it?”), thus suggesting a direct and intimate connection between the composer and performer. The pianist implicitly (though silently) might reply, “Of course it is.” Whether or not the audience knows this is happening, it creates an interrelationship, a different kind of knot that binds composer and performer in a secret.

Part 4: Silences that Arise from the Work or Context (Meta-Silences)

Silences that arise from the work are not notated. This section offers examples of silences that are induced in the audience via the notes, the repetition, and the flow of the composition. These silences do not arise from notated rests, and the composition is not necessarily composed of silences. Sometimes, the performance itself or the context can summon silence.

In Chapter 1, I suggested the term meta-silences to describe non-notated audience silences that usually arise from ritual or behavioral norms. These might be the audience’s respectful silence before, during, and after a performance (the silence of decorum); or the awed silence after a particularly moving concert; or the silence which is engendered by intensely spiritual music; or the calm that comes from meditative music; or the inner peace which can arise from parameter-based (minimalist) music. These silences have a ritual, societal, or contextual origin. Costumes, lighting, and décor might play a role too. So does the behavior of an audience as a group. Often, the markers are visible, as in the high vaulting of a cathedral or the shadowy layers of wood inside a Japanese temple.

3.4.1 Foreground and Background—Arvo Pärt and Renaissance Vocal Music

NOTATION: notes and commas, but not necessarily rests

MARKERS: contextual: ritual and architecture might create the markers for silence; audible: slow tempo, repetition

▶ PSALOM AUDIO RECORDING: <https://www.researchcatalogue.net/editor?research=1712958&weave=2916472>

This example is from *Psalom* for four saxophones by Estonian composer Arvo Pärt. Noted Pärt interpreter Paul Hillier comments:

So many of his works incorporate such frequent and sometimes extensive silences that they become thematic in effect and must be ‘played.’ (Hillier, 1997, p. 199)

By “played,” I think that Hillier means that the silences are not there to be counted, but rather to be felt, stretched, and interpreted by the performers. The silences in Pärt are precisely notated, but in reality, they are played as highly malleable. They are both elastic and tangible.

Giving an insight into singing both the music of Pärt and the vocal music that inspired him, American musicologist and singer Laura Prichard writes:

One of the strange things about singing Renaissance music for me has always been holding your own ‘part’ and counting the rests before you come in with your own voice part. You would think that your head would be full of ‘sound’ during that time—but if there is no written cue, I have always felt a strong sense of ‘silence’ due to my own part being a rest—and not so much a sense of listening to the other performers until I can start to make sound myself. (L. Prichard, 2021, private correspondence)

Prichard’s silence is an invisible, unshareable, perhaps *alone* silence—the silence within a piece of music that is being performed around you and within which you sometimes have your own voice and sometimes not. A similar experience was already described in the late medieval period by music theorist Franco Colonis:

[...] Colonis links the role of silence to the listener-performer: namely, the observation of ‘*vox amissa*’. When a certain voice is silent (*vox amissa*), the singer is to listen to the sounding voices (*vox prolata*). Silence here is an active mode of listening, not merely a kind of passive emptiness. (Hodkinson, 2007, p. 28)

In our era, the music of Pärt induces us to listen to the *vox prolata*, the sounding voices, much in the same way Pérotin did 800 years earlier in the Cathedral of Notre Dame de Paris. But in recordings of either composer’s work, these particular silences lose substantial impact—the listener should be in the space with the performers. And not just any space: a particular reverberant space, which will let one experience the silence more intensely. This may be ironic because that same reverberation prevents the notes from fading away; their persistence after the musicians stop singing is what draws us into the spiritual experience of silence.

The use of silence in Pärt’s music has been commented upon often enough, generally as contributing to a perception of the music’s spiritual nature. (Hillier, 1997, p. 199)

Indeed, silences contribute to the music’s spiritual nature—as do Pärt’s compositional elements of repetition, slowness, simple percussion, clear vibrato-less singing, and much space between the notes.

In *Thresholds*, music philosopher Marcel Cobussen suggests that Pärt’s music gives *occasion* for silence to occur (Cobussen, 2008, p. 117), a very different experience than the perspective Cage gives us of presenting the sound(s) of silence. Evidence for this suggestion might come from the choice of venue. In Cage’s sound world, a performance of *4’33”* can happen anywhere; but in Pärt’s world, a venue with resonance is essential. For its experience of silence, his music relies on architecture—enormous rooms and stone cathedrals. In a dull and non-resonant

room, his silences will sound empty. Hence, in my terminology, Pärt's silences are often architectural silences (see Chapter 2). The situatedness of the architectural venue gives it power, echo, and resonance. The architecture becomes a major influence in the resulting performance, reflecting the sound back to musicians and listeners.

I am not arguing that silence *per se* does not exist in Pärt's music. Rather, I am arguing that there are two major kinds of silence in his music, both of which contain a fair amount of sound:

- Firstly, the non-notated and intangible silence behind the music, which is a spiritual or mystical experience amplified by the ritual and architectural context;
- Secondly, the notated and very tangible resonant silence developed through the long rests, which relies on the architecture for its impact. Due to the extended resonance of the space, this performed silence is usually audible as reverberation, hence also non-silence.

As Cobussen remarks, the most intriguing and powerful silences around Pärt's music are not the notated rests nor their interpretation. The most powerful silences are those to which the music gives affordance: a spiritual silence beyond the sensual.

Pärt's carefully constructed music is searching for silence, searching for that which is beyond the sensual. His music is orbiting around silence, around an empty place, circling around 'something' that it can never reach or achieve and what music itself is not. (Cobussen, 2008, p. 117)

The music of Pärt and other composers often inspires a spiritual stillness. Whether the silence appears to be behind the music or the music behind the silence, the result is similar: an experience of stillness, a surrender to the music and the silence before and behind it. The music *gives us silence* so that we may *live* the silence through the sounds. "Mastery and expertise play their part, but also of utmost importance is a moment of surrender that cannot be planned" (Cobussen, 2008, p. 121).

3.4.2 Post-performance Silences—Bruckner/Mahler/Cathedral of Notre Dame de Paris

NOTATION: none

MARKERS: contextual, behavioral, audible, architectural: These meta-silences are marked by the audience's collective or ritual behavior; the last notes are almost inaudible; the conductor keeps his arms raised as an embodied marker for silence; the players hold instruments in position; the concert hall hides the sounds of the outside world; and the audience plays a role by sitting in silence; the acoustics resonate.

The architecture surrounding a performance can generate many striking effects, especially where it affords the possibility for post-performance silences. Here is a story told by Sean Street, Professor Emeritus of Radio at Bournemouth University, in which he recalls his most powerful memory of silence ([listen to the original story](#)).

PERSONAL STORY

In May 1967, I went to a concert at Notre Dame de Paris: in the last moments of the Bruckner *Te Deum*, the sound blazes out. And the building was an instrument: the building was joining in. And you only realized that when the music stopped. At the end, there seemed to be this huge reverberation that seemed to go on and on and on [...]. I remember us all sitting there before the applause. Everybody just sat stunned, listening to this sound fading into silence and the building, and out into the nooks and crannies far up above us, and far beyond us into the dark shadows we couldn't see; the sound still filtering through—like mercury, like water.

And eventually, silence came, and we waited, and then... we didn't want to break that silence, but we did, with applause, because it was sensational. And I wondered for years, "Was that as long as it was?"

The next time I really thought about it was the night Notre Dame burned. [...] I just thought back to that moment, and I thought of that acoustic that I could see being destroyed in front of me.

And on a whim I went online and looked on eBay and looked to see if I could get a recording of that night—did it exist? Yes! So I sat and timed the reverberation as it is on this record, which is probably not a true representation, not perhaps as strong as it would've been in the building itself. And it's between four and five seconds. And then the silence. But it's enough to remind me of that building contributing to the piece and the silence after it. (Street, in Livingston, 2017)

Intrigued, I bought the record in a second-hand shop, but as a result of the era and the difficulty of recording live in a cathedral, the audio is hissy and blurred. The reverberation time is nonetheless immense. Meanwhile, the flawed, noisy audio overlaps with my own recollections of taping in that space, truly a recording engineer's nightmare.

► AUDIO DISCUSSION: ABC engineer Russell Stapleton describes recording inside the Cathedral of Notre Dame (Stapleton, in Livingston, 2017): <https://www.researchcatalogue.net/view/1712958/2916475#tool-2927788>

The silence inside a great building after a performance is intensely physical. Is it the sense of awe at music that moves us to create silence ourselves? Note that the audience was collectively unwilling to break the silence. There is a notable shift in attention as the music fades away to ethereal silence. That shift in attention is key to observing silence—the participants (audience and performers) suddenly become aware of the room after the last note. Space and the memory of music are fused into one sensorial experience.

Silence brackets the ending of Bruckner's *Te Deum*, as performed in the cathedral. The building is a container for certain silences, and most importantly, the architectural acoustic creates a build-up to the experience of silence just after the final "blazing" chords. Here there is no gesture, no performative silence, but framing is present and tangible. The silence is the end-frame (the right bookend) for the music; but the silence itself is also framed by the architecture, by the situation, and by the sounds around it (music before; applause after).

The audience is bodily affected by the framing of the music. Also, the audience is bodily affecting the silence. With a thousand people in the congregation, the reverberant energy is dampened. Hence, the silence experience is affected on multiple levels: by the music that preceded it; by the architecture that surrounds it; and by the physicality of the audience that listens to it. The markers are environmental, architectural, acoustic, social, and audible.

But this example does not have to be inside Notre Dame, and it does not have to be composed by Bruckner. The same post-performance effect, heightened by romantic symphonic music, can be experienced in many large halls with long reverberation times.

[...] conductors' and musicians' gestures are used to enhance the musical effect at the end of the work, often by exaggerating actual gestures needed to execute the final passage. In fact, in the case of the decrescendo, the conductor and the players may actually continue their motions (without producing sounds) to give the illusion of sounds continuing past where we can hear them. (Judkins, 1997, p. 46)

The post-performance silence is not notated. It is a meta-silence in the sense that it may be anticipated, but not predicted. The musicians may work towards this effect by creating illusions of sound past the point at which the audience can hear them. The conductor may hold his arms or baton outstretched to draw out the moment theatrically. Importantly for this type of silence, the audience itself is also participating, working at non-clapping, being silent in order to feel the silence. This group silence is experienced collectively by both the musicians and the audience.

A gigantic work on symphonic scale can lead to awesome silence. Here is an example from a review of Mahler's *Ninth Symphony* as performed in Lucerne:

As the violins began the slow winding-down and decomposition of the final pages, the texture thinned to a spectral web. Several times, the music seemed almost to stutter to an exhausted halt. At last, the strings whispered the final phrase, almost inaudibly. And nothing happened. Abbado kept his arms raised, the players held their instruments in position. I almost forgot to breathe. Then, slowly, he lowered his hands and the musicians put down their instruments. And still nothing happened. The rapt audience sat in silence, unwilling to break the mood, for maybe two minutes—an eternity in the concert hall. At last the applause started and went

on even longer than the silence. It was an extraordinary end to an extraordinary concert. (Gent, 2010)

The reviewer lists a host of visible and audible markers that summon the meta-silence: the last notes are almost inaudible; the conductor keeps his arms raised as a marker for silence; the players hold their instruments in position, still performing, yet no longer the notated score; the concert hall hides the sounds of the outside world; and the audience plays a role as well, by sitting in rapt silence. This suspension seems as if the group's collective will (musicians, conductor, audience) *holds* time in their embodiment of silence; holding time fast so that it stops.

3.4.3 Silence as Holding Space—AMM: Final Performance

NOTATION: none: improvised

MARKERS: architectural and contextual, including hall, audience, history; behavioral: audience

Although improvisational performance is mostly not within the purview of my research, I did have a discussion with composer and improviser Richard Barrett, who referred me to this review. This text describes the final performance in London of the legendary AMM ensemble. Particularly interesting is the description of the closing silence as a “holding space” that marks a journey to a bright nowhere.

The last music AMM made together was silence. After an hour or so, Rowe having fallen quiet a minute or so before, Prévost, too, came to a pause, and they both sat poised, the music, the musicians, and the audience alike all deciding whether or not it should continue, before the applause broke in. Heavily inflected by the framing, the history, the circumstances and the occasion of the concert, that silence was not just about absence or farewell. [...] AMM is made up, not only of the music and those who play it, but also the space in which they make it, space which includes everyone else in that room. And in that closing silence, it felt as if AMM was opening up not only to everyone in the room, but to all the listeners and players not in the room, living and dead. [...] This ending was not just an ending, but a holding space, in Prévost's words, ‘marking a journey to a bright nowhere,’ sometimes brighter and sometimes dimmer, but visible on the horizon still. (Grundy, 2022)

Note the inclusion of the audience as part of the room's soundscape. The embodiment of silence at the end of the AMM concert highlights how sound, space, and bodily experiences are deeply interconnected. Both the physical and architectural dimensions of silence play a role in musical expression and experience. The silence here serves multiple framing functions: bringing a historical era to a close, finishing the concert, and paying tribute to the non-present players in the room. And these functions are valid for both the performers and the audience, who together share that final silence.

3.4.4 Silence and Flow—John Adams: *China Gates*

NOTATION: notes (no rests)

MARKERS: potentially institutional, contextual, and behavioral markers

► EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916483?c=29>

China Gates by John Adams is a piece that lives permanently in a static now-ness, with almost no beginning or end. There are no rests in this piece. It would be absurd to suggest that it includes quantifiable silence. Although sometimes the left hand has a short break from playing, that is only in order to be able to jump to another location on the keyboard. The right hand does not have one single rest in the entire piece.

One could speak of the silence behind the music in a piece like this, or one could also speak of inner silence.

The sound of music is not [...] opposed, but rather parallel to silence. It is as though the sounds of music were being driven over the surface of silence. Music is silence, which in dreaming begins to sound. (Picard, 1952, p. 27)

What Swiss writer and philosopher Max Picard seems to be suggesting is that silence is a surface that gives rise to music as time moves across it. The music floats above the silence, pushed along by time. Flow, or inner peace, is extremely useful if the performer can use it to enable the rhythms. If, as the pianist, you can let your hands feel the rhythms, as one hand moves in fives and the other in sevens, and as long as you do not overthink it, then muscle memory will take over. This can lead to a form of inner peace for both performer and listener, a peace that is often associated with silence.

3.4.5 Endings—Eric de Clercq: *24 means to an end*

NOTATION: rests copied from Chopin

MARKERS: visual: dramatic gestures, endings in a romantic pianistic style; contextual: music decontextualized

► EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916487?c=30>

These 24 consecutive endings are sourced from the collection of the 24 Nocturnes by Chopin. But Chopin's intensely romantic notes lose their meaning due to this recontextualization. Made from endings, the artwork should have a sense of finality, but it never does. Twenty-four endings after each other *are not* a means to an end. Rather, the result seems unfinished.

There are lots of rests in the score, mostly after the endings, but not always. These rests can be performed with exaggerated gestures as if each one were a *finale*. But that does not work well performatively. In my experience, the composition seems to function better if the performer tries to play the excerpts together, not separately. Should the last ending be much more radical, gestural, and theatrical? Or should they all be the same? The artwork might best keep going in a circle like Satie's *Vexations*—it would never have to end.

3.4.6 The Space Between—Alan Frederick Shockley: *Cold Springs Branch, 10 p.m.*

NOTATION: classical notes, without rests

MARKERS: The bell note itself is an audible marker.

► SHOCKLEY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916491?c=31>

The piano bell effect that I perform in Alan Frederick Shockley’s composition is similar in function and mood to the real bell used in Pärt’s *Cantus in memoriam Benjamin Britten*.

► PÄRT AUDIO EXCERPT: <https://www.researchcatalogue.net/view/1712958/2916491#tool-2928758>

As with the piano piece by Shockley, the interest of the bell in Pärt’s *Cantus* lies not only in its sound but in the space between the sounds. These bells are markers for the silence behind, and the silences are markers for the bells. This is an example of using sounds to “play” silence, thus engendering intensely connective and strongly knotted silences.

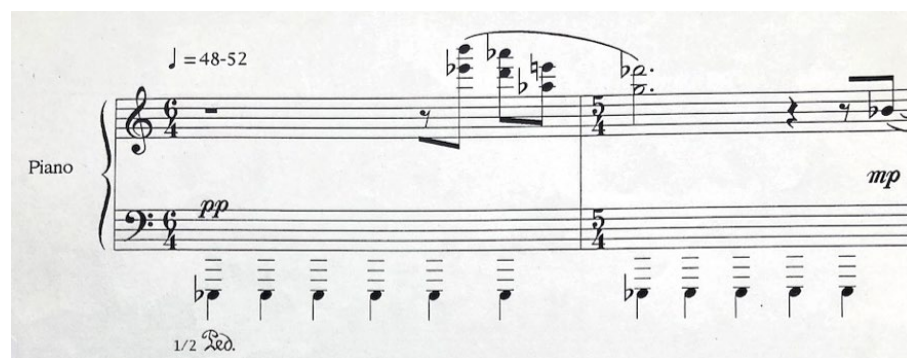


Figure 54: opening bars of *Cold Springs Branch, 10 p.m.* (Shockley, 1999)

Part 5: Silencings

When the performer is silenced, that silence appears at the interstices of *silencing* and *silence*. This can happen in many situations. Sometimes, a performer can be silenced by losing agency or creative control. Douglas Kahn has argued that John Cage’s *4’33”* aggressively silences the performer. Sometimes, a performer can be silenced by the complex demands of the score (by losing virtuosity or ability), as in the examples of Newt Hinton or Dmitri Kourliandski presented here. Or the performer can be silenced by larger societal forces: racism, cancellation, or censorship. Shostakovich’s creative brilliance was silenced by Stalin in 1936 after the premiere of *Lady Macbeth of Mtsensk* (Fitzpatrick, 1992, p. 188). Paul Robeson’s touring career as a singer was silenced by the US State Department due to his race and his communist sympathies (Slate, 2014, p. 86).

A comprehensive coverage of silencing in all its musical forms is impossible here because of the enormity of the topic. This section gives a few representative examples of artworks about silencing from my practice. There are also other situations in which I have been silenced by not being allowed to perform (someone else was chosen, a festival was canceled, money was

withdrawn). Of course, there is a considerable distinction between the social or political silencing of artists versus creating performances about the topic of silencing as a free artist.

3.5.1 Silenced by the Audience—Tom Johnson: *Lecture with Repetition*

NOTATION: Simple text instructions create a socially complex interaction.

MARKERS: contextual, behavioral, ritual: The audience yells out instructional commands to the performers.

- ▶ EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916504#tool-2926336>
- ▶ PERFORMANCE VIDEO: <https://www.researchcatalogue.net/view/1712958/2916504#tool-2926342>

Experimental composer Tom Johnson's work is influenced by the Dadaists and the French Situationists. During the spoken-word performance of *Lecture with Repetition*, which must be read from a script, the audience can yell "More!" to have performers continue or "Enough!" to make the performers stop the phrase they are performing and skip to the next sentence. This piece's unusual means of control (commands from the audience) serves to disrupt the performer—a micro-political silencing in which the audience temporarily takes control of the performer's actions.

Sometimes, many people are calling out simultaneously, with conflicting instructions: "More!", "More!!", "Enough!!!". The performer must make a rapid choice of which audience instructions to follow, resulting in a sensation (for the performer) of temporarily regaining control. But this sense of surety is invariably upset during the next sentence by more "More!"s and further "Enough!"s. The performance becomes increasingly unstable as the audience gains control.

3.5.2 Silencing of Black Voices—Pamela Z: *Notice of Baggage Inspection*

NOTATION: graphic and standard notation, plus composer's explanatory note

MARKERS: audible: soundtrack, voiceover; contextual: racism

- ▶ EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916507#tool-2926351>
- ▶ VIDEO INTERPRETATION: <https://www.researchcatalogue.net/view/1712958/2916507#tool-2926352>
- ▶ Z AUDIO PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2916507#tool-2927250>

California composer Pamela Z has experimented in opera and electronics with documenting the silencing of Black voices, especially her own. She wrote me a piano-vocal composition entitled *Notice of Baggage Inspection* (2009) about the censorship/surveillance she is subjected to while traveling.

In this audio sample, one hears the text from a Transportation and Security Administration (TSA) warning, which she repeatedly found placed in her suitcase on arrival. The TSA is the notoriously suspicious agency that scans baggage in American airports. Her baggage was always searched. Thus, a printed card with this text stared out of her luggage every time she arrived in a new place.

The performance encompasses different aspects of silence. The story begins with silencing due to racism. This was enacted by the TSA and marked by the inspection card in her luggage. In turn, this is enacted by the pianist simultaneous with a soundtrack recorded by the composer. Z has used the TSA text (which she has read in her voice, thus un-silencing herself) to illustrate her story of silencing. The silencing is not notated (a meta-silence), although there is a text that narrates it and a card that marks it.

Z's second approach to silence is an acoustic one. Eloquent silence, marked by audible rests and dramatic pauses, plays an important rhetorical role in the composition, emphasizing the bureaucracy and Kafkaesque arbitrariness of the TSA's inspection cards.

3.5.3 Unsilenced Melody—T.J. Anderson: *Watermelon Revisited*

NOTATION: *standard notation*

MARKERS: *history, context, memory*

- ▶ ANDERSON EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916510#tool-2926358>
- ▶ ANDERSON AUDIO PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2916510#tool-2926362>

T.J. Anderson's *Watermelon Revisited* is a piano piece written for me, based on a longer work by the composer. In this composition about historical-cultural silencing, the title and the music evoke racism in Washington, DC. The melody, only faintly suggested in this miniature, comes from a song that watermelon vendors (who were primarily Black) would sing as they wandered the streets of the South, selling their wares in the hot summer days a century ago.

- ▶ STREET VENDOR SONG: <https://www.researchcatalogue.net/view/1712958/2916510#tool-2927269>

Due to the association with Black vendors, “watermelon” later became a derogatory and racist term for Blacks. Anderson addresses this directly in his music, quoting part of an original street melody, but only the ending, as if it were an echo. The fragmented song, arising from the abstract dissonance of the first page and its mix of nostalgia and distress, are elements that Anderson uses to evoke silencing.

3.5.4 Silenced by the Instrument—Dmitri Kourliandski: *Surface*

NOTATION: *graphic notation and composer's explanatory text*

MARKERS: *simultaneously visible and audible: hands, arms, and physical (un)successful efforts of the performer*

- ▶ KOURLIANDSKI EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916513#tool-2926368>
- ▶ KOURLIANDSKI ANIMATION: <https://www.researchcatalogue.net/view/1712958/2916513#tool-2926372>

Russian composer Dmitri Kourliandski's *Surface* is a graphic notation work on two pages, lasting sixty seconds in total. The performer may choose four areas of the piano case (the wooden cabinet) and then stroked with their fingertips to generate a high-pitched rubbing sound. There is an element of failure built-in to the piece, because it is very difficult to coax these sounds out of the piano case, and most of the strokes will be thus silent.

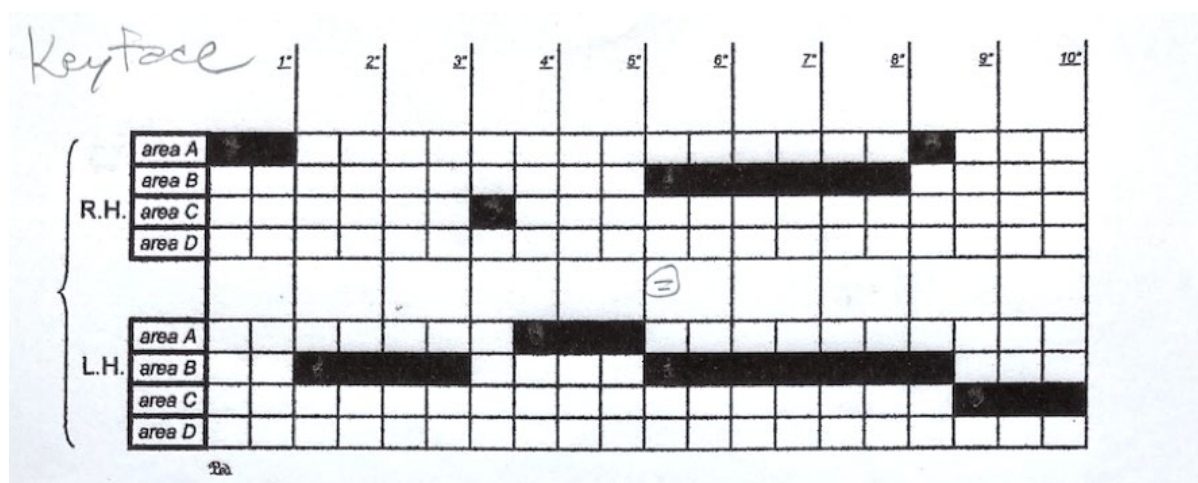


Figure 55: the first line of *Surface* (Kourliandski, 2009)

Attaining the stable result that Kourliandski hopes for is quite possible after an hour in the practice room, but difficult onstage with an unknown instrument. Hence, the work offers an affordance for silence to occur, independent of the performer's will. Kourliandski is aware of the complexity of producing sound from the surface, but he also relishes the unusual technique that will potentially create excitement (squeaking or silence) onstage. It is a highly gestural piece. Because the filled squares represent gestures (not notes and not sounds) every black square on the page is embodied by the performer's back, arms, hands, and fingertips. However, speaking of markers *per se* is difficult because the performer cannot predict which gestures will result in silence and which will result in squeaks.

The knot/not model works perfectly to describe these silences. They are disconnective "nots." When a silence happens, it is because a sound is *not* happening. There is no connection, no knot, made between sounds or silences. The disconnections are attempted connections, a push-pull between gestural skill and embodied luck.

3.5.5 Silenced through Restraint—Newt Hinton: *Piece of Cake*

NOTATION: written instructions are added to Chopin's 24th piano étude.

MARKERS: visible, symbolic: handcuffs as markers for silencing; audible: wrong notes mark the unplayable place of the original notation

► HINTON EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2916516#tool-2926378>

This re-composition of Chopin's famous piano étude (opus 25, number 12) raises intriguing questions about virtuosity and the transparency of the performance. The silence is intrinsic to the composition, but the silencing makes it noisy too. I am deliberately taking a broad view of the concept of silence. Indeed in this example, I am stretching the concept of silence, but perhaps there is no border, perhaps it can always be stretched further. The silencing of the

performer makes the performance louder since the struggle to play as many correct notes as possible—without sacrificing speed—leads to a clumsy and awkward performance. The metal handcuffs are to be calibrated in such a way that the performer can only reach a 9th, rather than the customary 10th that separates the left and right arpeggi throughout most of Chopin's composition. The performer becomes extremely present. The attempt to preserve virtuosity in the classical sense should make the performer transparent when playing Chopin. Hinton's version is the opposite. The illusion of effortlessness is lost due to the handcuffs. The audience recognizes the original Chopin and expects it to sound impeccable. This silencing is thus metaphorical: silence is not audible, but the performer's skills are silenced.



Figure 56: the author performing *Piece of Cake* (Hinton, 1997)

3.5.6 Failure—Audience Refusing to Applaud

NOTATION: none

MARKERS: behavioral: meta-silence as a construct exterior to the artwork; audible: traditional performer silence before concert

The accustomed silence on the part of the audience during a classical concert (the silence of decorum) is usually encouraged, but if it is extended too far, it can be an awful experience. During a Dada-themed concert I gave in Germany in 2015, the audience did not understand what I was doing onstage, and they made it tangible by doing nothing—no applause, no noises, no cheers, no sighs, no laughter. After each composition on the program, there was silence. It was a physical, palpable, heavy silence. Yet (and this was strange to me) they did not leave the concert hall. So they had their own behavioral code: on the one hand, no applause (to indicate their disapproval), but on the other hand, no departures, no noise (to indicate their respect (either for me or—more likely—for the concertgoing ritual)). I interpreted the silence as a failure on my part to engage with the audience. The performance was of Dada artworks, themselves obscure and potentially confusing. In retrospect, I feel that their silence marked my own failure to communicate effectively.

From that moment on, I added a new element to the show, a prelude in which I would walk through the audience engaging with individual concert-goers and inviting them into the bizarre comedy of Dadaism. Traditionally the classical performer is silent and invisible before the show. Instead, I made my voice heard and also gave the audience a voice as I wandered amongst the seats, “selling” paper ice-creams and useless Dada souvenirs.



Figure 57: As a response to the silent German audience and as a way of un-silencing myself pre-performance, I began interacting with audience members before each show, selling useless Dada treats and souvenirs. This was also a way to un-silence the audience, giving them also more voice, and more agency in the performance.

Chapter 4. Case Study: Audible Markers for Silences (John Cage's 4'33")

In this chapter, I will compare performances of John Cage's 4'33" found online, ranging from a professional film by Cage specialist David Tudor to quirky experiments by amateurs. I will present alternative ways of marking silence; new attitudes for silence; confluences of time, listening, and silence; and contemporary relationships between performer and audience. My observations have also affected my performance practice, as illustrated by checklists I created several decades ago, and a newly updated list that might encourage the openness Cage championed but also afford new interpretations he would never have imagined.

4'33" is not silent (see Chapter 1); neither does it consist of silence. Cage often said it was about listening but also about what he called "interpenetrability," the way art and real life intertwine (Cage, 1961, p. 102). So, this composition is less about silence than about listening to the sounds that are already there. Yet, it is a compelling example for exploring silence because of the challenge it seems to represent for many younger musicians and the overlaps it affords between the Western Classical tradition and popular modes of performing.

Just as Cage was influenced by diverse and non-musical sources from Zen to Thoreau (Gann, 2011; Silverman, 2010), so did his creation of 4'33" have effects far beyond the world of classical music. It gained instant status as a seminal artwork of the 20th century, an iconic masterpiece of conceptual art (Adolphs & Berg, 2021; Gann, 2013). But 4'33" eventually also came to be seen as a work of kitsch, a faulty paradox, and a symbolic failure of the avant-garde (Kahn, 2015, pp. 165–166). Indeed,

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 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.

Kahn argued that Cage achieved an almost deliberate silencing of the performer and the audience.

Yet in the past decade, the work has gained new life: teenagers, pranksters, heavy-metal bands, architects, and queer activists have embraced it on social media, each finding their group or cultural meaning. And worldwide lockdowns brought a new wave of video interpretations, a rich source in my research. Some aspects of these videos are distinctly classical, employing framing and conventional instruments; other elements are uniquely contemporary. By looking critically at the videos, I discovered a multiplicity of gestures for performative silence. To create the experience of silence on YouTube, performers often embody that silence in novel attitudes.

Some of the videos deliberately engage with the interpenetrability of the artwork and the “real life” happening around the performers. Others focus more on performativity, on the persona of the performer, or on a connection with the unseen viewer. Listening, temporality, gesture, silence, and “real life” are foregrounded in different ways in each example. Some of the performers turn their attention to listening, and others encourage the audience to listen. Some ignore listening and turn their attention instead towards stillness, quiet, duration, time, or the tension between noise and silence, framed and unframed, classical and rock, controlled and uncontrolled.

Even though 4'33" is often considered a work of absence art, not every example involves absence. Walsh writes: “Generally speaking, absence can be registered only when the expectation of something is thwarted or deferred” (Walsh, 1992, p. 80). I find that the most successful examples I will reflect upon below generate a strong expectation (via markers for tradition, loudness or extremes of some sort) and then an equally strong thwarting or deferment (created by non-doing, non-playing, being-silent, attentiveness, or boredom).

In Chapter 2, I made a clear distinction between the experience of the performer and the listener. In this fourth chapter, three main viewpoints are present: my personal perspective as a performer (e.g. an evolving “checklist”), a listening perspective (e.g. waveform analyses), and my perspective as an observer of the YouTube videos. My analysis will mostly neglect audience reactions, except insofar as they obviously influence the performance (talking, noise, laughter, interruptions).²⁹

²⁹ For discussions of audience reactions to Cage's work, see my paper “The Audience Grows Restless,” as well as work by several colleagues at the Université de Lorraine who discuss audience roles in performances of 4'33" (Livingston *et al.*, 2025). I have also experimented artistically with online audience reactions by making a [video essay](#) that overlays YouTube audience commentary onto a performance of 4'33".

4.1 The Checklist

In the 1990s, I performed throughout Europe as a concert pianist. A staple of my programs was 4'33". But I found it disturbing that so often it seemed to go "wrong." For example, during a performance in Paris in 1995, I played *Images* of Debussy, and then, in a spirit of contrast, Cage's 4'33". Someone in the front row began laughing after a few minutes and started to make loud comments to his neighbors in the audience. As I sat there, grimly tracking the stopwatch, my body frozen in place, I became more and more angry at his interference. But I felt that the duration was sacred, and to end the piece early—or worse, to scold him in front of the audience—was out of the question. So I stayed frozen for those endless last few seconds and finally switched off the stopwatch at 4:33. As I did so, I leapt from the bench and rushed at the man as if I were about to jump off the stage. To my gratification, he looked terrified and was quiet for the remainder of the performance. But I felt terrible; I had done something that went against Cage's non-violent philosophy. I did not want to punish the audience for their behavior.

After much reflection and spurred on by this incident, I came up with a checklist for "authentic" performances of 4'33".³⁰

A Performance Checklist (1997)

- How to begin the piece:
 1. wait for silence from the audience before starting
 2. make sure the stopwatch makes a sound audible to the audience
- How should I mark the movements? (choose one)
 1. By turning pages?
 2. By changing instruments?
 3. By putting the instrument down?
 4. By breathing, sighing, wiping brow?
 5. By closing or opening the instrument/case?
- Do not react to interruptions (ringing phones, photographers, catcalls, booing, laughter, a seagull in the theatre). No eye contact.
- The performer is invisible:
 1. do not make any sounds during the performance
 2. hold your instrument as if performing
 3. No Actions: DO NOT pretend to play (strumming strings, moving fingers above the keys, conducting...)
 4. do not move
- HOLD the audience's attention! They must not wander off!
- Never smile, no silliness—this is not a joke.

³⁰ I have lost the original, but this copy reflects my concerns at the time.

To give a visual and sonic idea of my approach at the time, here is a video by Daniil Trifonov, recorded at the Verbier Festival. His performance represents exactly what I was trying to achieve at the time I wrote this checklist in the late 1990's.

► PERFORMANCE VIDEO: <https://www.researchcatalogue.net/view/1712958/2917624#tool-2935491>



Figure 58: Trifonov performing 4'33" (Verbier Festival, 2019)

Trifonov's approach is a perfect example of "shin," the expressive Japanese word for an awkward silence that fills a space. In this case, the awkwardness arises between him and the audience. His artistic position seems to be imposition, not attentiveness. The uncomfortable silence that he creates is heavily reinforced by the behavioral constraints of a classical music environment. The audience complies with the ritual and sits in mournful silence throughout the performance.

Trifonov's embodied markers of intense concentration, frozen attitude, and facial tension are all familiar to me and exemplify the problematics of my own approach at the time. Looking back at my checklist, as exemplified by Trifonov's performance, I am struck by how dogmatic it seems and by my clear wish for a "professional" performer to "lead" the audience. This list implies a conducting role for the performer and a subservient role for the receiver. So when I first read Kahn's *History of Voice, Sound, and Aurality in the Arts* many years later, I immediately recognized his claim that Cage was silencing others:

It should be noted that each performance was held in a concert setting where any muttering or clearing one's throat, let alone heckling, was a breach of decorum. Thus, there was already in place in these settings, as in other settings for Western art music, a culturally specific mandate to be silent, a mandate

regulating the behavior that precedes, accompanies, and exceeds musical performance. (Kahn, 2015, p. 165)

As a young concert pianist, I considered that mandate of decorum to be the audience's duty; I took it for granted. Audience decorum also meant (though I didn't realize it) audience docility.

Kahn is also concerned about Cage's imposition on the performer:

4'33", by tacitly instructing the performer to remain quiet in all respects, muted the site of centralized and privileged utterance, disrupted the unspoken audience code to remain unspoken, transposed the performance onto the audience members both in their utterances and in the acts of shifting perception toward other sounds, and legitimated bad behavior. (Kahn, 2015, p. 166)

In my opinion, however, Kahn has not examined whether silencing a performer ("don't play") is different than asking a performer to activate something ("do embody non-playing"). Going back to my performance approach in the 1990s, I did not see myself as silenced or the audience as silenced, even though it is abundantly clear that my checklist was seeking (quite un-tacitly) to mute both myself and the audience. I was elevating 4'33" to an iconic status, trying to protect it from the outside world at all costs. I did not yet see a connection between Cage's (mild) destabilization of the normative concert hall performative situation and the audience's frequent transgressions. As I would discover, bad behavior was still legitimized and—here I agree with Kahn—almost encouraged.

Another point my younger self seems to have missed was the question of interruption. And even though I was familiar with this anecdote, I think I missed the point until recently. Cage wrote in his collection *A Year from Monday*:

One day when the windows were open, Christian Wolff played one of his pieces at the piano. Sounds of traffic, boat horns, were heard not only during the silences in the music, but, being louder, were more easily heard than the piano sounds themselves. Afterward, someone asked Christian Wolff to play the piece again with the windows closed. Christian Wolff said he'd be glad to, but that it wasn't really necessary, since the sounds of the environment were in no sense an interruption of those of the music. (Cage, 2012, p. 133)

If I were to apply this rule to 4'33", then all kinds of interruptions might happen and be included in the sound of the piece (or *be* the sound of the piece). Wolff and Cage are both making the point that there are no interruptions, that the audibility of "real life" is the point, and that the piece does not need to be "protected" from interruption.

For years, I had strived to protect Cage's legacy from misinterpretation, amateurism, and ridicule, aiming for absolute fidelity to the score and maintaining a stark separation between performer and audience, an adherence to classical norms. Yet I was not uninformed. My checklist was an attempt to preserve the approach I had learned from Cage himself. My desire to respect the composer's intentions at all costs is similar to what aesthetic theorist Lydia Goehr describes in relation to Stravinsky's ideal performer:

For Stravinsky it was a 'moral responsibility' that the best performance be one that most successfully negates its own presence. The demand here is for performance *transparency*: performances should be like windows through which audiences directly perceive works. (Goehr, 1996, p. 6)

Stravinsky was reacting against the excesses of 19th-century romanticism and the cult of the soloist performer whose artistic freedom superseded the composer's choices. Cage shared this same distaste for performers who tried to make the performance about themselves. He attempted to be personally self-effacing onstage: why should others not eradicate their persona as well? But my attempt to efface my persona via the checklist often failed. I was opening the wrong window onto 4'33". Frustrated by what I considered the failure of the composition, I stopped performing it. A new approach was needed, and that would come much later as part of this research project.

4.2 Learning From the Waveforms

In 2020, in collaboration with Szymon Hernik, a student in design at the Royal Academy of Art in The Hague, I undertook an interdisciplinary project examining performative interpretations of 4'33". We aimed to uncover hidden commonalities for embodied silence by visualizing interpretations found on YouTube. Unexpectedly, we found vast discrepancies in both duration and sound levels among the performances. The diversity of interpretations surprised us. We searched for commonalities without at first finding any, until we looked at the audio waveforms. As we compared waveform amplitudes across videos, we discovered significant similarities in their structural patterns despite the diverse interpretations. By picturing the silences, the ritualistic natures of preparation and postlude emerged, bookending the performed silences. Our analysis reinforced the importance of considering 4'33" performances in terms of their audible markers.

However, there are limitations to this visual representation of each performance by concentrating on waveforms: while viewing these waveforms offers a global perspective, it risks distorting artistic intentions and ignoring the eloquence of silence. The act of viewing waveforms within the confines of audio software and a numbered timeline imposes its own

framing. Reducing complex performances to two-dimensional waveforms could potentially also lead to a false sense of equivalency. We tried to be cautious in our analyses in order to not lose sight of the actual performances.



Figure 59: Preparations and postludes (“bookends”) are starkly visible in fourteen randomly chosen YouTube versions of 4'33” (Livingston & Hernik, 2020).

The majority of YouTube videos featuring performances of 4'33” exhibit a consistent framing approach, characterized by a (preparatory) prelude and a (concluding) postlude, despite the unnecessary and un-notated nature of these bookends, which were certainly not specified by the composer. This framing has become ingrained in the performance practice of the piece. Our analysis initially had focused solely on 4'33” itself, but we quickly switched our attention to the significance of the transitional elements before and after the notated “silence.”

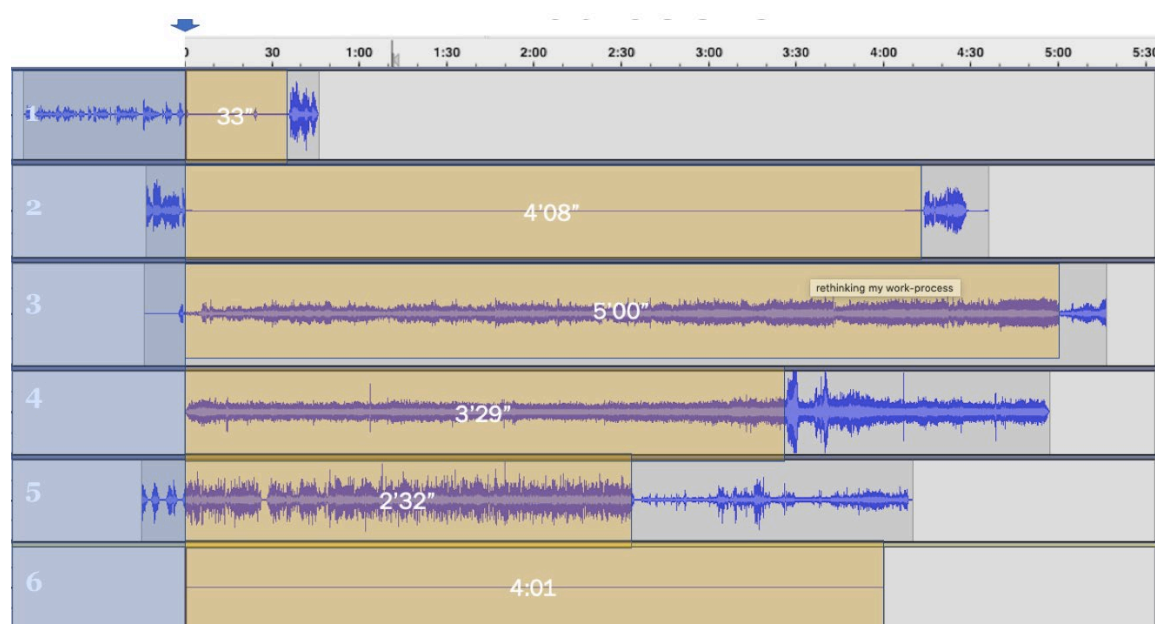


Figure 60: In these six randomly chosen videos of 4'33", and despite variations in length, there are similarities in framing and structure. Although it may be unclear when watching exactly when the "music" starts and begins, looking at the waveforms gives clarity. By shading the "music" area, the bookends preceding and following the silence are made clearer.

After examining eighty videos of Cage's composition, I observed that only a few were four minutes and thirty-three seconds long; durations did not seem important. As far as the framing was concerned, some musicians opted to silence the video in post-production—very clearly visible as flat horizontal lines (waveforms 2 and 6 above). Most included all the background noise or created their own noise with shuffling, caressing of instruments, feedback, natural sounds, or fidgeting. In a few cases, the "silence" was louder than the audio before and after the performance (waveform 5, for example). This is not unique to the internet; it could also happen in live performance.

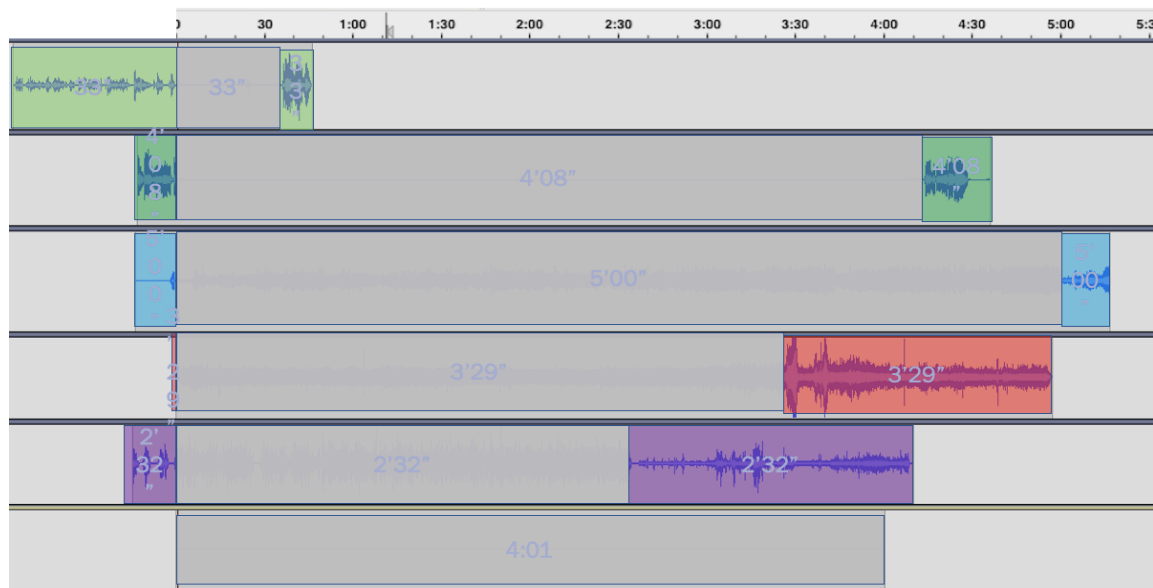


Figure 61: The pre- and post-performance segments resemble book-ends. Mostly they are louder (larger waveforms) than the “music” of 4’33”. Occasionally they are quieter (example 3) or non-existent (the bottom example contains no bookends).

In most of these videos, 4’33” is bookended by a prelude and a postlude that is louder or, in a few cases, softer than the performance that follows or precedes: left-frame and right-frame. This is reminiscent of Cone and Littlefield’s point that (classical) music is framed by a silence in the beginning and at the end. It also corresponds with Jankélévitch’s ideas about the anticipation of *avant-silence* and the remembrance of *après-silence* (Jankélévitch, 1961). Jankélévitch spoke of the *avant-silence* as a silence preceding the start of a piece (think of the expectant pause before a Mozart second movement). *Après-silence* is the silence after an emotional event (e.g., the hush after a mass in church). These two kinds of silence are *exterior* to the notated composition but not to the experience. Most of the YouTubers deliberately include footage before and after 4’33”. Is this a deliberate search for context or framing? The *pre-* and *post-* filmed elements shape the silence between them.

As Littlefield suggests (see Chapter 2), frames are necessary to mark the transition from the “real world” to the “musical world,” and these frames are often silent, that is, consisting of all the “non-musical sounds” that are always already present. However, Littlefield also acknowledges that frames are often porous; it is not always clear which silences belong to the “real world” and which belong to the “musical world.” Regarding 4’33”, it seems that this musical world is, in fact, the real world. What is generally excluded (all the already existing environmental sounds) is included in the inside, thus becoming a part of it. Therefore, it is to be expected that it is difficult to determine what belongs to the inside and what to the outside in performances of 4’33”. However, even if Cage somehow deconstructs the opposition between silence, “non-musical sounds” and music, in most of

the YouTube performances (even the home videos without a live audience), the framing remains clearly visible and audible: the *avant-silence* often comprises gestures and random sounds of the performers setting up their instruments, tuning, etc. And the *après-silence* is mostly louder than the silence of the composition which precedes it. These framings create a context, a setting apart, a hierarchy of music vs. non-music, or performing vs. non-performing. There is even another kind of interior framing since most performers mark the start and end of each of the three movements. This stems from traditional performance practice around the work and entails two pauses of “not”: non-playing between the movements. Thus, a nested recursive system of marked noise within silence may be created through the insertion of spacing between movements. YouTube performers of 4'33" show originality in their search for new markers of silence, but still need to frame their performance.

4.3 Attitudes of Silence in John Cage's 4'33"

In Chapter 2, I presented three potential types of markers in terms of what they do: imposing, summoning, or describing silence. There seems to be a close connection between the experience of time and these three functions:

- A marker that **imposes** silence can represent discreet **points** in time in the form of signals (turning the glass, overtly shouting “*Ruhe*,” or more implicit cultural codes);
- A marker that **summons** silence is often more **continuously** present, as in aspects of ambiance, architecture, nature sounds, or immobility;
- A marker that **describes** silence can arise from markers that are **changing** over time, such as gestures, movements, sounds, or facial expressions that shape the experience of silence.

However, these correspondences are not one-to-one and should not be seen as prescriptive. They can describe many situations. In the performance of silences, multiple markers are usually present and acting at any given time, confusing the temporalities involved. This section concentrates on the audible (and visible) markers for silence within the YouTube setting. I have selected seven examples, aiming to exemplify eloquent silences within performances of 4'33". The performers are chosen for the variety of silences they embody: David Tudor, William Marx, John Cage himself, J Kim, Sis Leyin, Lito Levenbach, and the band Dead Territory. These online examples are then followed by two personal experiences from my own practice: one from a national broadcast in Russia and the other from workshops I led at a hospital in Paris.

Example 1: David Tudor (solo piano)

MARKERS: visible markers: page-turns, darkness, concentrated attitude, waiting posture; audible markers: clock ticking, camera clicking

► TUDOR PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2935852#tool-2936135>



Video 1: David Tudor (YouTube, 2015)

I was eager to observe David Tudor performing because he gave the first performance and is closely associated with Cage and the piece. Tudor's style is sober, restrained, and self-effacing. There is no audience sound at all.

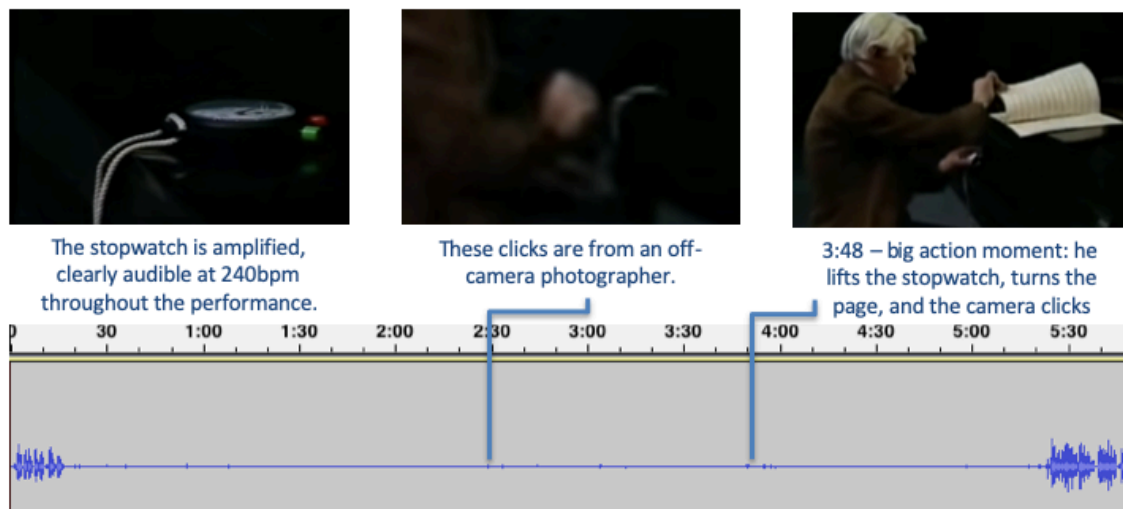
What is remarkable is that there are two very strong and unexpected markers in this performance: a highly audible stopwatch and highly visible page turns. The frantic ticking of the stopwatch is both mesmerizing and distracting—emphasizing duration and creating speed and rhythm where it is not called for. The ticking leaves less room for silence or listening. Maybe this sound was only audible to the performer and the camera and would not have been audible to an audience. Like Dramm's composition *Ruby* for piano and metronome, it raises the issue of what the performer hears in contrast to what the audience hears.³¹

³¹ In Dramm's *Ruby*, the ticking metronome marks out silence but also evokes the practice room, the sounds associated with preparation. And that is partly Tudor's case as well, though the effect for me is more one of counting out time.

Tudor's use of page turns at apparently random moments surprises me.³² Non-playing page-turning might be a *tacet* maneuver. Or the page turns might be markers for time. Or they could be markers to indicate that performing is still going on. But page turns are not indicated in Cage's score. For that matter, most versions of the score are only one page long. The numerical and durational precision of the title—4'33"—might well suggest that it is (also) about time. In an interview, Cage said, referencing Erik Satie:

Of the four characteristics of the material of music, duration, that is time length, is the most fundamental. Silence cannot be heard in terms of pitch or harmony: it is heard in terms of time length. (Kostelanetz & Cage, 2003, p. 81)

Cage's suggestion that silence is heard in terms of duration contrasts with Antheil's idea for the silences of *Ballet mécanique*: "Here I had time moving without touching it" (Antheil, in Whitesitt, 1989, p. 105). Tudor is figuratively and literally touching time (the page-turning is a tangible gesture with his fingers). Confirming Barthes' theory about captions giving silence meaning, Tudor has achieved a depiction of "silence as time" via page-turning.



Tudor's style and demeanor defined the world premiere. He set the tone for an accepted performance practice of 4'33", which continues to this day: The pianist is central, and there is no reference here to "real life," which seems entirely excluded from the film. The pianist projects an attitude of authoritative stillness emphasized by the darkness around him. And

³² The use of pages is somewhat inexplicable, for there is only one page in the original score, and pages seem irrelevant. It is true that Cage made five different versions of the piece, some as a musical or proportional score, and some as text instructions. The score that Tudor used in 1952 is now lost (Gann, 2013, p. 178).

yet this recording has what could be considered as major audible and visible distractions: a clock ticking and enigmatic page turns. Tudor's interpretation seems neither about silence nor about listening. The ticking clock and the punctual sequentiality of the page turns could summon but also impose silence, yet they are most understandable as markers for chronicling time.

Example 2: William Marx (solo piano)

MARKERS: contextual markers: tradition, positioning at the instrument; visible markers: Steinway & Sons logo, hairstyle, tuxedo, stopwatch (also a marker for time); audible markers: stopwatch click, continuous hum from the recording apparatus, incidental noise from the audience

► MARX PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2935852#tool-2936144>



Video 2: William Marx at McCallum Theatre, Palm Desert, CA, USA (YouTube, 2015)

With over 7 million views on YouTube, this video is astoundingly popular. Marx embodies a traditional classical authority with his nimbus of white hair and his impeccable tuxedo, which he wields as markers for silence. Yet the film is also funny. I think the secret of his success lies in a Dadaist absurdity; he takes the piece to its classical extremes (Steinway grand piano, tuxedo, Roman profile, black and white filming). His performing body is held with brio, with majesty. Marx is unquestionably playing to the crowd, enacting “exceptionality” for the audience. His performance is both pedagogical (“this is what the piece is about”) and entertaining (“enjoy it”).

He holds the stopwatch in his hand while he performs, sending a strong signal to the audience to pay attention. He shows the watch clearly, in a palpable expression of time's passing and his control over it. But there is a major difference to Tudor's stopwatch: Marx's stopwatch is silent, it is more visible than audible. He is using the object as a marker to *impose* silence. Despite its gentle irony, this type of performance may be exactly that which aggravates Kahn, for silence is imposed by employing all the cultural markers of classical

music. Kahn rebels against the “site of centralized and privileged utterance,” which in this case is very clearly marked by a tuxedo-clad, white-haired Aquiline-profiled classical pianist. Marx embodies centralized privilege. His strong embodiments and charismatic gestures are quite the opposite of Cage’s self-effacing demeanor (see below). However, Marx exposes the implicit codes of imposing silence so theatrically that they can hardly be taken seriously anymore. The markers lose their summoning power and become descriptions of a silence vocabulary that can even evoke laughter, which is definitely part of the appeal of this performance.



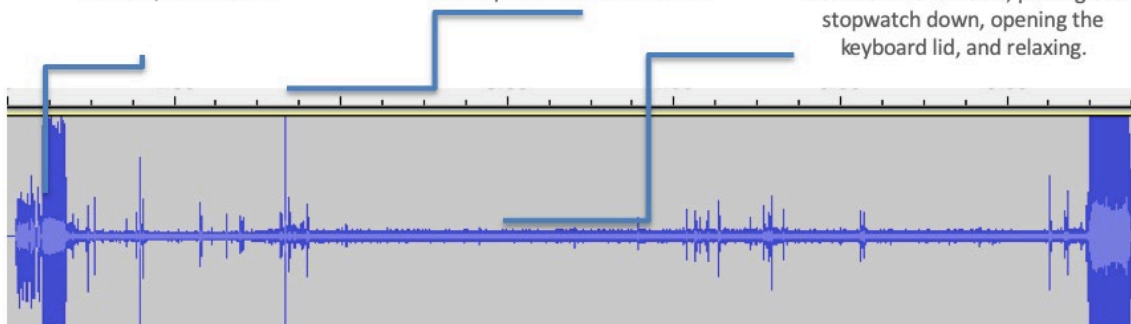
0:17 - all the rituals of a classical concert performance



0:49 - A very dramatized click of the stopwatch marks the start



1:30 he takes time off for the space between movements, putting the stopwatch down, opening the keyboard lid, and relaxing.



Example 3: John Cage (solo lecture)

MARKERS: visible markers: table, empty glass (also a symbolic marker), motionless posture, piece of paper, stopwatch;
audible: slow breathing

► CAGE PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2935852#tool-2936155>



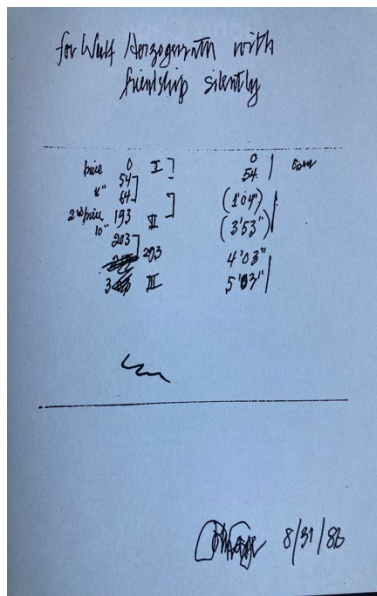
Video 3: John Cage (Kölnischer Kunstverein, August 31, 1986)

This video is one of the rare performances on film of 4'33" by the composer himself. The performance is not a smooth one. Cage re-starts the piece after someone yells, "*Ruhe!*" and there is a noticeable crescendo of the audience talking. Cage barely conceals his annoyance with the situation, and towards the end, he loses track of the timing. The violence of the text behind him may or may not have escaped his notice, but the audience's inattention must have given him the impression that he was not being taken seriously. Probably, he hopes to *summon* silence, but his markers (embodied stillness and an empty glass) do not succeed. Cage is performing for himself but hopes that the audience will come to a knowledge of listening, silence, or attention. Audience inattention (or possibly "real life"?) seems to have intruded hopelessly into the performance.

The shouting of "*Ruhe!*" is an instructional audio marker that tries to impose silence (and fails). It is a signal which points in time. It is hard to tell if Cage is more annoyed by the shout, which goes strongly against his ideas about 4'33", or annoyed by the audience noise, which obviously and audibly marks their inattention. He is trying to connect the movements and the passing time of the artwork via his body, his downcast eyes, and his hands resting flat, in repose, on the table. The work seems a connective *knot* to him and a background *not* to the audience.

Cage uses the turning of the glass to mark the space between movements. His score (see the list of timings below) indicates that the pauses between the movements total 10 seconds each. After the first movement, he does indeed take 10 seconds, including the gestures of turning the glass down and then up. After the second movement, he pauses for

9 seconds, then loses track of the timing. His score suggests that the pauses between the movements are not part of the piece. But that may be a moot point, as they have become part of the work through performance practice and tradition. Except for Sis Leyin, all the performers in this study indicate three movements.



This is the page Cage has in front of him, a hand-written score dedicated to Wulf Herzogenrath, written on August 31, 1986, the day of the performance.)

Timeline on video

0:20 Cage starts stopwatch
 0:24 Someone yells out, Cage resets watch
 0:38 starts over (glass up) Mvt. I
 (exactly 0'54" long)
 1:32 pause (glass down)
 1:42 Mvt. II (glass up)
 (exactly with score@1'04")
 3:51 pause (glass down)
 4:00 Mvt. III (glass up)
 (no longer in sync with score)
 5:30 end (glass down)
 (he ends 11 seconds too early)
 5:34 turns stopwatch off
 5:36 smiles to audience

Note that during each pause, the audience quiets down slightly, providing a messy example of "noisy" silences that could be interpreted as inter-movement framing silences.

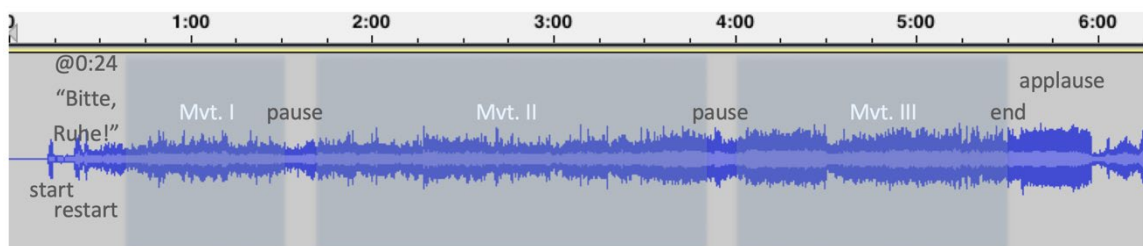


Marking a pause between movements, he turns the glass over very deliberately.

Just before it begins, someone yells out "RUHE!" (silence) which seems to annoy Cage. He resets the stopwatch and starts over. He indicates the movements by turning over a glass.³³ Interestingly, the waveform suggests a *crescendo*. The audience becomes increasingly restless.

Marker: Glass up is performing; glass down is pausing. The marker here is an object.

The event was filmed by Klaus vom Bruch at the Kölner Kunstverein. The painting is Schimpftuch by Sigmar Polke.



The preceding three videos are performances onstage or in public venues filmed from one point of view: an audience member's front-row center seat. The solo performer is centered on a stage, or as if on a stage; statically at a piano or a table. The video experience attempts

³³ His use of a glass is not just a reference to conventional lectures, in which the speaker is provided with a glass of water. Cage often referred to silence as a glass, as for example in his "Lecture on Nothing": "It is like an empty glass into which, at any moment, anything may be poured" (Cage, 2012, p. 110). The glass suggests one role of silence in Cage's world, as a container for "anything," as well as an indicator of passing time.

to duplicate the experience of being there in the actual venue. But in the examples that follow, the performer-stage-audience roles are abandoned in favor of more flexible models.

Example 4: J Kim, *sitting on a bench in the wind* (outdoor/pastorale)

MARKERS: contextual: nature, water, rocks, sky; visible markers: immobility; audible (in-audible) non-speaking while the two people are talking to one another

► J KIM PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2935852#tool-2936179>

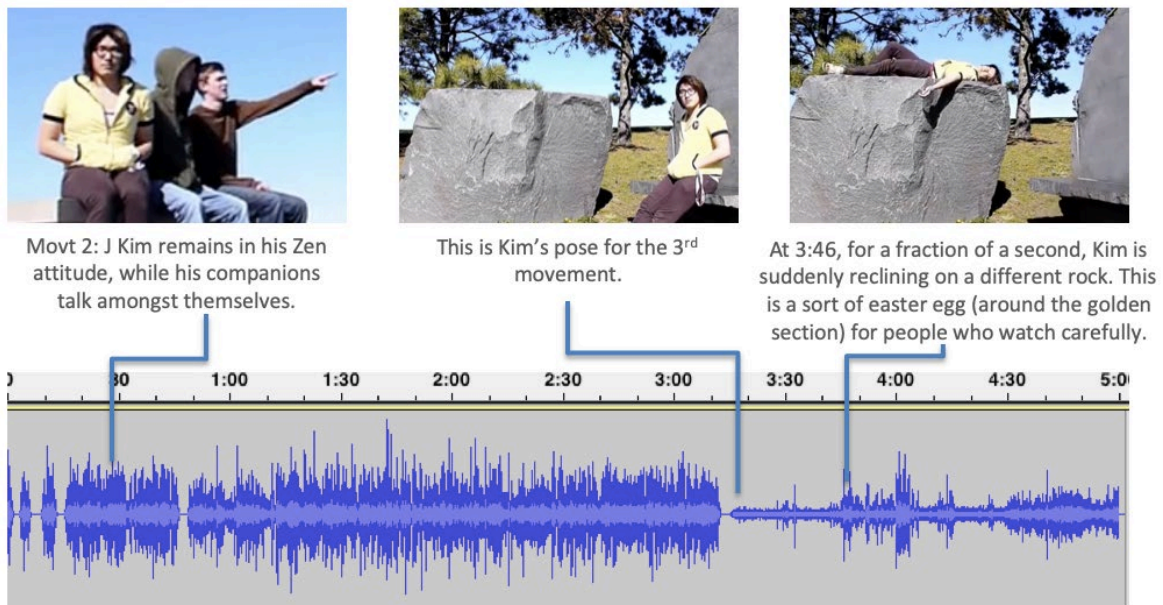


Video 4: J Kim, *sitting on a bench in the wind* (YouTube, 2020)

The scene is a park by the sea. There is no concert hall, no instrument. The relationship of the performers to each other and the camera is strained and awkward. The three movements are quite different audibly and visibly. The second movement is most intriguing because American performance artist J Kim (the performer in the yellow hoodie) is silent and focused on the performance while two people sit next to him on the same bench, ignoring the camera and having their own conversation. We hear them talking and see them gesturing, but the wind obscures their words. As with the audience in the previous video, these two people are apparently ignoring the performer. This audible/visible marker of noise for silence highlights the contrast between the main performer and the two others, making Kim's actions seem "more silent." The fact that the conversation appears to be ongoing and unrelated to Kim also reinforces a sense of ongoing time, a continuous present. Is Kim sending a message that he is experiencing silence despite the "real life" sounds around him? Or is he looking at us, trying to impose silence upon us in the context of our "real world," not his?

I like the suggestion that silence can reference presence in such strong ways. Kim is staring directly at the audience. Nonetheless, he is firmly anchored in the landscape, on the rocks, focused on his present here-ness. He has an attitude of watching, looking directly at the

viewer, potentially connecting to the YouTube audience, which will watch later after he has uploaded it. But in this Zen here-ness is also a “hear”-ness, an attitude of listening, a connective knot between the performer, his friends, and the viewer.



Example 5: Sis Leyin, *Quarantine A cappella* (solo online x 4)

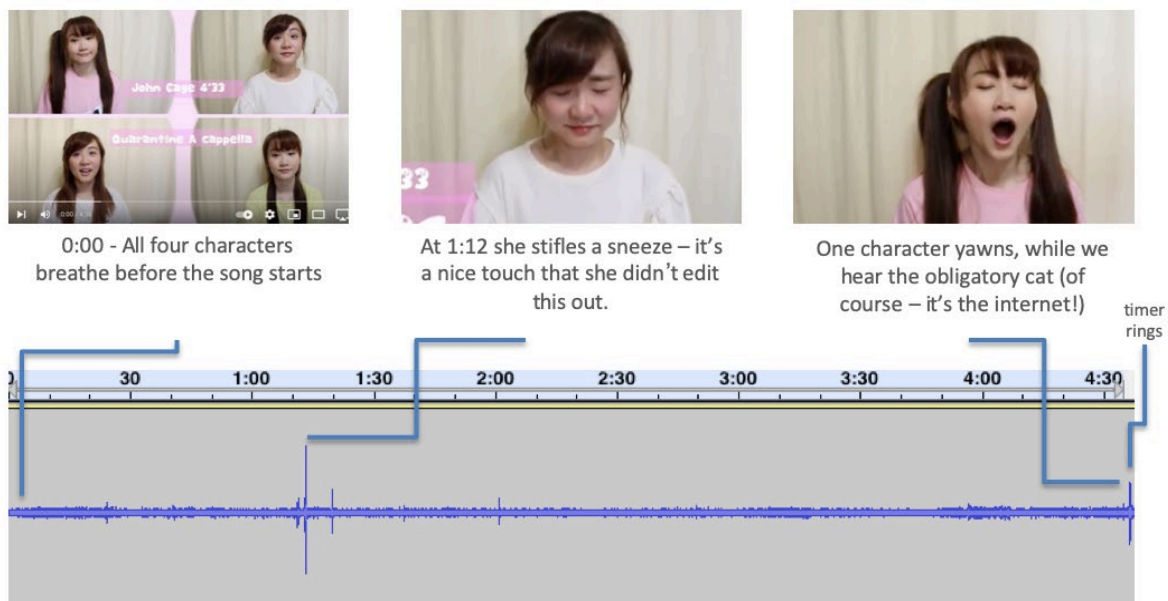
MARKERS: contextual: silent multiples, , claustrophobia, irony, quarantine; visible markers: facial expressions, intimate setting; audible markers: bird, cat, muffled exterior sounds, air-conditioning

► LEYIN PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2935852#tool-2936288>



Video 5: Sis Leyin, *Quarantine A cappella* (YouTube, 2020)

Sis Leyin's performance is representative of the many quarantine versions of 4'33". The tiling deliberately recalls endless Zoom meetings during lockdown. A quote from Leyin: "The world isolates us [...] so I lost my temper and didn't create or play any music." By not creating, she was engaging in a type of self-silencing. And the experience of lockdown was often one of being silenced (by the authorities, by the threat of illness). For Leyin and countless other artists, maintaining a creative voice under these circumstances was painful and isolating.



Her primary emotive quality seems to be an attitude of resignation. The claustrophobic cinematography, consistently framed against the same drapery and under dim, bluish lighting, encapsulates the essence and eternity of lockdown. Meanwhile, her yawns, her drooping sleepy eyelids, the sound of the space (an oppressive room tone sounding like a fan or air-conditioner with maybe some traffic sounds in the distance), and an incongruous bird chirping (does she have a pet bird in the room?) signal for silence. These contrasting visual and audible markers form an apt representation of a not-being, a not-here-ness, a "not" that represents the removal of outside stimuli, and also a type of boredom, an imitation of "real life," that parallels Cage's aesthetic of listening closely.

Staying silenced for a prolonged period of time is difficult, and a certain amount of potential noisy energy seems to build up in the muscles. Think of the fidgety energy and coughs released in the interlude between the movements of a symphony. Think of the anxiety of a prolonged theatrical pause. To remain still in a fidgety world is a tensile performance; an effort. (Mock & Counsell, 2009, p. 215)

Leyin has chosen to enact four different characters, each with their own fidgety world, each visibly (performing) an effort to remain still, each with a different shirt, makeup, hairstyle, and persona. Common to all four is a range of vague facial expressions, distracted smiles, rolling eyes, and biting her lip; these facial embodiments invite a reflectiveness, perhaps summoning silence, in an endless continuous present. Her gaze (even more than in the Kim example) is very present. More than the other performers, she seems to be directly connecting with the YouTube viewer, not so much listening as reaching out to evoke or summon listening and possibly silence.

Example 6: Lito Levenbach (solo online x 12)

MARKERS: contextual: seriousness; poise; silent multiples; visible markers: tiny and precise gestures; audible markers: very tiny sounds

► LEVENBACH PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2935852#tool-2936236>



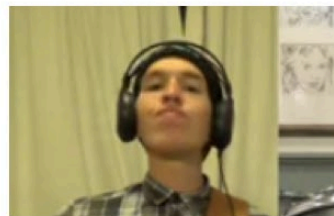
Video 6: Lito Levenbach, *1 Guy, 15 Instruments* (YouTube, 2015)

Lito Levenbach is the performer in this multi-instrumental montage. The editing and the *mise-en-scène* are very clever. There are three movements, each exactly 91 seconds long and hardly distinguishable except as blips on the waveform. It took me several viewings to realize that his hands perform a two-second strumming motion (in all 12 videos) to mark the changes between movements. He makes creative use of tiny changes in clothing and sunglasses, but his expression is serious, neutral, and respectful, as if he were following a conductor. There is very little sensation of connecting with an audience—he appears to be performing for himself.

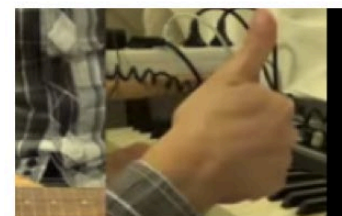
He chooses to remain motionless. His intro and outro are minimal and, at first, too subtle to distinguish from the actual performance. But a closer analysis reveals that it visibly and audibly starts at 5 seconds and ends 4 minutes and 33 seconds later. He is rigorous about the overall timing, more so than any other performer I studied, although he does not follow Cage's 1952 timings for the movements. And he plays the piece very quietly. It is entirely without irony, a refreshing change compared to Kim's or Leyin's hyper self-consciousness.



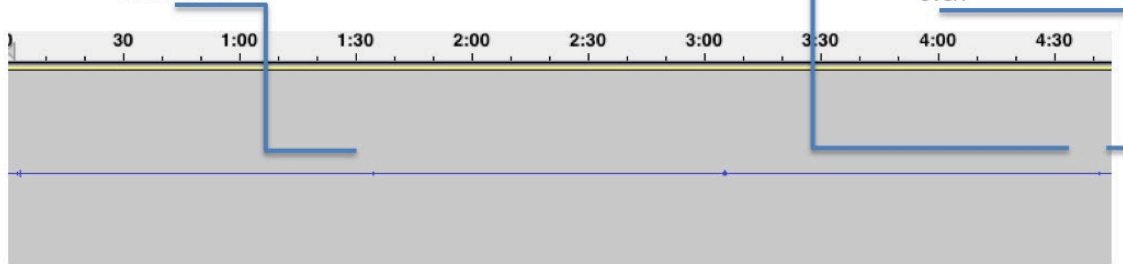
All of the players wiggle their fingers at 1:29 into the performance. This starts the 2nd movement.



Player 8 gives the downbeat for the end after exactly 4:33 of performing.



Player 12 gives a thumbs up (silent intentional signal) (to the audience?) indicating that it's over.



Example 7: Dead Territory (online heavy metal band)

MARKERS: contextual: (thwarted) loudness expectation; visible markers: big amplifiers, hair-tossing; audible markers: (potential) noise, warmup riff, amplifier hum

► DEAD TERRITORY PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2935852#tool-2936204>



Video 7: Dead Territory, 4'33" Death Metal Cover (YouTube, 2015)

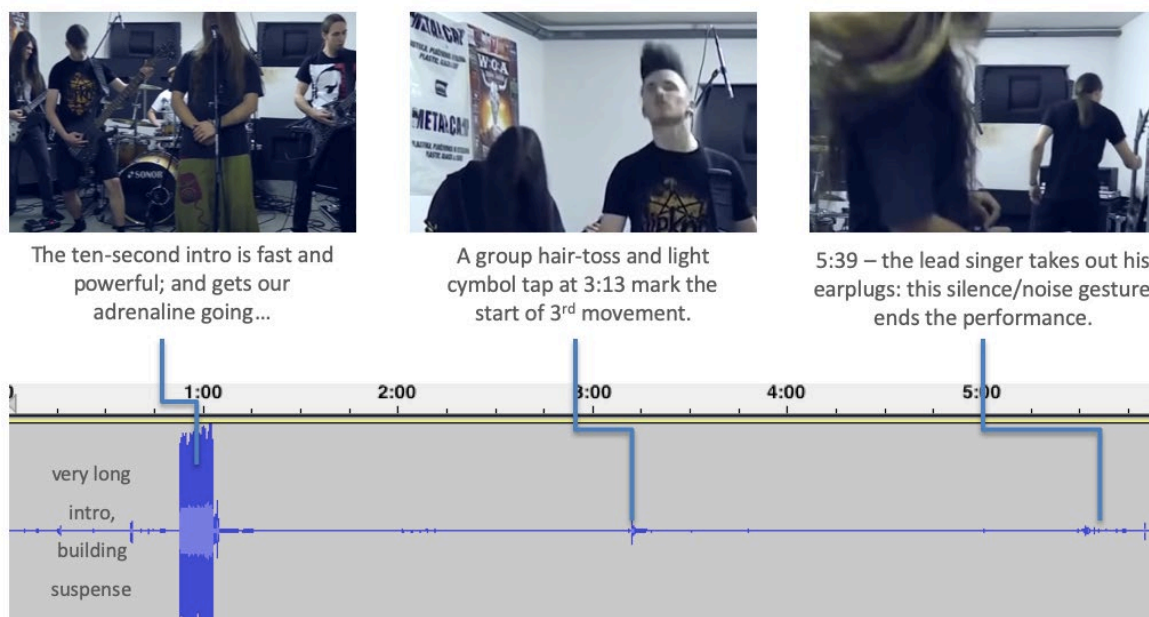
One of my favorite versions of 4'33" is a video by the band Dead Territory, an Austrian group known for their heavy metal style. As I engaged more and more with covers of 4'33", I was struck that metal bands seem to make more powerful, insightful interpretations of 4'33" than classically-trained pianists. Could being educated in the classical tradition be a handicap in performing Cage?

There are different approaches from each performer. From left to right, performer one mostly freezes. Performer two marks the beat. Performer three (the lead vocalist) embodies listening most effectively: his stance, his attitude, his hair gestures, and his crossed hands all communicate embodiments of attentiveness or attention. Performer four looks a little lost, unsure of his role, but mostly imitates performer two, nodding his head to an internal or imaginary beat (the fact that their beats are not in sync is only somewhat noticeable).

There is a controlled wildness to the buildup: The hair tossing, the guitar tuning, the intro riff, the insertion of earplugs—all these are done with absolute integrity and seriousness. And these performative rock-n-roll gestures abruptly cut off at the moment that the performance begins. There is something leftover of the classical setting of Cage's piece, yet re-interpreted in a stylized language of noisy rebellion. The musicians treat silence as the absence of sounds, but they also allow the non-musical or non-intended sounds of real life to enter the frame. We hear the humming of the amplifier, small shuffling of clothes and hair and feet, and extraneous or accidental guitar sounds, all superimposed on a very quiet room tone.

During the performance, the musicians keep an intense bodily pose with their instruments and a rapt but relaxed focus on their faces, ending at precisely 4:33. They nod to some kind of internalized beat. Is this open listening, as Cage desired? Or is their embodiment of an internal beat creating a confused image of continued musical intentionality? They seem to be listening to their own music, which is not exactly Cage's idea of listening to the world around them.

One intriguing ambiguity about the performance comes from the framing. It is not so much the absence of sounds that frames the music here; it is "non-musical" music that frames the "musical" silence. There is a frame of quiet (getting ready to perform) followed by a typically loud rock-style prelude (shouting "1,2,3,4!" and playing a drum roll), both of which precede the actual performance and put the "real life" component into the framing elements rather than the artwork itself.



A typical reaction from the commentary: “The best part is that it comes from a metal band. It adds more tension. We know you’re all wound up inside. We know you’re itching to pound out sound.” And that, for me, is the genius of this performance: it is all about control; it is about holding a ticking bomb that does not explode. The thwarted threat of violent catastrophe respects the score but also updates Cage’s artwork for our time, for summoning silence can also arise from suppressing sound.

Two Counterexamples

Own Practice Experience: A Live Broadcast (All-Union Radio, Moscow)

MARKERS: contextual: radio performance, political environment, fall of Soviet Union, radio silence; audible (inaudible): performed silence, audience silence, breathing

In June of 1993, I was invited to perform 4'33" live on All-Union Radio in Moscow. As we were ushered into the studio, our translator whispered that today’s audience was *only* one million people. The Soviet Union was collapsing, and listeners had new choices. But it was not over yet at the national radio. As eager as the general public was to hear Western pop music, they also wanted to discover the Western avant-garde. Hence, my performance of Cage’s silence piece live on the air.

The broadcast, for an immense audience under chaotic conditions, was a confrontation of silencing and eloquent silence, absence and presence, agency and aleatory. The radio show was in such a turbulent time, that we were never sure it had been actually broadcast. Although it was “live” on-air for the entire former Soviet Union, the deteriorating infrastructure meant that signals may never have left Moscow and may never have been transmitted beyond the roof of the radio building. I never found out what the audience

thought of the performance. Did that million dutifully listen to the silence? Did the potential listeners *even know* that there had *been* a performance? Could they tell the difference between musical silence and technical silence? Did they tune out or switch stations? Were they entranced, inspired, bored, or confused? With all the chaos and the power cuts, did they just assume that the station had gone off-air? Was the silence politicized? How much explanation was given before the performance began? Was it treated as a pedagogical opportunity or a spontaneous happening? These questions were never answered for me as a performer.

Salomé Voegelin has theorized a mode of listening that might reduce the dominance of the visible in favor of other senses (Voegelin, 2010, pp. xi–xiii). Her approach offers intriguing possibilities for analyzing my radio performance since all visual elements and clues were removed. One of the many paradoxes raised by this broadcast was that *I* felt silenced, unable to communicate with the audience since I couldn't see them. And the opposite is also true—they couldn't see me either. Did the piece thus lose value? Or did it gain in value because the visual was eliminated in favor of the (in)audible?

As the performer, I was only concerned with one thing: time. It was going too slow; it was taking too long. I began to fear I had set the stopwatch wrong. As the silent audience of my fears, I suffered an eternity in those four and a half minutes. No one was visible in the control room. The only audible markers for silence were the small sounds of our bodies. There was no audience feedback. In this agonizing performance, it was as if time stood still, thus the opposite of Tudor's performance, in which time could be heard distinctly ticking.

I found it nerve-racking standing in front of the microphone and comprehending how many people were listening. But I also knew they were not listening to "me" because the microphone transmitted none of the sounds I was hearing (my breathing, the beating of my heart). What the microphone transmitted were low-level noises, the hum from the electrical equipment, and the background sounds in the studio. The resultant quiet noise emitting from the user's radio would then resonate with other "real life" hums and vibrations at home or in the car of the listener, creating small sounds on varied timescales. Listeners would have heard the background sounds of their own world, of their own personal soundscape: maybe the whoosh of their car's tires, the creak of the radiators in their kitchen, or birds chirping outside.

In addition to the noises of their personal soundscape, they heard the vibrations of their radio as it broadcast the audio artifacts of the Moscow recording studio. Whatever those quiet hums might have been, they were probably quieter than the localized noise of their

kitchen, car, or office. I can imagine that many experienced frustration rather than silence: “What’s wrong with my radio?” (the personal); “What’s wrong with the station?” (the administrative); or “What’s wrong with Moscow?” (the political). All these would have been interpretations of the silence as extreme *not*. Many might have switched stations, choosing to silence Cage; others might have heard it as music or found it soothing.

The resulting situation was an interesting experiment in shared listening in that the broadcast became a space for active contemplation and imagination for the listener. Moreover, the performance tied in nicely with Cage’s idea that this piece is going on all the time around us. Whether or not 4’33” was actually broadcast, whether or not the intended audience heard it or not, listening to “real life” was achieved that day on an impressive scale.

Own Practice Experience: 4’33” in Healthcare (Workshops at Hôpital Goüin)

MARKERS: ritual: group markers of shared ritual; visible markers: others, self; audible markers: breathing

Is there a way to bring performances of 4’33” closer to the listening experiences that Cage described? I explored this question in workshops I led for many years for hospitalized patients in long-term care.³⁴ One of our favorite exercises was to sit in a circle, with no particular expectations, and close our eyes and listen. This ring of people contained no designated performer; we were all performers and listeners at the same time. We might listen for a minute or five minutes. We would stop when concentration seemed to be flagging. The result was a bit like Cage’s personal silence meditations in the forest and less like the YouTube performances above. By removing the designated performer, the audience had become the performers themselves. As a group, we became a flexible and continuous marker for summoning silence, a state that recalls Cage’s idea of tuning into a silence that is already there. This led to a phenomenon Margulis describes as meta-listening:

Experiences during silent periods also point to the active, participatory nature of musical listening. [...] the listening itself often becomes an object of listening. In these episodes of ‘meta-listening,’ the music seems to purposefully place listening habits or beliefs on self-conscious display to the listener, weaving this into the fabric of the aesthetic object. (Margulis, 2007, p. 274)

³⁴ This project took place from 2010 through 2020 primarily at Hôpital Goüin in Clichy, France, under my own artistic direction, and with the guidance of social worker Gaëlle Quéven and the psychology staff of the Fondation Goüin. The collaboration with Association Le Piano Ouvert was supported by the Fondation de France.

I found this to be an excellent way of experiencing silence as a group. Without the framing components of Cage's reputation and instructions, we achieved a constructive and positive type of silent listening that was often more interesting than what I achieved onstage. Acheson hears symphonic silences here: "That is one of the beauties of silence—that, when multiple people perform it at once, their silent voices are raised in unison, creating not cacophony, but symphony" (Acheson, 2008, p. 549). One could argue that this unison silence has little to do with performing, that listening or feeling is not performing.³⁵ Perhaps it is a listening exercise in the manner of *Deep Listening* (Oliveros, 2005). As with Oliveros's exercises, the communal ritual becomes a supporting framework for the silence. But I think that what we did was both listening and performing, knotted together. Moreover there was an ingredient of play, with its elements of exploration, learning, and risk. Sitting in a circle, we watched each other performing listening as we watched ourselves listening and as we performed silent listening for others.



Figure 62: a listening workshop (Hôpital Goüin, Clichy, France, 2014)

4.4 Updating the Checklist

Cage's composition nicely torpedoed classical preconceptions, even as it holds classical elements: three movements, a score, a pre-determined length, a formally-dressed performer, an expensive 19th-century instrument. Without being able to "see" the performance, the audience needs to find another way to "see" silence. Interpreting Cage's

³⁵ There was an interesting nuance: asking the group to listen was far less effective than asking them to *perform* a piece about listening. The act of listening seemed to be passive, whereas the act of performing suggested a goal to be accomplished, even a competitive edge to be seized, as in playing a game. Thus, emphasizing the performative was a means of getting more smoothly to the intentionalities of active listening. The listeners became performers, and vice-versa.

work as a non-classical piece—with the possibility of variations, covers, re-interpretations, and improvisations—seems now more fruitful to me. This research, including the analyses of the YouTube videos, has created multiple viewpoints from which I theorize the validity of many embodiments and styles. Reflecting on my research, I re-wrote my checklist:

A New Performance Checklist (2020)

- How/when does it start?
- How/when does it stop?
- How silent will/should/could it be?
- Can I create a favorable environment for the audience to listen, and to listen to themselves listening?
 1. What are the situated elements: architecture, seating, spatial layout; and how do they contribute to summoning silence?
 2. Does “real life” intervene?
- Is confrontation a goal? A side-effect? An accident?
- Is there a performer? And if so, why?
 1. Does a performer impose, summon, or describe silence?
 2. Is non-playing or not-playing appropriate?
- Cage removed the three movements in later versions of the composition. A choice should be made in advance about durations/ use of movements.
 1. Is time marked?
 2. Are the movements marked?
- Is the piece poetic, ironic, self-destructive, narrative, static, or...?
- How is it framed or bookmarked? (what happens before and after must be planned, for these bookends raise expectations, create tension and anticipation, recollect and recall events afterwards)
 1. Should the piece be described and situated for the audience via program notes or spoken word?
 2. Are expectations set up and thwarted, and how?

My performance goals have changed substantially. This checklist reflects a new interest in the audience experience, the imbalance between the performer's and receiver's experiences, and questions of confrontation, juxtaposition, and “real life” vs. performance. Further, Hernik and I discovered at the outset of my research that the start and stop of the piece held key values and that the manner of framing the piece often defined and created it.

Contemplating the potential applications of this revised checklist raises questions regarding future performance direction, especially when incorporating a piano. Can

innovative approaches, inspired by the YouTube videos, provide alternative performance “solutions”?

Possibilities include:

- utilization of deliberately anti-establishment or destructive materials (garbage, spray paint, breaking something/destroying value);
- integration of usually noisy items for exaggerating “thwarted” silence (for example, Dead Territory’s use of amplifiers and electric guitars);
- incorporation of social media comments as a means of un-silencing the audience (for example, a re-mix of Dead Territory’s video with their YouTube comment feed);
- confronting the audience by, for example, using extreme noise (heavy machinery or airhorns) combined with some method of silencing (earplugs, noise-canceling headphones);
- marking the movements in unexpected ways, such as changing the décor as Kim does;
- emphasizing the elements of classical music in Cage’s work: exaggerating traditional markers, like wearing a tuxedo, overdoing the lighting, or turning it into a Liberace-type experience, in which traditional classical markers are ironically overemphasized;
- creating a “pastorale” by shifting the audience setting from the hall to the natural environment. This could be accomplished by performing the artwork outdoors, as in Kim’s example, which could even reference the première, which took place in the forest setting of the partly open Maverick Hall.



Figure 63: Maverick Hall provided a pastoral setting for the première in 1952 (photo: Dion Ogust, 1996)

Using this new checklist, I performed 4'33" at a music festival in Burgundy in July 2021. My instruments for the three movements were a massive and heavy power drill, a tiny Chinese bell, and a large broom. These were deliberately chosen for their visual impact and their *potential* for noise-making. There was some laughter at my choice of instrumentation, but otherwise, the audience was relatively silent and patiently waiting for me to begin. I used a silent and hidden stopwatch to avoid visually reminding the audience of the elapsed or remaining time; although the work may be about time, I wanted to remove overt references to time from the stage. The drill was in standby mode,

producing a low electronic buzz; this blended in with the whirl of the theater's air-conditioning. I turned off the drill after the first movement, creating an unexpected experience of comparative silence.

The performance was successful in that it encouraged lively audience discussion and re-evaluation of what, for many, has become a cliché artwork, a relic of the previous century. Experiencing that the work could be refreshed by simple means was gratifying. The biggest lesson was that by partially removing the overt imposition of authority, shifting focus away from the performer, using elements of thwarting and real life, and heightening the audible, I created a more successful work, granting more freedom for audience listening.

(Re)considering My Own Practice

Central to my original checklist was how I could summon and impose silence. Now, my focus is more diffuse. Is the artwork about listening (e.g., *Hôpital Goüin*), about non-playing (e.g., *Marx*), about attention (e.g., *Leyin*), about "real life" (*Moscow*), or about time (e.g., *Tudor*)? Each performance brings a different approach. Some (Kahn) may still consider Cage's artwork a failure because it cannot answer questions about what it is or what it is about. However, my conclusion goes in the opposite direction: the case studies demonstrate that by opening so many options, 4'33" is still very much valid as we move further into the 21st century. It forces us to re-think the answers and reformulate the questions continually. There will be no absolute answer to what the composition is about nor how it should be performed. Choices will be necessary, and each performer must make those choices. The next performance by the same performer could result in entirely different choices. Like any great piece of performance art, and perhaps even more so than most, 4'33" defies a final prescription and analysis.

All of the YouTube performers deal with conventions and traditions, (implicitly) playing with the western ways of perceiving music as well as the frames to mark the edges of the performance. Through the different ways in which I have approached 4'33"—analyzing other performers, comparing waveforms, reading reflections on this piece by other scholars, and presenting the piece in different contexts—I have been able to question traditional performance paradigms, advocating a broader, more inclusive approach to understanding and experiencing Cage's work. The updated checklist for performing 4'33" emphasizes the artwork's fluidity and the performer's release of control, reflecting a journey from classical adherence to interpretations that challenge and expand the conceptual and literal borders of silence and art.

In classical performances like Chopin's ninth nocturne discussed in the previous chapter, or in the Beethoven sonata that will be discussed in the next chapter, there is a direct narrative relationship between describing and summoning through the embodiment of

silence. But to what extent are descriptive markers in Cage successful in this respect? My own experience of performing it demonstrates that descriptive markers are easier to implement than summoning ones. Cage himself tried (and failed) to summon silence in the Köln performance. Trifonov imposed silence, but it is uneasy and fraught with awkwardness. Trying to impose silence or summon it performatively does not always evoke audience engagement and can even lead to a distancing between listener and performer.

In all their richness, the YouTube performances show the pointlessness of restricting or codifying 4'33". Cage's piece has come full circle: from an avant-garde marginal work to a mainstream meme, to an annoyingly trite standard, and back again to the hip margins of the mainstream. My original checklist focused on preserving the performer's hegemony and the composer's authority. From my research, I conclude that this piece is infinitely resilient and can function on many levels. Even if it has lost the power to shock, my research illustrates the potential richness of this composition and its surprisingly future-proof endurance. Undoubtedly, my checklist will continue to evolve along with the artwork.

Chapter 5. Case Study: Visual Markers for Silences (Beethoven's opus 111)

My dissertation examines how performers engage with the multiple dimensions of musical silence. This chapter will focus on visual embodiments of silence in the concert hall. One particular example will be used as a case study, in which performers embody silence in a precisely notated classical composition.

What does performed silence *look* like onstage? Can the visual presentation of performed silence be stronger than the auditory? Comparisons in this chapter will illustrate a highly heterogeneous and heretofore undocumented vocabulary for performing silences visually.

The value of looking at silence embodiments is that performers can use multiple gestural vocabularies to enrich their interpretations, while composers may use the same vocabularies to enrich their scoring.

I have selected six well-known pianists and analyzed their performances as a way of understanding embodied silence in classical music: Sviatoslav Richter, Maurizio Pollini, Maria João Pires, Evgeny Kissin, Katie Mahan, and Daniil Trifonov. The selected composition is Beethoven's last piano sonata, opus 111.

I could have chosen another classical composer or another silence from another sonata. I state that this might have given similar results in terms of illustrating embodied silences. I have focused very narrowly on the first four bars of the sonata. But this by no means covers all the compelling silences of the piece. I could have chosen the in-

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.

Performed Silence in music is a rest made visible or audible; the impression of silence created in a performance by the performer.

Rests are written notations that indicate silence, stillness, absence, pulsation, breathing, or non-playing.

Eloquent silence communicates from the performer to the listener; non-eloquent silence might have a functional role, but does not have rhetorical or communicative value in the performance.

Structural silences emphasize the structure of the composition.

Markers are signals used to shift attention and thus *impose* silence, *summon* silence, or *shape* the perception of silence. Markers can also include audience rituals, architectural elements, and other sensory cues which 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 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.

between silence before the second movement, which suggests a Cagean stasis, or the silence at the end of this sonata, which calls forth “a silence [...] more important than the sound that preceded it” (Brendel, 1976, p. 53). The point is not so much the particular silence chosen, but rather its affordances as a vehicle for examining diverse embodiments.

5.1 The Sonata

Opus 111 is a technically demanding work with a strong history, performance practice, and even a mythology. The pianistic challenge has inspired its own literature and legends, most notably through *Doctor Faustus*, in which Thomas Mann describes a performance of this sonata by a fictional pianist.³⁶

Boom, boom—vroom, vroom—throom, throom—he struck the grimly vehement opening accents of the first movement, and in a high falsetto he sang along with passages of melodic sweetness, which, like delicate glimpses of light, now and then illuminate the storm-tossed skies of the piece. (Mann, 1947, p. 58)

For Mann, the work seems to begin in grimly vehement conflict, heightening the eloquent possibilities of the rests around the fanfares. This striking, storm-tossed realm of gestural activity will distinguish the Beethoven examples starkly from the static, non-narrative poses and attitudes of the Cage examples.

Despite the dramatic pauses that open the first movement of the Beethoven, most of the sonata is one long continuous phrase. It is a composition with very few rests, thus making the ones that exist all the more noteworthy. Those initial rests are framed by dramatically powerful notes. The first two short rests serve as gasps during the fanfares. The fanfares themselves are framed by longer rests, which offer a rich variety of interpretations.

³⁶ Mann seems to have ignored the silences in opus 111, though there are a great many powerful spoken silences in his novel. He does evoke one musical silence (alas, not Beethoven's) as a “fearful collective silence at the start of a phrase” (Mann, 1947, p. 513).



Figure 64: first four bars of Beethoven's opus 111 piano sonata, illustrating the two fanfares (Edition Peters, 1974)

Punctuated by the rests, the two first lines separate clearly into two fanfares. From a functional point of view, perhaps the short silences during each fanfare invite the listener to experience retrospective understanding, a type of backward hearing. Or they might be punctuation, miniature commas indicating breathlessness. The rests after the rising arpeggios might also indicate stopping, finality, a structural marker for the audience's understanding of the form. They could be merely a temporary interruption or an anticipative signal to restart the sonata in a different key. Depending on the assumed meaning, pianists will interpret them differently. However, as music philosopher Jerrold Levinson discusses, there is no direct and unambiguous relation between the way performers understand a piece and the way they perform it (Levinson, 1993). In other words, the same meaning can lead to different interpretations, while the same interpretation can be grounded on different analyses of a piece. And each pianist *can and will* interpret the silences in a musical work differently, also because the notation of the rests remains simple and unidimensional, as discussed in Chapter 2.

As a student, I was barely aware of this potential richness. I did not pay any attention to these rests, and I certainly did look for the eloquence of silences. I tended to rush through the rests to get to the exciting notes in the next fanfare of opus 111. As I began performing the work in concerts, and as my knowledge of the score improved, I started to hear the power of the silences, particularly after the arpeggi. I discovered that they could be used to gauge the acoustics in the hall; they offered a listening opportunity for the performer. This insight was the moment when I first began to experiment with performed silence.

Perhaps Beethoven even considered this possibility. Note the discrepancy in the score between the notation of the rests after the arpeggi and the pedal release: according to Beethoven's manuscript (see figure 65) and the published score (see figure 64), the pedal is released an eighth note later than the hands at 1F and 2F. This creates ambiguity: Beethoven's pedal-off is deliberately notated *during* a rest. Does he want the pianist to sustain the notes partially through the rest? Does he want to suggest a diminuendo of the post-arpeggio chord? In a large concert hall, this effect would occur naturally without the pedal: the acoustic reverberation would gradually diminish, as Beethoven would have known. Yet, in a drier environment, the pedal might be necessary. I see this potentially as permission to explore the acoustic possibilities of the rest, an invitation to present an eloquent silence that could be either connective or dis-connective. Separative rests ("nots") offer heightened articulation for the structure of the sonata, creating interruptions and divisions. Conversely, connective rests ("knots") tie phrases or notes together, continuing the musical line and uniting disparate elements. Connective rests can also articulate the structure, but they do so more subtly.

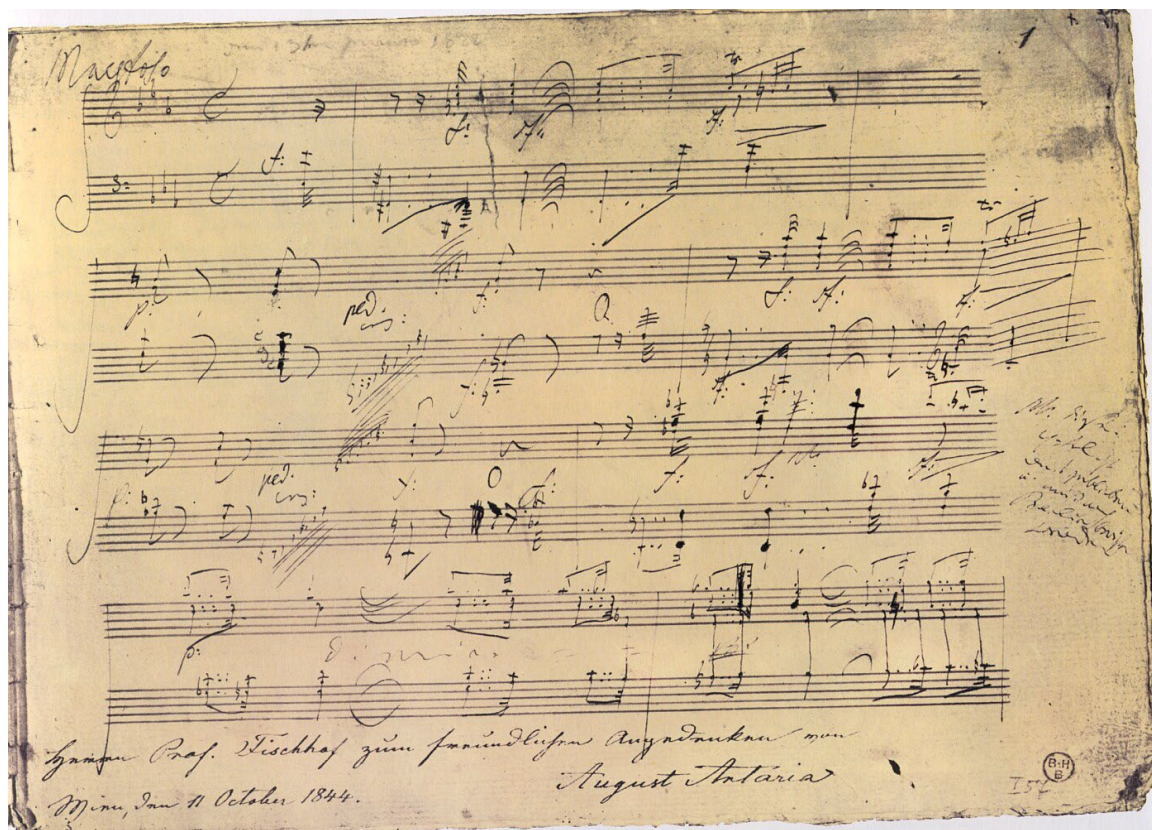


Figure 65: Beethoven's autograph manuscript from 1844, showing the opening bars of opus 111 (Beethoven-Haus Bonn)

My youthful exploration of the acoustic via the rests has precedents. Listening to the reflections of the architecture is indeed one motivation for performing silence, one that relates to the lengthy spaces of *ma* in the [pauses of some of Morton Feldman's pieces](#), or to compositions of [John Adams](#) or [Arvo Pärt](#) or performances of Alvin Lucier that explore physical space through sound (and often silences).

I separated the score graphically to re-understand and re-interpret the notation. The left version is *without the rests*, and the right version is *without the notes*.

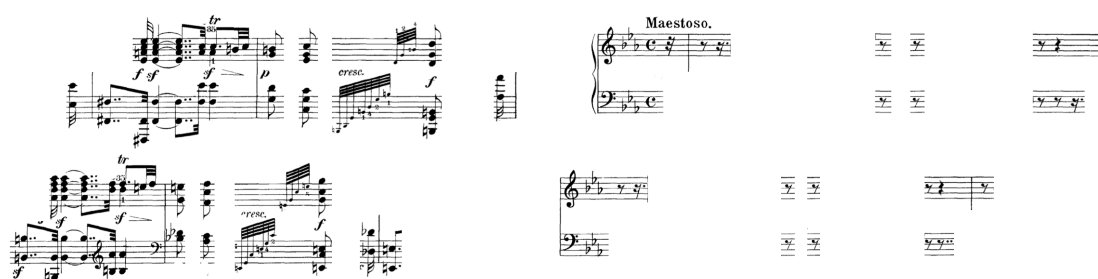


Figure 3: notes versus rests in the first four bars of opus 111

On the printed page, the rests have a clear, unambiguous performance instruction, namely to refrain from pushing any key for the specified duration. As discussed in Chapter 2, the written rests contain very little further information.

In performance, the rules change: the rests gain communicative power (Barthes, 2005, p. 26) through performed embodiments.³⁷ The performers whom I will analyze in more detail below all use gestural markers to create silence captions.

Indeed, the fanfares of *dramatic notes* are alternated in their performance with embodiments of even more *dramatic rests*. The constant presence of embodied markers in the performances of these six pianists suggests that context and captions are essential.³⁸ As the examples may show, the notated rests rarely lead to silence; they are often used as a permission to depart from the score: to leave the keyboard, to go away from the keys. The rests offer remarkable performative freedom: to perform silence, to dramatize silence, to extend the resonance, or (in some cases) to avoid silence entirely. Indeed, what the analysis of these examples may reveal is how wide the gap is between the simple rests on the page and the incredibly diverse and eloquent embodiments illustrated onstage.

³⁷ The embodied silences can also give power to the notes.

³⁸ See my video experimentation, [Respect the Rest](#), which I created by remixing rests extracted from these opus 111 videos. (<https://www.researchcatalogue.net/view/1712958/2927804#tool-2927818>)

In what follows, I intend to examine neither the intentions of the composer nor the composition itself, but rather the contemporary visual embodiments of notated silences. These will be illustrated by a group of six star pianists found on YouTube. In these videos, viewers experience Beethoven's rests through many influential markers: the acoustics, the size and type of the concert hall, the décor, the performer's clothing, the program notes or lack thereof, the audience's attentiveness, the cultural rituals surrounding the performance, and the type of piano. These markers affect the performance and the experience of silences (and notes), and all deserve (and have received) serious coverage and discussion in my work and elsewhere.³⁹ But I will mostly exclude them from the present chapter so as to focus on visible embodied markers.

Like any instrument, the piano extends the performer's body. But a grand piano is a heavy machine enclosed in a massive wooden box.⁴⁰ Unlike a violin or flute, the external body of the instrument offers no moving extension of the performer's body. As Cobussen mentions, it can also provide resistance: "This struggle, this resistance, this strife, is mainly of a physical nature, deriving from the instrument's materiality and its interaction with the musician's flesh" (Cobussen, 2017, p. 122). Many of the archive examples that were composed for me engage the question of resistance metaphorically.⁴¹

Moreover, classical conventions impose gestural limitations. No classical pianist would attack the keys with their feet or butt, even though rock 'n roll pianist Jerry Lee Lewis became famous for just such embodiments.

So, the pianist's behavior and embodiment of silence are limited by the socio-cultural rituals of the concert hall, instrumental resistance, and the need to keep both hands on the keyboard most of the time.

³⁹ See (Livingston, forthcoming 2025) on audience silence; see (Smithuijsen, 2001) on audience ritual; see (Livingston, 2024) on room tone and concert halls.

⁴⁰ The modern piano was not yet invented in Beethoven's time. He most probably composed opus 111 on a Broadwood piano that was donated by the British manufacturer to him in 1817. It was a big instrument and state-of-the-art for the era. But it did not have the stability, cast-iron frame, escapement mechanism, or power of a modern Steinway.

⁴¹ Some do so quite literally, notably by using the wooden case in Kourliandski's *Surface* or the fallboard in Nicoli's *No Entry/No Exit* to create impossible dialogues between performer and instrument. Other works such as Hinton's *Piece of Cake* add external elements (handcuffs) to create artificial or symbolic resistances.

Pianists perform silence via embodiments, which can be gestures of hands, arms, legs, backs, and necks; facial movements, grimaces, frowns, closed eyes; shakes of the head or hair tossing; and many other gestures, small and large.

To better understand the repeated gestures of the pianists I have analyzed, I wanted to *re-repeat* them in a process of reflective imitation. I attempted to duplicate the most remarkable embodiments, playing the same phrasing, copying the same gestures, and filming myself again and again in an exercise of learning through reflective imitation. Each of the examples will end with a video in which I learn at the piano from the pianist's style, embodiments, and physicality.

This method contains both benefits and conflicts. The major conflict is one of bias. In order to effectively imitate a conservatory-trained concert pianist, one must have undergone similar training oneself over many years (Lüneburg, 2023; Lüneburg & Ciciliani, 2021). A dispassionate outside perspective is thus almost impossible to achieve. A second flaw is discipline. A dancer or actor will be well-schooled in imitation, especially gestural imitation, whereas concert pianists are discouraged from imitation starting at the earliest age. I have had no training in imitation as a bodily method, a gap that will be abundantly clear to those who watch my videos.

Yet the benefits of the method are also clear and do justify the inclusion of my exploratory videos. Aside from documenting my working process, one which evolves directly from and through my practice, these videos offer discoveries. Speaking of a similarly personal process of understanding through (re-)interpretation, pianist and scholar Anna Scott writes:

This understanding is a rich one however, in that performance elements are perceived, deciphered, translated, and become linked to one another, through one's own mind and body as a performer. What is at first only sensed becomes clumsily enacted: an experience that begets enhanced understanding, more focused movements, and so on. (Scott, 2014, p. 183)

The personal learning involved in re-repeating (Schechner, 2013), re-enactment (Lüneburg, 2023), or reflective imitation does not enable me to become Richter, but with each enactment, however clumsy, I learn, sense, and understand slightly more from Richter through a tactile and audible embodiment.

Watching myself working through these videos as if I were another body and another pianist taught me a great deal. This embodiment of performers who were already themselves embodying something (whether the "lonely prince," Beethoven, their stage persona, or their emotional idea of the music) created an overlay of fictionalizations,

sometimes highlighting the quirks or eccentricities of the performers and other times illuminating new ideas about performing. By “re-repeating” these performed silences, I began to notice that the visual seemed to have weight, sometimes even outweighing the audible. I also understood better how some pianists made the silences separative, and others used them to knot together the two fanfares that open the sonata.

[...] the communicative rest almost always has more than one potential function, which the performer is at liberty to reveal or create. (Potter, 2017, p. 168)

The rests offer a creative and performative scope to the performers that can be interpreted as a permission from the composer, a permission that is not easily granted when performing the notes: the pianists whom I have studied in detail are at liberty to make the silences visible. Their silence gestures form a tacit vocabulary that becomes part of the music communicated to the audience. These performers have adopted a range of stylized and often wild gestures to mark the opening silences. Yet their embodiments mostly remain undocumented in studies of this composition: transgressive, messy, fleshy, and bodily gestures are hiding in plain sight.

5.2 Examples: Picturing Silence Through Embodiments

As with *Ballet mécanique* and *4'33"*, I have a strong affinity with opus 111. I first learned it as a university student and have performed it dozens of times since: onstage, in living rooms, in practice rooms, in churches, in auditions, and in concert halls. I am intimately familiar with every note and every rest. I understand (and will try to show) how the complexities of the notes influence the performance of the silences (and vice versa).

By applying the embodied analysis techniques described above, I realize I am creating the potential for historical inaccuracies. However, this is a study of modern interpretations of a specific piece of music and what they can tell us about performed silence at the present moment in time. As within the Cage chapter, the analysis is not about what the music was, nor what it should be, but about what the music has become and can become.⁴²

The six performers are chosen for the variety of silences they embody. The YouTube videos of their performances are all recorded in concert halls, mostly for an audience, in full concert attire, with theatrical lighting, traditional architecture, and a frontal, audience-view camera. The audience is generally not visible, and the hall is reduced to a decorative

⁴² In Chapter 4 I took a similar approach to Cage's *4'33"* by focusing on current performance techniques and their recent evolutions rather than a historical performance practice.

background. I have deliberately watched them all on a screen, granting them a consistent frame to facilitate comparisons.



Figure 66: Designation of the rests—For clarity, the two fanfares are referred to as **1** and **2**. Within each fanfare, the short eighth-note rests are labeled **a** and **b**, while the longer rests between the fanfares are labeled **F**. Hence, the six rests in order are: **1a, 1b, 1F; 2a, 2b, 2F**.

Example 1: Sviatoslav Richter

MARKERS: visible and gestural: reverse boxer gesture, left-hand conducting, upright posture (imposing silence); contextual markers: Mann texts; ritual markers: highly stylized performance

RESTS: precise (but also precisely shortened), interruptive, structural

The first performance I analyzed and re-repeated was Sviatoslav Richter's 1975 performance in Moscow. Richter imposes silences that act as interruptive and structural elements, illustrated as precise and aggressive pauses. They are interruptive in the sense that they arrive suddenly, dramatically, and surprisingly. They are structural in that they clearly delineate the form of Beethoven's composition. Richter's interpretation is unsettling, with his left hand conducting and thereby creating visual markers for both the notes and the silences. After the fanfares, he rips his hands off the piano, imposing silence precisely with the score (1F and 2F), and curls his fingers up during the rests like a reverse-action boxer.

Richter: Moscow (1975)

First fanfare bodily exaggerated, but the second is calmer. Richter adheres very strictly to the score re note lengths, precision tempi. But the long rests are deliberately shortened.

hands off (fast pullback)

skip 1/16th beat

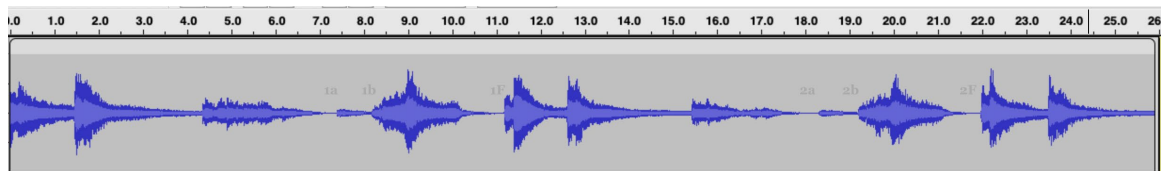
pedaling off

visible marker (abrupt and violent pullback of fists) contrasts with audible diminuendo and pedaling

skip 1/16th beat

► RICHTER PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937208>

Richter is strict about following the score. Yet the exceptions are the most interesting part. After the first fanfare, he cannot withdraw his hands fast enough: in an abrupt and violent gesture, the curled fingers turn into fists in a gesture of surprise, as if he has been caught off guard by the violence of the music, or as if the keys were hot, on fire. But—and this is what makes it rich and ambiguous—he still has the pedal down at F1, just as Beethoven wrote it. This pedaling fits with Richter's famous devotion to the text. Yet the contrast between what we see (a violent withdrawal) and what we hear (a soft diminuendo) is bizarre and not what Beethoven notated. Further contrast between what can be seen and heard is provided by his curtailing of the rests by exactly a sixteenth beat. We hear the rests loudly and clearly, but they are cut off *in medias res* as if he had deliberately misread the score. Is he afraid of the rests between the phrases? Why does he trim them so precisely?



Reviews of Richter's performances on other occasions offer varied perspectives. Geffen (1975) praises Richter for his tremendous energy and drive, suggesting that his willingness to discard caution results in a brilliant and exciting rendition. Moore (2013) commends Richter for his fierce intensity and whirlwind tempo, particularly highlighting the clarity and firmness of his touch. A review from *Gramophone* magazine (1998) expresses

disappointment, noting that the performance started uneasily with “clipped rests” and slight imperfections in sonority. These clipped rests are silences that, in my analysis, contain a “not,” a very visible withdrawal away from the piano, away from playing. This embodiment of distancing—a withdrawal from the instrument—also serves to make clear the structure of the piece.

Distler (1998), writing for *Classics Today*, lauds Richter’s “sizzling” approach to the opening movement in a re-release of this exact concert (Moscow, 1975), noting his tempestuous tempo and his bold engagement. Perhaps this tempestuous approach is Richter’s attempted embodiment of Beethoven.

He [Beethoven] was the lonely prince over a ghostly realm, from which came emanations evoking only a strange shudder in even the most well-disposed of his contemporaries, terrifying messages to which they could have reconciled themselves only at rare, exceptional moments. (Mann, 1947, p. 57)

Richter, whose conception of opus 111 was inseparable from Mann’s text,⁴³ employs a rigid gestural vocabulary to embody the lonely prince in the ghostly realm, attempting to make the audience shudder with him. His tensely embodied discrepancies create a “ghostly” non-correspondence between what is visible and what is audible.

Here is what I learned from embodying Richter’s gestures:

► LEARNING FROM RICHTER: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937229>

Example 2: Maurizio Pollini

MARKERS: visible: reserved, magisterial posture, but barely any markers for silence; audible: rushing

RESTS: rushed or accentuated (but hardly any silences)

I analyzed two performances of the sonata by Maurizio Pollini, one from the mid-1990s and another from 1998. Pollini approaches the sonata with a reserved attitude and a magisterial posture—his silences, though few, are accentuated. Pollini’s interpretation appears to bypass Beethoven’s notated rests, rushing the narration of the notes forward without giving the listener time to process the accelerating fanfares, and thus challenging the notation of the rests even more so than Richter does. Pollini’s magnetic attraction to the keys muddies notational fidelity in favor of artistic expression. He is still playing the

⁴³ Like his teacher, the legendary Ukrainian pianist Heinrich Neuhaus, Richter was obsessed with the writings of Thomas Mann, and particularly his evocations of opus 111. “Marked out on the piano, were his daily instructions: ‘Brush teeth thoroughly every day, read some Proust and Thomas Mann every day [...]’ “ (Phillips, 1999).

notes during the rests, and overtly so. He does not want to interrupt the notes or imply any space between them. The fanfares are thus interconnected by his (missing) silences, becoming one knotted multiple fanfare.

Pollini's interpretation overrides Beethoven's notation so that there are no traces of the rests except for a gasp at 2F; he pushes forward.⁴⁴ Meanwhile, he keeps his foot firmly on the pedal and his hands on the keys. The lack of embodied silences does not mean that his playing is not eloquent. But it is emphatically a situation in which the playing, not the rest, is eloquent. He does not perform the silences, and he does not indicate that silence is happening. The tiny gasps (at the end of 2F in the first performance and at the end of 1F in the second example) seem annoyed and perfunctory. There are no visual markers for silence. However, the gasps could be considered audible markers of silence.

Pollini: Japan, mid 1990's

The image shows a musical score for Beethoven's Opus 111, first movement, with annotations for Pollini's performance. The score is in C major, 3/4 time, and is marked 'Maestoso'. The annotations include:

- Top system:**
 - Handwritten 'f' and 'fff' dynamic markings.
 - Handwritten 'mp' and 'cresc.' markings.
 - Handwritten '1F' and '1/16th' markings.
 - Handwritten 'LH, as notated' and 'RH, as notated' markings.
 - Handwritten 'hands on keys' and 'pedal holds' markings.
 - Handwritten 'bar is 1/16 shorter' with an arrow pointing to the right.
- Bottom system:**
 - Handwritten 'tr' (trill) and 'cresc.' markings.
 - Handwritten '2a' and '2b' markings.
 - Handwritten 'the first (almost) rest that he observes is more of a short comma' with an arrow pointing to a rest.
 - Handwritten 'pedal holds till last minute; hands hover on keys; there is no rest' with an arrow pointing to the end of the piece.

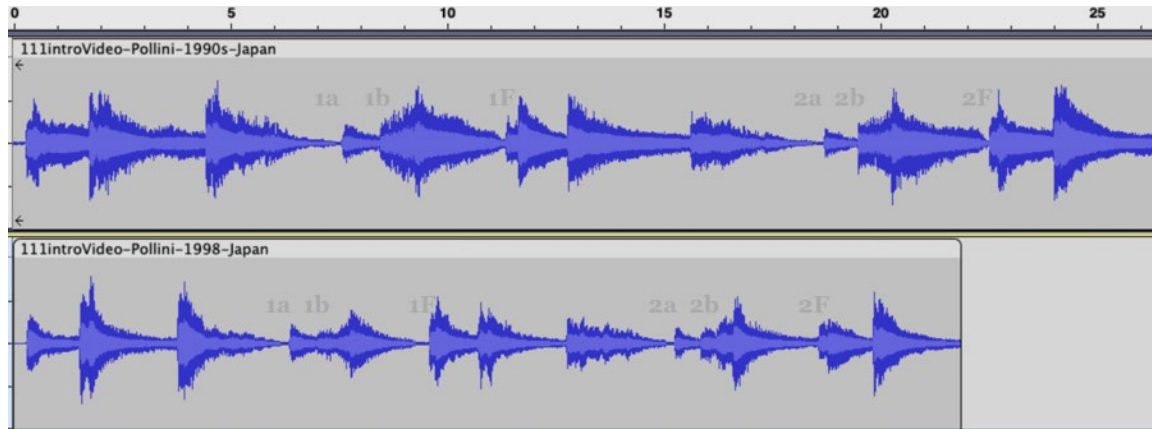
URL: <https://youtu.be/Hbn71XKK7Y?t=2212>

▶ POLLINI PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937235>

This first performance is not as rushed as the recent version, but he still curtails the 1F rest after the arpeggio from three eighths to two eighths. The pedal stays down, and his hands stay on the keys. The second fanfare brings in a little air (a manner of building tension) at 2b, and then he takes the pedal off, like a grace note of silence, at 2F just before the third fanfare begins. Gesturally, the movements seem minimized, reduced to their simplest form. His hands rise briefly from the keyboard at the end of the rest in the last sixteenth note, but only as a gesture to attack the following chords. Again, there is barely a hint of

⁴⁴ The second performance (Japan, 1998) is even faster than the first, pushing relentlessly forward and omitting the silences entirely. It is twice as fast as Mahan's version.

silence, a miniature accentuation. As a consequence, the music does not breathe, which creates a high degree of tension.



Pollini: Japan, 1998

Maestoso.

Right Hand!

ff

tr

f

mp

1a

1b

cresc.

f

1F

rest is cut so that bar is almost 1/8th shorter

hands on keys

pedal holds

holds keys down

pedal holds till last minute; hands hover on keys; there is a tiny gasp before the 2nd fanfare.

Maurizio Pollini, in this performance, glosses over the rests – there is no chance to breathe until the end of the page. The notes are irregular; the rests are rushed. He has no time for them.

URL: https://www.youtube.com/watch?v=MTbv_YKnZ7E

► POLLINI 1998: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937231>

According to a review in *Musicweb* (Greenbank, 2020), Pollini “throws caution to the wind with an opening movement of tremendous energy and drive.” Each rest length is curtailed by about one-third, making for a very “restless” introduction. Pollini has created a unique situation (amongst these examples at least) in which the rests are played as sound, as notes, as a sustaining. His silences are not embodied by gesture; they are marked by sound. While the visual is important to him, the rests are not. As a performer, he has chosen for a knot so densely and thickly intertwined that silence is barely present. It is difficult to perceive his rests as silences.

In Chapter 1, I tried to refute the idea that silence is *nothing*. For me, silence is *something*. But what if Pollini has a different viewpoint? Is silence a *nothing* for him to avoid? This raises questions about the role of silence for classical pianists: Is it seen as expendable? Does it detract from the more appealing notes, or is it feared because it might lead to audience disengagement? This idea of avoiding silence—akin to a musical horror vacui—suggests that performers like Pollini deliberately choose to focus on the notes and to gloss over the silences. Silence could potentially represent the failures of memory loss or missed notes. But it is also possible that Pollini is avoiding the rests to increase the sense of risk and excitement.

► LEARNING FROM POLLINI: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937232>

Example 3: Maria João Pires

MARKERS: visible and audible: poise, but minimal markers summon silence

RESTS: connective and separative

Maria João Pires's performance is poised and contains minimal visual markers, treating silences as connective elements within a highly rigorous performance. The direct correlation between visible actions and audible sounds underscores a nuanced understanding of silence as an integral, though understated, component of musical expression. Her performance is very similar—in length and shortness of rests—to Pollini's, yet the effect is completely different, for she summons silence where he overrides it. This is a perfect example of performed silences which are both a tectonic division (*diæresis*) and a synthesis.

Pires: Sacile (2016)

Maria Joao Pires is extremely poised, and precise. This is a clean performance, in which the performer's persona is reserved.

Maestoso.

Split Hands

precision on/off

rest is 1/32 shorter

hands off, preparing

ff

pedal holds

pedal holds till last minute; hands hover just over keyboard; rest is turned into an upbeat breath, a gasp.

2a 2b

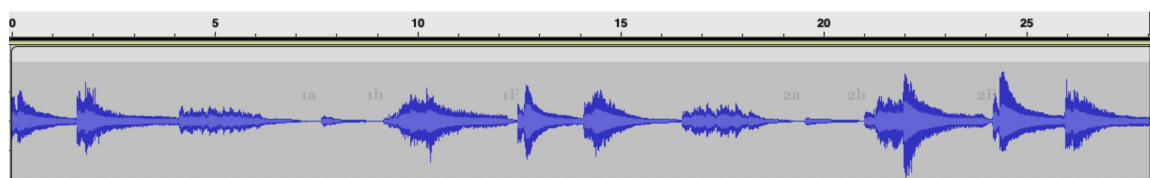
cresc.

2F

pedal holds

► PIRES PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937210>

Pires offers a direct correlation between the visible and the audible, meaning that what her body is doing is what is sounding. Her performative body suggests that form follows function. I experience none of the overloaded romanticism that I find in some of the other performances. One reviewer wrote: “The first movement lacked a certain roughness” (Sava-Segal, 2021). Indeed, it does lack roughness because she plays the text quite seriously. Her smooth fanfares are about the precise notes, not the drama, downplaying the tension between the phrases. She understates the silences between the fanfares, which are reduced (hands on keys, then pedal down) to sixteenth rests, really just gasping breaths before the next phrase, which itself arrives one sixteenth beat too soon, shortening the rest even further, much as Pollini does.



The silences in her performance have more impact than in Pollini's, yet they are barely longer. Where Pollini rushes through both the notes and the rests, Pires keeps strict time during the notes. Hence, her arrival at each rest is more measured and clearer, even if she keeps her hands on the keys. Her use of a measured pulse in the notes informs the audience's perception of the silences, lending them apparent clarity, although they are hardly audible as silences.

► LEARNING FROM PIRES: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937209>

Example 4: Evgeny Kissin

MARKERS: highly visible: extravagant appearance, aggressive gestures, expressive, descriptive, enacting exceptionality

RESTS: interruptive; but both separative and connective

Evgeny Kissin enacts wildly extravagant and aggressive markers, producing silences that are both interruptive and expressive. His performance is marked by a romantic exaggeration of gesture and pedaling, transforming rests into moments of theatrical suspense and anticipation. Kissin offers an interpretation heavy on rubato, pedal, and oversized gesture. The wildness of his gestures seems to make the silences less abstract and more narrative than those of the preceding pianists.

At the Verbier Festival (first example), Kissin places two mini rests at 1a and 1b and then holds the arpeggiated chord with the pedal through to the next note. So there is no 1F silence at all. Just after the arpeggiated fanfare, Kissin curls his arms up during 1F in an elaborate spiral as if winding up a spring. It is fascinating to watch and a little disturbing.

I have named this highly distinctive gesture “the dentist,” as Kissin seems to be extracting a rather painful tooth. The sound continues during the rests due to the pedaling, but he is indicating something different than during the chords or arpeggio. Kissin implements a violent gestural storytelling of the rests, describing silence and creating embodiments which contrasts starkly with the way he plays the notes.

How many other pianists give those grand, annunciatory chords that open the two-movement piece the finely judged weight he brought to them? (von Rhein, 2013)

But other reviews are troubled by his lack of silence:

[...] the larger intellectual explorations of Beethoven’s writing eluded him [...] The opening movement rushed too many fences, allowed too few moments of silence. (Kettle, 2012)

And Distler feels that the gesturing is overwrought:

Some of his expressive pointing, to be sure, comes close to loosening the music’s cumulative grip, in contrast to Pollini’s taut reserve. (Distler, 2017)

Kissin’s “expressive pointing,” his gestures of the coiled spring or the dentist about to pull, connote a coming onslaught of notes and create suspense, though there are very few “moments of silence” indeed. Through his gestures, Kissin is speaking to us, about energy, tension, about what is to come in his version of the sonata. These silences are not audible but visible.

Kissin: Verbier (2016)

The image displays a musical score for the first movement of Beethoven's Opus 111, marked *Maestoso*. The score is annotated with various performance instructions and visual markers. Key annotations include:

- Right Hand:** Labeled at the beginning of the first system.
- Left Hand:** Labeled at the beginning of the second system.
- Dynamic markings:** *f* (forte), *sf* (sforzando), *p* (piano), and *cresc.* (crescendo).
- Ornamentation:** *tr* (trill) is marked above several notes.
- Visual Markers:** Yellow arrows and asterisks point to specific moments in the score, indicating areas of focus or interest.
- Video Stills:** Two small video stills are included. The top still shows a close-up of the right hand with the annotation "The Tiger" and "hands going monkey wre". The bottom still shows a wider view of the pianist with the annotation "Hand does the dentist".
- Textual Annotations:** "pedal holds" is written near the bottom right of the first system. "1a", "1b", "2a", and "2b" are written near the bottom of the second system.

URL: <https://www.youtube.com/watch?v=8AQ9hZTpwM>

However, four years previously, at a concert in Armenia, his interpretation had been very different. In this earlier video, he performs the introduction with one little rest, one longer rest (if 1a is a surprise, then 2a is a question), and a pedal hold for the top of the arpeggio; it seems less stressed, with more of a driving forward motion. There are many audio markers at his performance: the hall is swirling with small sounds, such as the rustle of the audience, whispering, the ventilation system, and the creak of the stage, which themselves provide a counterpoint to the pianist's own loud breathing. The main audible silence is his first gasp at 1a. The long rest after the arpeggio is not silent at all; it is very quick, as if he wanted to connect the two fanfares together (somewhat like Pollini).

Kissin: Yerevan (2012)

Or is he just rushing through because he doesn't care? It's not evident...

like panic breathing, these abrupt silences increase the tension.

Maestoso.

Right Hand!

f sf *f* *p* 1a 1b *cresc.* *f*

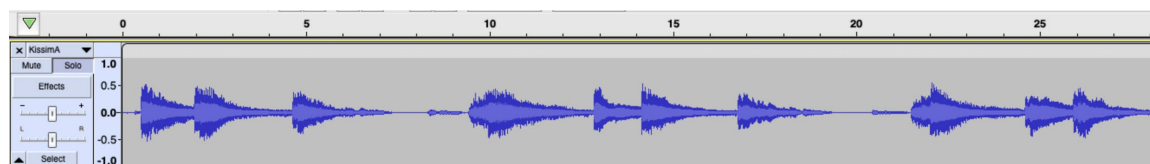
Kissin appears less stressed in this performance, has more of a driving forward motion. The main silence is the first 8th note rest.

2a 2b *cresc.* *f*

URL: <https://www.youtube.com/watch?v=bW0ex3d-k4>

► KISSIN PERFORMANCE YEREVAN: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937213>

For comparison, I also listened to his 2017 recording for Deutsche Grammophon: the first rest (1a) gains even more prominence, and there are unexpected accents on upbeats—as if the other silences are squeezed out. Kissin seems to be using the rests to amplify the tonality of the piece. His extremely stretched rest at 1a is an amplification of the dominant tension. In this recording, the audience cannot see Kissin's wild gesturing, which offers an important test of my visual analysis, because it may challenge some of the functions of visible communication of the rests (especially when they are interpreted with temporal freedom). Yet it seems to me that I do *hear* his gestures, even without seeing them. The accented upbeats on the CD seem to result from a misunderstanding of the silences that precede them, suggesting that Kissin's gestures may be hiding a lack of rigor or understanding. But perhaps the strange accentuations are not the point; it is possible that Kissin's *gestures* are the point: Kissin's performance is then far more about Kissin than about Beethoven.



► KISSIN AUDIO RECORDING: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2939247>

For classical conservatory students, rests are often not substance, content, or emotion. They are absence, problem, even defect—as if the composer forgot to write something there. Unlike singers, young pianists do not look forward to the rests. Kissin might also have a fear of stillness, but he expresses it very differently than Pollini. He uses excessively baroque gestures to fill every rest, indicating a possible discomfort with the absence that silence could present in a performance. But his use of descriptive gestures creates powerful markers that do instill an impression of silence in the audience. Pollini has the audience focus on the sound, not the separations, while Kissin gives the listener a narrated, embodied experience of silence.

Example 5: Katie Mahan

MARKERS: visible: large, swooping, balletic, expressive gestures (summoning silence); audible: long rests

RESTS: separative, stretched

Katie Mahan utilizes large, swooping, balletic gestures with silences that are both separative and expressive. Her deliberate extension of rests beyond their notated length invites a reconsideration of silence as a space for interpretative freedom and personal expression.

The silences are considered but un-timed or even out of time. Her silence after the first fanfare is a full quarter note longer than notated. She is the only pianist in this study who lengthens rather than shortens this silence. She delves deeply into the silences and conducts them with slow-motion bravado.

Comparing Richter and Mahan, their different use of dynamics and timing gives another quality to the silences. So here audible markers are important in communicating eloquence. Richter follows Beethoven's dynamics rather precisely, while Mahan gives a startling accent to the top of the arpeggio. It is jarring, attention-grabbing, and surely intended, for it launches the longest silence in this case study: at 1F, between the two fanfares, Mahan's silence is a stunning 2.005 seconds, three times as long as Richter's breath, and twenty times as long as Pires's brief articulation. She imposes silence, summons it, and describes it, all at once, in a seemingly endless gesticulation.

Mahan: Salzburg (2019)

Mahan embodies silence with extravagant gestures

Maestoso.

f sf

tr

meno mosso

sf

hands off (flashy pullback)

rest is at least 1/8 longer

p 1a 1b *cresc.*

f

pedal slowly

2a 2b *cresc.*

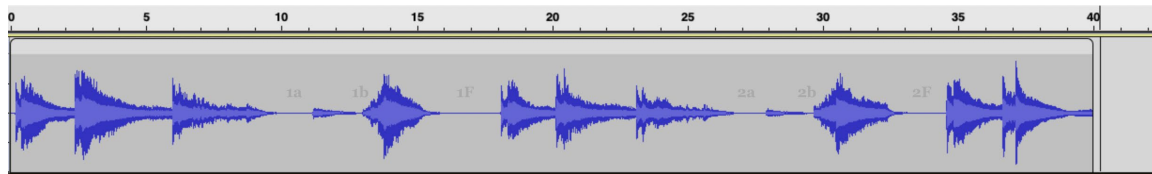
held back, extra 1/4 beat

dreamy look, hands pullback fast onto lap, then left arm circles around slowly before attack

pedal slowly

► MAHAN PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937218>

Her silences are wild, while her notes are careful and discreet. This interpretation contrasts with Pollini's performance, in which the notes are wild (and occasionally wrong), and the silences are discreetly omitted.



Mahan's performance suggests a larger affordance for silences that can be extended beyond Beethoven. The rests are an occasion for her to break out of the keyboard stance and to let her arms dance. Of all the pianists here, her performances of silence most resemble the opportunities afforded by the Cagean case studies, as she is self-consciously illustrating long silences with attitudes or poses (see Chapter 4). In terms of my own imitative fidelity, I found her grander gestures difficult to copy, as she goes far beyond the Beethoven score, exploring the silences with improvisatory bodily gestures and (sometimes) bodily stillness.

The audience has extra time to appreciate the silences and the notes in between. Through the choreography of her arms, she subverts the conventional hierarchy: here, the silences are paramount, and the notes facilitate their emergence. Her gestural ballet of silence becomes a communicative channel for moments of understanding and comprehension.

► LEARNING FROM MAHAN: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937216>

Example 6: Daniil Trifonov

MARKERS: visible: head thrown back, contorted face, theatrical, expressive; audible: breathing (summoned silences)

RESTS: separative, structural

Daniil Trifonov's embodiments may be contorted, actually excessively so, but his performance is of the utmost clarity and precision, respecting Beethoven's dynamics and giving the silences a separative "not," an expressive and structural character. His performance is distinguished by the quietness of his silences, ending sometimes with loud breaths that herald the fanfares and emphasize the musical structure while enhancing the eloquence of the silences. Rests 1a and 2a are interpreted as short breaths (contrasting with Richter's legato version), articulated by a unique, subtle staccato release only in the left hand. Trifonov hunches completely over during these moments. Then, straightening his back during the arpeggio, he snaps his head up at the top chord, preparing the silence, as if summoning it from the depths of his soul.

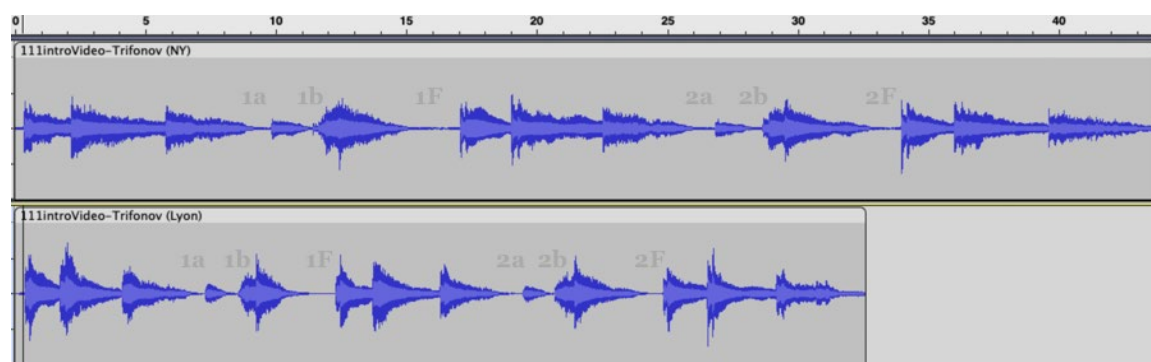


Figure 67: comparison of Trifonov waveforms

It is a performance that is wonderful to listen to and difficult to watch. The pauses are apparent agony—his contorted face is theatrically Shakespearean, dramatically ugly. Particularly unique to this interpretation is his use of breathing in F1 as a marker for the descending 7th chords of the next fanfare. His sharp intake of breath (especially in the New York concert) creates an audible upbeat. But Beethoven has already written the upbeat as notes. So the breath at the end of bar 2 is *an upbeat to an upbeat*. This double upbeat seems unique to Trifonov and recalls the double prelude performed by Dead Territory in their [cover of 4'33"](#): the band prepares to play the piece (in silence), then they count off a drum roll (in noise), and then they finally start the composition (in silence). This creates an ambiguous situation in which the beginning is excitingly unclear.

Trifonov: New York (2014)

upright posture
Maestoso.

dynamics are very close to score

Head back

Hunched over

ritenuto

Head back dramatically on chord

extra rest almost a quarter note!

Big breath!

hands rise slowly

1a 1b cresc.

tr

2a 2b cresc.

only left hand rises—right hand stays on

extra 8th note rest

Throw head back very dramatically

at rests 1a and 2a, his left hand articulates the start of the rest, and then conducts it

URL: <https://www.youtube.com/watch?v=JcFFxvG8pWg>

► TRIFONOV PERFORMANCE: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937219>

Trifonov: Lyon (2017)

Maestoso.

dynamics are exact

much faster than the New York version; silences are shorter as well

Head back

left hand is conducting

ritenuto

no extra gestures

very gradual release

extra 16th note rest

fingers gradually release—hands just above keys

1a 1b cresc.

tr

2a 2b cresc.

completely hunched over

almost 8th note rest

Throw head back very dramatically

pedal

Holding pedal and

completely hunched over during 2a and 2b

URL: <https://www.youtube.com/watch?v=JcFFxvG8pWg>

► TRIFONOV SOURCE VIDEO: <https://www.researchcatalogue.net/view/1712958/2936965#tool-2937123>

The two performances shown are remarkably similar in dynamics, though the Lyon version is a noticeable ten seconds faster. In Lyon, he omits the big intake of breath (the double upbeat) at 1F, transitioning more smoothly between the two fanfares. The 1F and 2F rests are both closer to the notated durations and not as drawn out as in New York. Possibly, he is responding to different acoustics and a different architecture. The Lyon concert hall is considerably drier, which probably explains the faster tempo: he does not have to wait as much for the reverberation as he does in New York.

5.3 Embodiments of Eloquent Silence

In Chapter 1, I posited that, in some situations, the visual elements of silence are more important for the receiver than the auditory elements. The examples above may support my theory of the visual as a valuable marker in perceiving silence. I chose the opening section of Beethoven's last sonata because it seemed emblematic of his masterful use of silence. Yet, when I began studying performances of the fanfares, I realized how few of the pianists employed any silence at all. Instead, they were creating elaborate bodily gestures during the rests to communicate "silence." Eloquent silence became more about embodiment than about silence itself. The public had to paradoxically attend to the visual rather than the audible to understand the rests.

► COMPARATIVE VIDEO OF ALL RESTS: <https://www.researchcatalogue.net/view/1712958/2936968#tool-2937183>

Marking can be done in many ways, as these examples illustrate. Speed or pulse can be shown with the hands; color or affect might be suggested with facial expressions; shoulders could communicate peace or intensity; power or force might be shown by throwing the head back. While visual markers may not be necessary to hear silence, they contribute to how an audience understands silence in live performances.

Each pianist—through their unique interaction with silence and mediated by a complex interplay of embodiments, facial expressions, and gestures—opens a dialogue with Beethoven and with the audience, inviting an exploration of the spaces between the notes. Far from rendering silence as just non-playing, these performances elevate it to a visible gestural narrative.

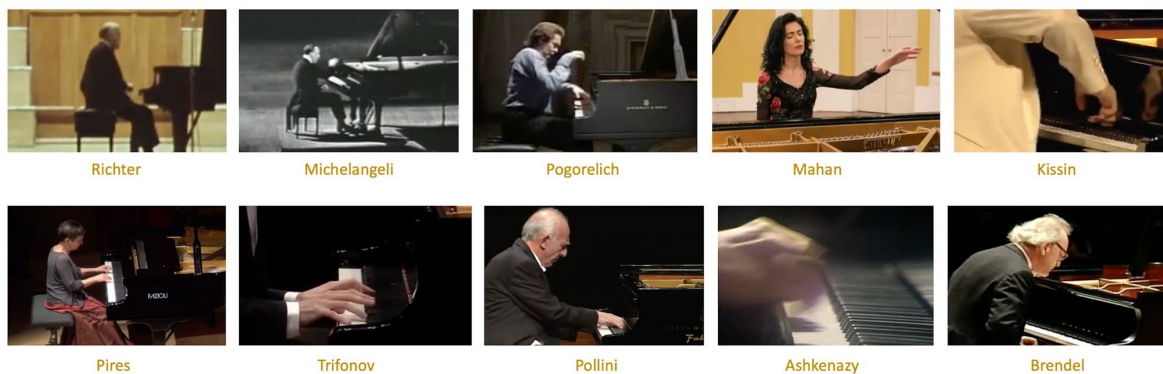


Figure 69: ten different embodiments of the rest at 1F

These ten pictures show a remarkable variety of gestures in the same instant. The embodiments of silence inform us of otherwise inexpressible struggles.⁴⁵ The pictures demonstrate how rests offer a unique opportunity for storytelling. During a rest, the performer has full rein to “conduct” the phrasing, to “show” the line or to “mold” the audience’s experience visually. In my opinion, embodiments during rests can offer a resistance to the homogenization of pedagogy, conservatories, performance practice, and even Mann’s texts: performers can express themselves more bodily in Beethoven’s rests than they can in the notes. The rests afford a less scripted and potentially less rehearsed (re-repeated) creative outlet for the pianists. The rests offer the chance for a freer, non-traditional vocabulary which can also allow the pianists a means to align with the music, “to go with,” to emotionally engage with the sounds through gesture. These embodiments are not disciplined by pedagogy or standard practice, so they provide a zone of freedom for individuality in classical music performance.



Figure 70: screenshots showing facial expressions in opus 111

The gestures of these pianists inhabit an ambiguous bodily world between the fictional and the real, a dichotomy that is sometimes mentioned in the world of theater. Derived from the ideas of enlightenment philosopher Johann Jakob Engel, this contrasts the “real

⁴⁵ It is also possible to perform all of the Beethoven sonatas with a neutral facial expression and only the gestures needed to transition from note to note. A pianist who does so might be accused of giving a robotic, emotionless performance. However, it could also be a concentrated performance: a more neutral posture may also help to visibly convey concentration and a focus on sounds.

body” with the “fictional body” (Fischer-Lichte, 2008, p. 85). The real body is supposed to be one’s physical, actual body, containing the gestures of our daily life. The fictional body at its most extreme is the dancer in *Swan Lake*, who is radiant and smiling onstage despite the agonizing pain in her bloody feet. The fictional body is a performative one created to entertain the audience. But it can also be a kind of armor, a defense.

Where can we situate the bodily gestures of the concert pianist? Speaking from my own experience, a concert is a performative situation in which I have chosen to place myself. My gestures are considered, thought out, and practiced. Over years of performing, I have created an internal code of accepted gestures for myself. These have been studied and repeated. To borrow another theatrical term, I am *in character*. But I am not trained *per se*: I am not an actor. Like most classical pianists, I have not studied movement. My body is more controlled than fictionalized. Many gestures are motivated, but I also make non-intentional gestures and inadvertent facial expressions out of nervousness or tension, engagement or excitement. Hence not every gesture is re-rehearsed. But all are part of my performing persona.

The motivated gestures might correspond to the training and approach of concert pianists, whose artistic practice is a repetition, a choreography of the performable. In the classic conservatory-trained model of an interpreter, the transmission of the pianist’s emotions is made *audible* via the notes and the silences, and made *visible* via the gestures and embodiments. And in the here-ness and now-ness of a performance, the pianist is simultaneously inhabiting multiple characters, some more fictional than others. The gestural freedom afforded by rests helps make the depiction of these characters possible.

Theater scholar Richard Schechner suggests that all performance comes from repeated embodied behavior: “Performances—of art, rituals, or ordinary life—are restored bits of behaviors, *twice behaved behaviors*, in other words—repeated behaviors that we learned, trained for, rehearsed, etc.” (Schechner, 2013, p. 60). Pianists are constantly training and constantly practicing. Pianists *repeat* gestures for a living.

The repetition involved in presenting these gestures to the public, the degree of virtuosity needed to perform the gestures between the notes, and the scale of the gestures (very large,

compared to the note gestures) all seem to indicate a strong degree of motivation on the part of the performers.⁴⁶

What might those motivations be? Kissin's approach to the silences suggests an emotional wrestling with the piano, a sort of clash of titans (Kissin versus the Steinway), while Richter is stoic, as the lonely prince. Both pianists' gestures seem as motivated and emotional as their notes: strongly argued and powerfully illustrated. The markers for silence (even when there is no actual silence) that these pianists so dramatically embody may be, in some cases, illustrations, a mimesis of the silence or the decaying notes, a picturing of the reverberation of the hall (such as Mahan's flowing arm movements). Gestures for something that isn't there (the rests that are obscured by the pedal) give the impression of eloquent silence. Some of these pianists are pretending to perform silence, thus fictionalizing silence (Kissin especially) while others are obscuring the rests (Pollini) without a gesture of eloquent silence. The markers that Kissin and Pollini provide do not correspond with audible silence—they are markers for silences that are not really there.

Another motivator for silence is reflection, as in a means of thinking through, and understanding.

We tend to identify the delivery of a piece of music with its notes, and it is perhaps in part because of this that our attention increases when there is an absence of notes. The reflective element is primarily for the benefit of the listener: it has the capacity to enable him or her to make sense of what has gone before, to enter into the creative process of reconstructing the performer's meaning [...]. (Potter, 2017, p. 156)

The audience needs time to process a piece of music, not only after but also during the performance itself. In Anton Webern's *Variations*, there are very frequent and very notable rests that offset the short phrases. These rests fulfill a structural function, separating out essential material so that the audience can digest Webern's new musical language and understand something of the complex form. This does not mean that the silences are subordinated to the sounds. In fact it is the opposite: without the silences, the sounds would not make sense. The silences are essential for Webern's audience to

⁴⁶ This does not preclude unconscious intentionalities or unintended communications. Choosing the wrong dress or getting the wrong haircut may luckily be dismissed as a non-communicating by-product of musical engagement or may unluckily communicate substantial, perhaps negative, information to the audience. The audience has its own (framing) conventions and expectations (see Chapter 3 for my experience in Magdeburg with a silent audience).

understand his new language. Opus 111 also seemed modern to audiences of Beethoven's time, and thus structural clarity could have been a motivation for silences.⁴⁷ The best example might be Pires. Even though she shortens the silences, they are presented as counterweights to the notes in a structuring, reflective manner. The silences have a retrospective quality that helps the audience digest the notes that have recently sounded.

Performed silences may arise through providing the audience time or space for reflection. But the pianists themselves might also use silence embodiment for reflection or understanding. When learning a new piece of music, I often find myself practicing with one hand while conducting with the other. At some point, as the learning advances closer to a performance, both hands are working at the piano, and much of that conducting is tucked away into my mental and bodily memory, no longer visible to the audience. However, some vestiges remain and are incorporated into the performance. The process of rehearsing and re-rehearsing has inadvertently created new gestures that are visible when the hands are not playing notes; the rests can be a glimpse into the performer's rehearsal technique, their private practice.

Other variations are also possible. Pianists may conduct themselves during rehearsal or performance. This self-conducting can be quite visible, especially with the left hand in Richter's or Trifonov's performances. Gestures can be a tool to engage and immerse oneself in the music. In these cases, gesturing can be a way of opening. Gestures may even constitute a mode of listening. In these performed silences, facial and gestural expressions of pianists might not be pictured as deliberate communication with the audience but rather understood as a side-effect of communication with oneself as a musician.

There might be other less physical motivations for exaggerating performed silence. Many musicians relish the audience's silence during a particularly gripping performance. Onstage, I try to have an extra ear pointing out at the audience, gauging their attention—from their silence. The more perfect the audience's silence, the more engaged they are. This silence behind the music is a form of audience approbation. A rest in the score can signal a chance for the performer to test the room's temperature, to check the focus of the crowd. Listening to the audience during a gesture can thus be a motivator for eloquent silence.

⁴⁷ See a further discussion of this in the archive video of Eidschun's [Specks](#).

5.4 Coda

Silences separate the fanfares that open the sonata, and the notes of the fanfares *mark* the silences but are equally *marked* by the silences. A heterogeneous performance tradition has developed around these fanfares. Key ingredients are teaching traditions, the score, associated texts, concert hall acoustics, the rituals and socio-cultural context of the concert, and other factors, including piano, stage, and costumes.

Looking-at and *listening-to* the silences of virtuoso pianists gave me a chance to pull apart the gestures, to isolate them, and to experiment with them. Far beyond mere entertainment, these gestures are themselves a musical or theatrical communication. I see them as an unwritten vocabulary for communicating silence's multidimensionality (see Chapter 2) to the audience.

► SUMMARY OF LESSONS LEARNED: <https://www.researchcatalogue.net/view/1712958/2936968#tool-2937184>

What they communicate and how they do so depends also on the performer's persona and their apparent gestural motivations. These performers are often working from the same score, interpreting the same rests. Yet, even more so than with the notes, the silence differences are extreme. Freed of their attachment to the keyboard, pianists create strange and eccentric means of capturing the audience's attention and describing or conducting the silences.

I suggest some conclusions:

- The visual curates/narrates our perception of eloquent silence in concert; pianists consciously or unconsciously understand that, and visibly embody the silences;
- The rests afford a freedom of movement to the performer.
- The visual constantly influences our perception of music. As such, these performers embody silence vividly. They are picturing silence for us, even if they are not playing it. Few of the pianists respect the rests; the sound level is often loud. Instead, they *illustrate* eloquent silence for us.
- When pianists conduct, choreograph, and embody the rests, the audience visually understands—more cognitively than perceptually—*that* silence is happening and *how* silence is happening.

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.

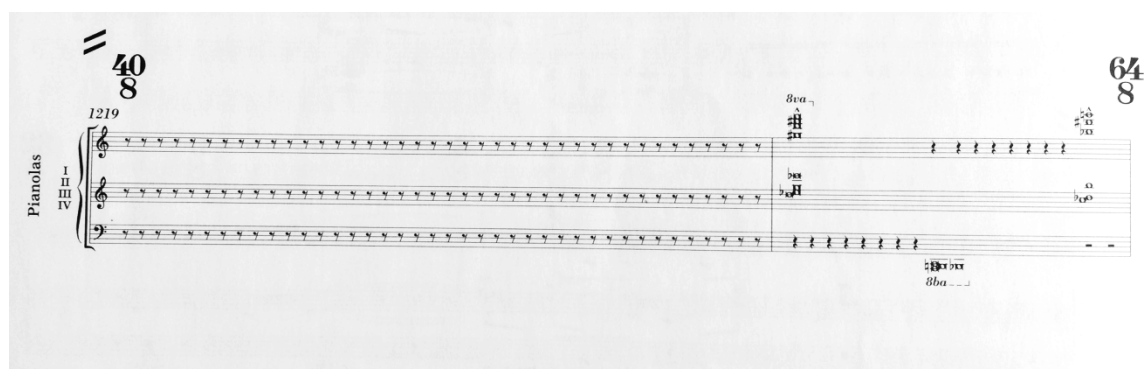


Figure 71: an agitated, *prestissimo* silence from *Ballet mécanique* (Schirmer, 2000)

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.

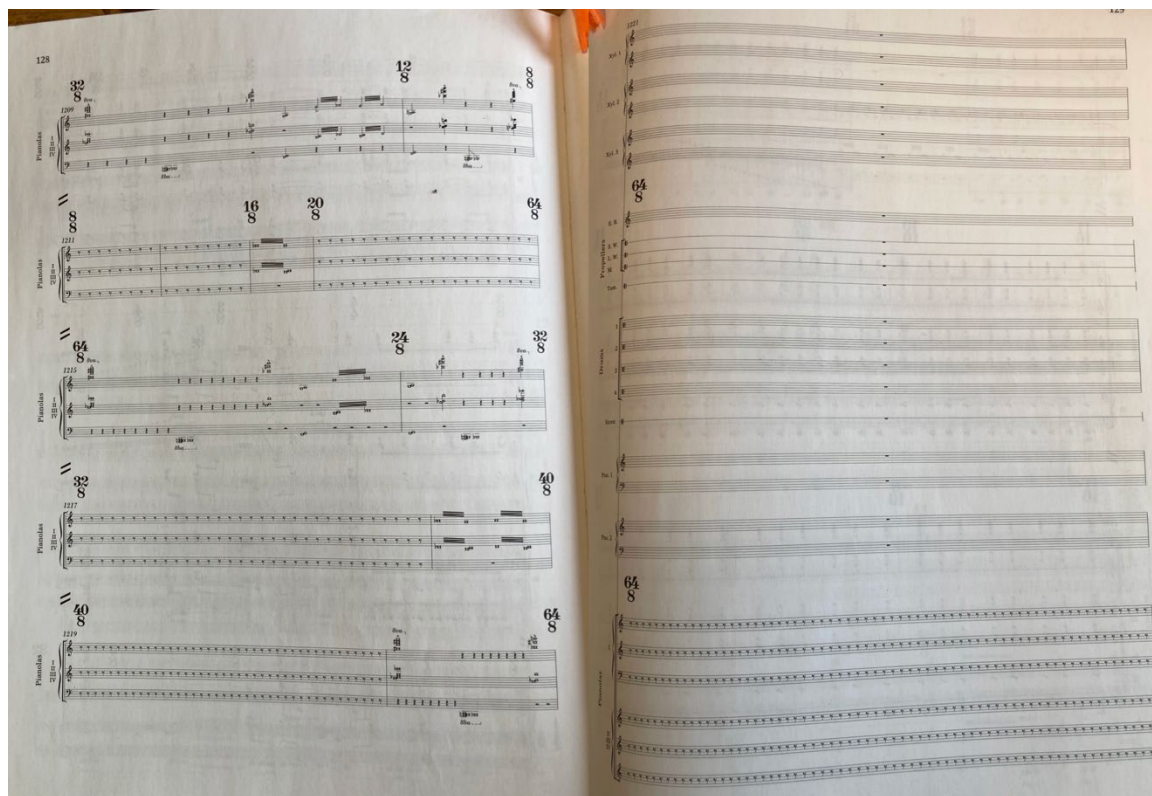


Figure 72: pages from the *Ballet mécanique* score showing increasingly long silences (Schirmer, 2000)

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).

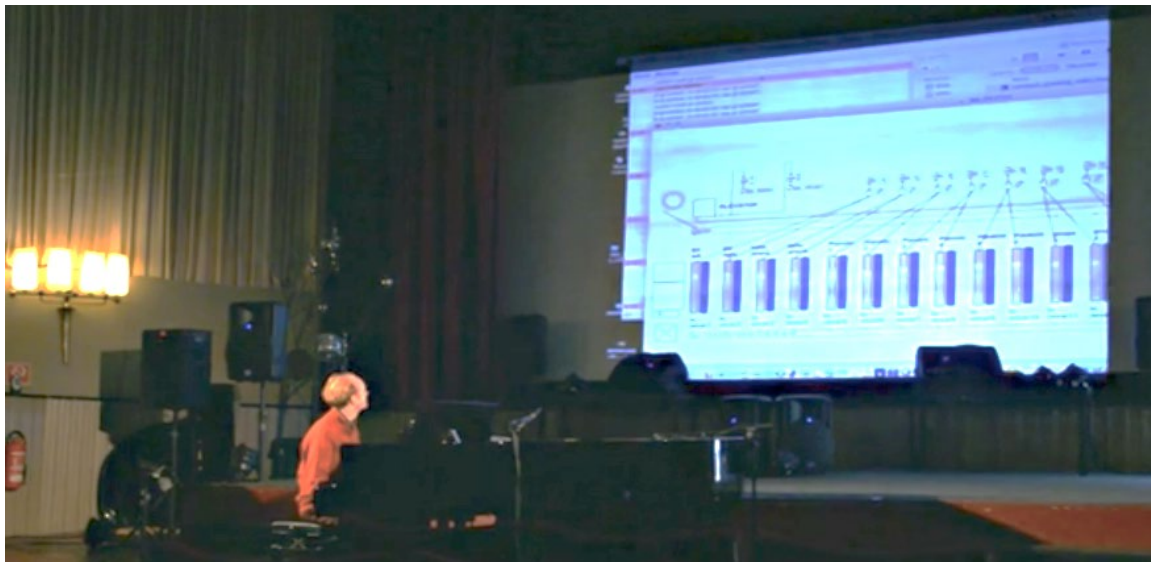


Figure 73: balancing the first eight-channel installation of *Ballet mécanique* with midi expert Paul Lehrman and composer Oliver Schneller at the SinusTon Festival in Magdeburg (author's photo, 2013)

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.

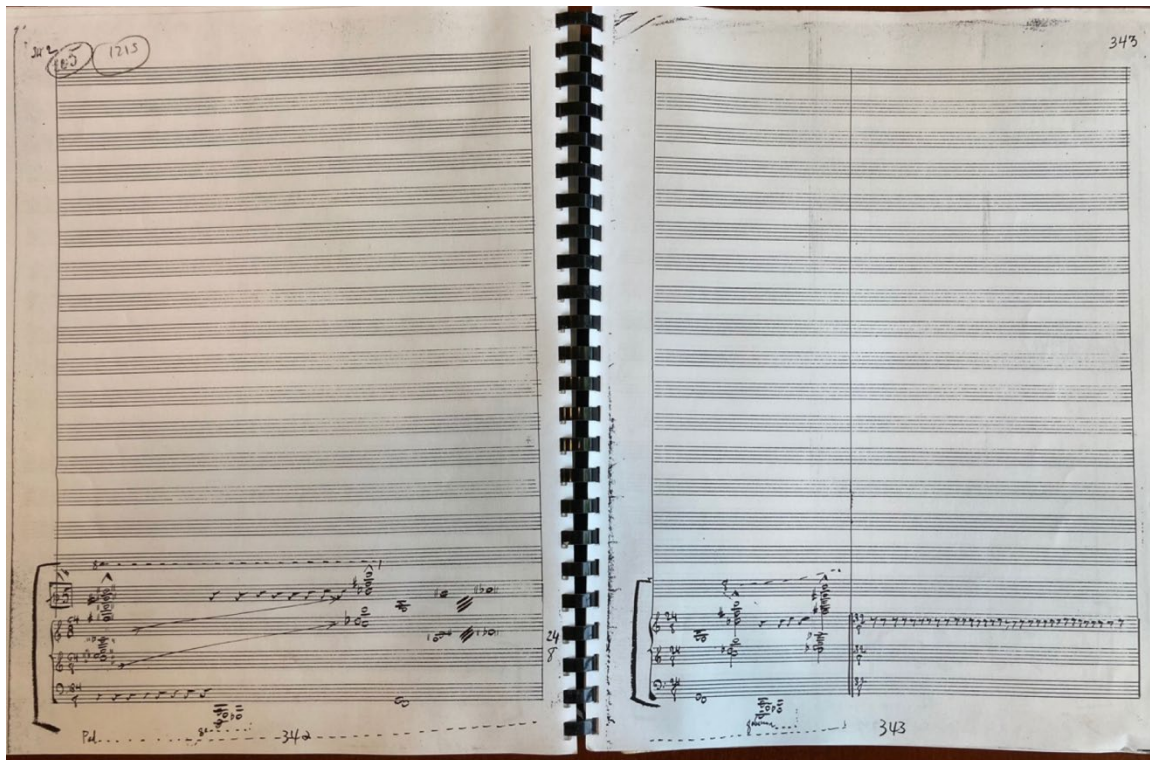


Figure 75: photocopy of Antheil's manuscript (1923/24) showing the full bar of 32 eighth-note rests on page 343 (New York Public Library for the Performing Arts)

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.

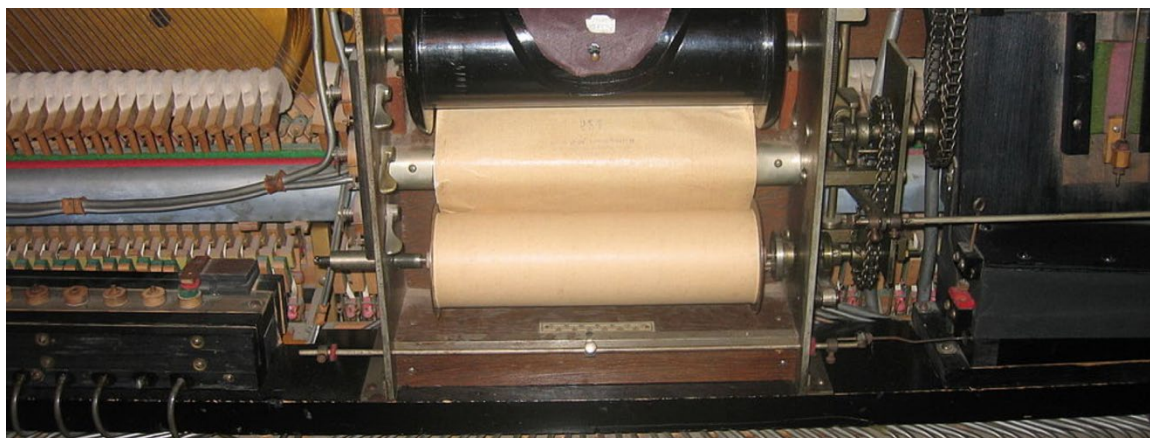


Figure 76: The inside of a pianola reveals the paper roll, the mechanism, and the air tubes that connect to the piano hammers. Unpunched paper equals silence. The holes in the paper equal specific piano notes. In this photograph, the paper is wound to the end, so no holes are yet visible. This picture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

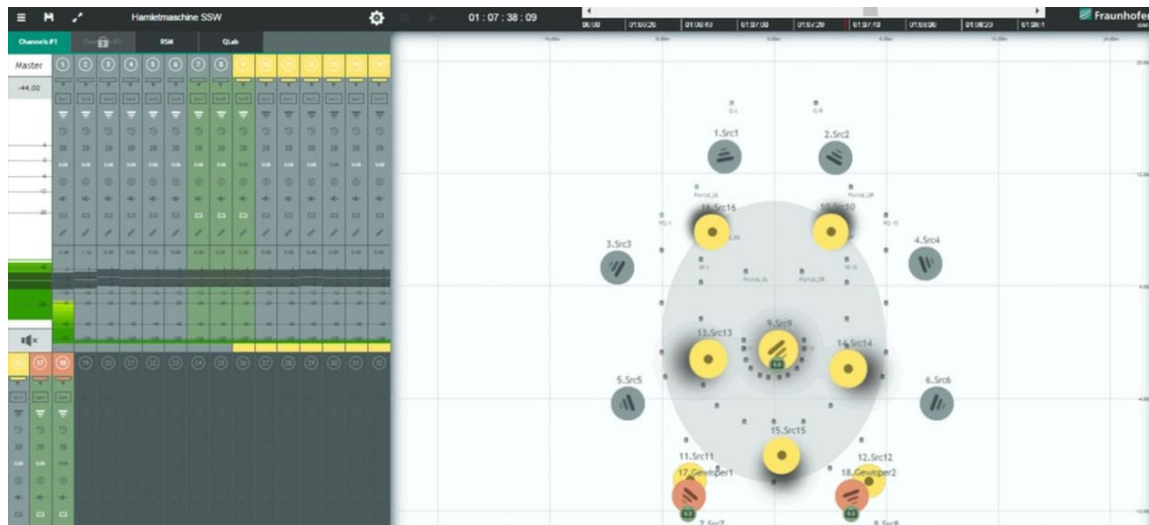


Figure 78: testing the software used for distributing the sound around the hall (Opernhaus Zürich, 2024)

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.

Chapter 7. Conclusion

The central aspect of my research has been the creation of an open archive of performed silences. This ever-expanding Noisy Archive has transformed my understanding of silence, giving me the tools to identify and compare silences, explain them, and perform them.

Performed silence is little documented in music studies and is often poorly understood by musicians, even when skillfully played. By examining different eloquent silences in performances of composed music, I have illustrated and tried to open up new options for understanding and engaging with silence.

Notated rests communicate very little information in and of themselves. But within the printed score, multiple options for interpretation arise from these rests: “The communicative rest almost always has more than one potential function, which the performer is at liberty to reveal or create” (Potter, 2017, p. 168). Often more so than the notes, the rests in a score give the performer the liberty to reveal or create, and affordance to communicate via gestures and embodiments.

How can performers engage with the multiple dimensions of silence in composed music? This research question, arising from the act of performing, investigates and unpacks the relationship between notated rests and “audible” silences by focusing on the role of visible, audible, and notational markers. Early in the research process, it became clear that the means of expressing silence are diverse, complex, conflicting, and overlapping. Musicians will not find this surprising. But what was surprising was how much of this diversity was tacit knowledge. This knowledge is commonly shared amongst musicians but is tacit in the sense of not being studied and documented more systematically. Moreover, it is tacit in the sense that the common means of expressing silence are not notated, as traditional notational symbols overlook the multidimensional contingencies and potentialities of performing silence.

This became the motivation for my archive: creating an open catalog of techniques and inspiration and making it available to other musicians to further their knowledge of performing silences. The archive became more and more multidimensional as I made links between performed silence and other disciplines and engaged with a great variety of composers and performers. My archive became both a tool for analysis and a means of generating new embodiments of silence in my practice and in my teaching.

The Noisy Archive’s examples underscore a pivotal point within this research: understanding and considering what silence represents is crucial for the engaged

performer. By discerning the role that silence plays and how it functions (how it acts and *what it does*), new ideas on how to perform silence emerge. Conversely, delving into the actions and modes of execution in performance leads to a nuanced comprehension of the function, role, and position of silence in music.

My exploration of silences was furthered through the analysis and embodiment of three canonical works (*4'33"* by John Cage, opus 111 by Ludwig van Beethoven, and *Ballet mécanique* by George Antheil). I studied other performers and used reflective imitation videos as a technique for investigating manners of performing silence. Research methods further included reading, teaching, graphic analysis, field recording, interviewing, video analysis, auto-ethnography, storytelling, and reflective imitation of other pianists. The outcomes included radio shows, podcasts, a mini festival of silence, piano performances, student artworks, published articles, and a collaboration with dancers. The cross-networking of these methods attests to how this artistic research has helped me find ways to work from practice to theory and back to practice.

As I explored the case studies and archive examples, I developed responses to the research question:

- There are many **markers** (especially audible and visible) that a performer can use which lead the audience to expect or experience silence. They are signals that the performer employs to embody silence or make it eloquent. Frequently, silences are multidimensional, communicating information about temporality, function, and emotion. The use of markers by the performer can shape the audience experience of these dimensions;
- Some silence markers (including architectural, ritual, and iconic ones) may exist outside of the notated music as **meta-silences** that stem from the performance (context) of the work, impacting the audience's experience and potentially framing the composition. The audience itself can collectively create markers for silence with a ritual, spiritual, or behavioral component;
- Performers embody silence through a rich vocabulary of **gestures** that has no notation and which is not widely documented;
- Performed silence often highlights the visual, as I have shown in traditional performances of opus 111 or experimental videos of *4'33"*. Indeed, the **visual component** of musical silence can often be stronger than the auditory, taking precedence in shaping audience awareness of silence;
- Silence serves a connective as well as a disconnective function in musical experience, sometimes simultaneously, a phenomenon I refer to as the **not/knot**. Whether connecting or disconnecting, silence is often felt as tangible by musicians.

My results are intended for all musicians, not just pianists. It is true that many of the examples included here focus on the piano and its resistances and affordances. In most of

the examples, the performer (whether myself or others) is in profile, seated at a bench, in the customary stance of a classical pianist. But in the Cage examples, other attitudes for silences are revealed. These possibilities can extend back to the confines of the piano itself, or forward to other instruments and other musical disciplines. A vocabulary of markers can offer performers many new ways of interpretation and can be applied equally to the classical repertoire and new experimental works. Composers can also benefit from these tools in that they can better label, strategize, and comprehend their use of silences.

7.1 Conceptual Contributions

- **Markers for silence** are visible or audible signals used to shift attention and thus *impose* silence, *summon* silence, or *shape* the perception of silence. They can also have a ritual characteristic, or they can arise from cultural norms.
- I have drawn from conversational theory to suggest the term **eloquent silence** based on its rhetorical component and its potential for communication. Eloquent silence, which is usually thought of as a purely acoustic experience, is more often indicated to us by performed gestures and visual markers than by actual silence.
- **Gestural markers** were explored with contrasting examples from Beethoven's last sonata, in which concert pianists deploy exaggerated gestures to embody performed silence. Although constrained by their instruments, their clothing, and their training, their embodiments seem to represent an outlet.
- In my performances of Antheil with the Zürich Ballet, rapid gestures and agitated choreography were effective in communicating the hectic pulse of the silences which arose from **notational markers**. Our experimentations on stage revealed a plethora of gestural possibilities both for the embodiments of the silences and the effects thereby created.
- The performances of Cage's *4'33"* highlighted the complexity and interest of visual attitudes and postures for silence. But the sounds created by the performers, and the sounds around the performance are **audible markers** for silence, which help the audience parse and comprehend the artwork.
- As discussed in Chapter 2 and the Noisy Archive, **meta-silences** are silences that usually arise from rituals, norms or other contextual matters. They play an important role in framing works of classical music and in shaping our experience of contemplation.
- **Visual markers** refer to an important suggestion—that silence in live performance is often reliant on the visual. They seem to play an outsize role, often taking precedence over the other senses, a multimodality of perception. In live performance, the performative aspect of silence is often more seen than heard, reinforcing the theory that the visual experience is integral to the emotional and interpretative depth of eloquent silence.
- This dissertation proposes silences as multifaceted entities within the performance space, capable of delineating and blending musical phrases and invoking a reevaluation of their performative function. As such, silence offers the capacity for delimitation and assemblage, positioning the performer as the one who navigates these dualities in each singular event. This

model of “**not and knot**”—its capacity to serve simultaneously as connector and separator—challenges the conventional binary perspectives that typically categorize silence as either presence or absence or as either active or inactive. These co-existing dualities are, for example, present in the silence that separates the fanfares of Beethoven’s opus 111. Some pianists emphasize the separation (Richter); others emphasize the connection (Pires). This emphasis is created by the use of markers, both audible and visible.

- One question that often arose in my discussions with other musicians was a search for the **motivations** behind embodied silence. Some pianists are overtly seeking to communicate specific emotions through their embodiments of silence. Other pianists use gestures to illustrate the sound of silence, perhaps just for themselves. Their gestures stem from the practice room as a type of self-conducting. Or pianists gesture through the silences to retain the audience’s interest. In my own practice, I often try to articulate the breaths, the phrasing, or the structure of the composition. All of these are valid reasons for embodying silence, and many of them can exist and function simultaneously, even in the shortest rest.
- **Silence and time** are intricately related. The pauses or spaces afforded by rests help performers feel and process the present. Some silences let the audience listen backward to the past (the silence at the end of Anton Bruckner’s *Te Deum*) or forward to the future (the opening of Beethoven’s Fifth Symphony). Still others (Morton Feldman’s *Intermission 6*) seem to be without reference to time or duration. Gestures and embodiments of silence can be rapid or slow, overlapping or discontinuous, or any combination. The silences of 4’33” might be assumed to be timeless, but many of the videos in Chapter 4 demonstrate a strong dialogue between silence and time. The members of the band Dead Territory beat time quietly with their heads. Pianist David Tudor marks multiple time scales: a slow one of turning pages (a visual marker for time) and a fast one of a clicking stopwatch (an audible marker for time). Markers for time and silence can overlap, as in my performances with the Zürich Ballet. Antheil hoped for an audible sensation of time running through the silences without being touched. The choreographer in the Zürich performance experimented visually with abrupt falls during the silences. As the dancers collapsed, they were marking both time and the drama of the silences. Several time scales, marked both visibly and audibly, were thus present in the finished performance of the silences.

7.2 Practical Contributions

Another aspect that came out of my research project is **an improved vocabulary of silence**. Although silence is notated unidimensionally (duration), there is much evidence for a multidimensionality of silence. These dimensions could include intentionality, source, direction, emotion, remembrance, and even speed. These dimensions easily mesh with techniques and theories that most musicians use in their practice. Although performed silences are often intuitive, unlabeled, or uncategorized, the very attempt to define performed silences through an archive has provided insight, building fluidity and

potential into dimensions and offering new performance opportunities. A future step may be to create **new notations for silence** (see below), which could be helpful to performers and composers.

My **Noisy Archive** offers a chance to rethink silence, not simply as an absence of sound, not simply as a rest, and not simply as the spaces between notes. In each of the pieces I performed, silence took on a different shape, a different role, a different meaning, and a different position, and hence elicited a different approach, a different way of playing, a different ethic, and a different way of communicating to the audience.

The silence examples illustrate a **“heterogenizing” of silence** in and through music-making. As such, they may open new ideas, vocabulary, and gestures that, together, can add to this Noisy Archive: an archive *of* silences, *for* silences, found *through* silences. The archive reveals that each musical performance of silence gives rise to a distinct interplay of diverse elements, including markers, notations, framing techniques, and performative strategies. In some instances, only a single marker may manifest, or a dominant marker may prevail, while in other examples, a dynamic interplay of multiple markers influences the performance and/or the audience’s perceptions. The variances in silences in the musical examples can be attributed to a number of factors. These include the acoustic properties of the performance space, the choice of instruments, the guidance provided within a musical score, the autonomy exercised by the performer, the responsive behavior of the audience, and the role assigned to silences within a specific musical piece.

Silence is not a singular, homogeneous entity. Instead, **silences exhibit substantial diversity**, as was demonstrated through comparative examinations of 4’33” and opus 111. Furthermore, the contextual aspects of silence, which are influenced by both non-sounding and sounding elements, especially markers, highlight silence’s complex and often visual nature. My own research only begins to touch on the expressive possibilities of this diversity. Moreover, musicians are constantly inventing new modes of performed silence. The archive will get noisier, more alive, and perhaps more flexible as it opens up to further silences.

By working with many composers (in teaching and through the archive), I have influenced the amount and kind of repertoire related to silence by encouraging new possibilities. This can originate through my piano practice as a concert performer or through my teaching practice, encouraging students to experiment. I plan to continue creating **new works around silence**. (Some student examples and a commissioned example are discussed below.)

From Cage, I learned about intricate layers of embodiment, silence, gesture, and listening. Watching and listening to the YouTube performances of *4'33"* underscored how silence can be embodied through the performer's gestures. Gestures, whether they be the poised stillness of a pianist or the deliberate turning of a page, served as visual cues to communicate the character of silence. I realized that my earlier interpretations, based on Cage's ideas, were not effectively communicating to the audience. This embodied silence is a performative act that shapes the listener's perception, creating a reflective space for listening that magnifies the music's expressive potential. My attempts to encourage active listening from the audience were not always successful, but experimentation on radio and in hospitals removed the artwork from its foundation and transformed it into a shared experience of attention and awareness. I began to "play" with the artwork more, deliberately destabilizing performance expectations to create more unexpected outcomes. By incorporating the lessons I learned from YouTube, I moved the foundation of the artwork again. By no longer focusing on "success," "tradition," or the "classical frame" in which the piece is anchored, I could make the artwork more playful and more responsive to the audience.

From Beethoven, I learned that silence can be descriptive when it punctuates musical phrases, creating a canvas upon which the music's emotional and thematic textures are accentuated. It invites a reflective pause, enabling both performer and listener to inhabit the space between notes, thereby magnifying the work's expressive capacity. Illustratively, silence guides the listener's journey through the piece and highlights certain structural and emotive contrasts within the composition. Silence becomes a critical narrative tool that performers leverage to convey complexity, tension, resolution, and the inexpressible.

From Antheil, I learned that silence stands out as a radical and abstract structural component framed by various visual and physical markers that enhance its impact. Mechanical instruments and the sounds of airplane propellers, bells, and sirens serve as theatrical markers; their abrupt cessation of sound leaves a lingering black noise that intensifies the ensuing silences. In the Zürich performances, choreographic elements further embody these silences, with frenetic gestures shaping the audience's perception. I learned to what extent these silences are used: not as interludes but as deliberate, structural voids that highlight Antheil's strategy of using silence to disrupt and disconnect, creating a radical quiet amidst the chaotic noise. This transforms the "absence" of sound into a dynamic presence, a "noisy silence," amplifying the preceding and following sonic chaos. Antheil's integration of silence thus redefines it as a profound disruptor and an avant-garde structural element within the musical narrative. This experience, and the

study of it, profoundly changed my knowledge of silence and increased my silence-performing skills.

How to Use Markers in Practice: A Guide to Performing Silences

From the Noisy Archive and the three case studies, I conclude that markers for silence are a multifaceted and complex phenomenon, integrating audible, notational, and visual elements that significantly shape the audience's experience and interpretation.

The archive especially illustrates how heterogeneous, contingent and interconnected markers are and shows the potential artistic choices that they offer to the performer for communicating silences. A few main themes can be used very practically by performers:

- Dramatic gestures can summon, signal, or prepare silences. The performer's choice of gesture, such as fingers hovering precisely above the keys or a head thrown back in a magisterial posture, provides visual cues that shape the silence, making it eloquent and communicating emotions to the audience.
- These gestures can intertwine with the architecture of the performance space, where the design of the hall, lighting, ambient noise levels, or the layout of the stage can emphasize or summon silences.
- Amplification, traditionally used to project sound, paradoxically can serve as a marker when turned off, leaving a resonant void.
- The contorted face of a performer in anticipation or a paused immobility can describe silence. The experience of silence can be informed by the performer's deliberate poise and slow or motionless posture, ingredients that might describe breaks in the musical narrative.
- Audience (mis)understanding can add to the landscape of silence in performance, depending on awareness of the notated silences or the story behind the artwork.
- Sometimes, dramatic historical events can have an effect on silence perceptions and affect the performer/performance, such as the fall of the Soviet Union or the lockdowns of the pandemic. Events like these can force the performer to confront unexpected audience reactions or react to unfamiliar contexts. See for example how artists like Sis Leyin adapted *4'33"* to a lockdown situation by embracing social media as a performance tool; or see my broadcast in Moscow (Chapter 4), during which exterior contextual markers completely overshadowed my own performed markers.
- Audience behavior itself can become a marker. When they yell instructional commands or refuse to applaud they can collectively reshape the performance. In these situations, the performer must make reactive decisions on how to behave (see my Checklist in Chapter 4).
- The performer's unsuccessful efforts can serve as inadvertent markers of silence, where moments of hesitation or technical failure draw attention to the absence of sound.
- Silence might also be delineated by external actors like traffic sounds or a ticking clock, elements that frame the silence audibly, temporally, and spatially. In outdoor performances, natural elements, from birds to rocks to weather, can also create markers evoking silence.

Many of these markers offer options for performing silence and making it eloquent. Whether they summon, describe, or impose silence, these multifaceted markers afford performers a rich palette of artistic choices to communicate and enhance the silences within their music, transforming them into expressive, dynamic elements of the performance.

How My Performing Practice Has Changed

► EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2936417#tool-2936775>

By embracing the audible, visual, and gestural aspects of silence, my performance has evolved to incorporate a broader range of expressive tools, enabling me to convey the music's narrative depth more strongly. I began the project because I felt that there was such a lack of understanding about the role of silence in the field and that it needed attention. It is not so much how my performing has changed as how my attitudes and approach have changed. I suspected the importance of silence but did not foresee the importance of gestures. I saw many visible silences but did not realize the impact until studying them. As a performer, I became more aware of my fictional body and persona onstage, especially by copying other performers.

This dissertation has given me the language to explain what I assumed was behind and around the silences. Now, I am extremely aware of when I am creating a connection or a disconnection in performance. Now, I think through every silence I play in terms of its not/knot potential. New questions evolved that I did not ask myself before: what is being connected, what is being separated, and how should silence function on this sliding scale of connectivity?

Reflecting (both in thinking and playing) on other performances has proved rewarding. In Beethoven, tradition and ritual affect the performance of silence considerably, yet I discovered remarkable freedoms of movement and interpretation. Tradition and ritual also played a major role in performed silence in videos of Cage's *4'33"*, and my analyses of these embodiments led to new understandings of silence, which informed my own performance. In examining these performed renderings of silence, an intriguing dichotomy emerges: the ostensibly constrictive tradition around Beethoven's compositions catalyzes a plethora of creative, balletic, interpretative embodiments of narrative silence. Conversely, the supposedly liberating role of Cage's musical philosophy seems to find its strongest expression within structured, formal representations of

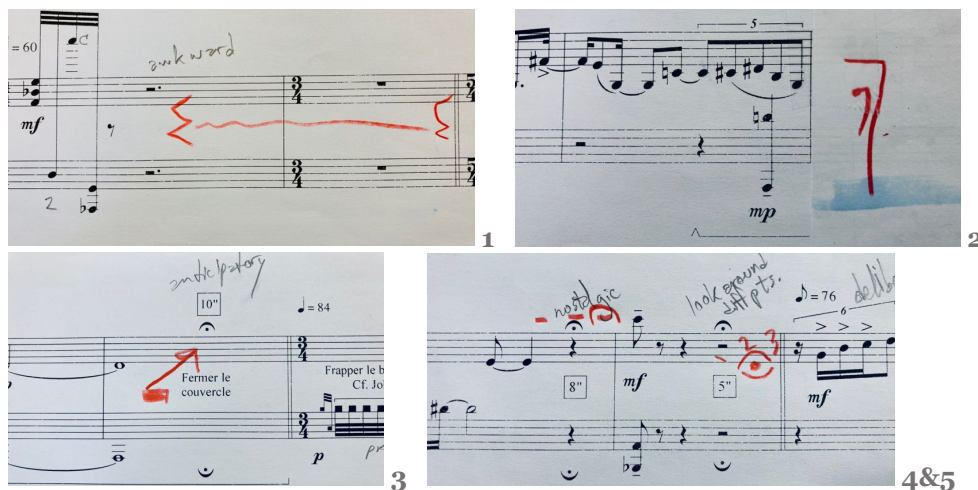
stillness in which attitudes and gestures are codified and formalized. This contradictory result underscores the multifaceted nature of silence in musical performance, challenging performers to navigate the interplay between the (supposedly) prescriptive notational directives of classical composers and the conceptual freedoms afforded by Cage.

In order to experiment directly with new kinds of performed silence, I asked the Lyonnais experimental composer Jean-Charles François to write me a new piece. François created a composition that consists of fragments in alternating musical styles separated by silences. The work is deliberately conceived to highlight the possibilities of silence. The musical fragments are meant to recall the practice sessions of students of “Aunt” Phoebe, John Cage’s earliest piano teacher.

▶ FRANÇOIS EXPLANATORY VIDEO: <https://www.researchcatalogue.net/view/1712958/2936417#tool-2936756>

The process of learning this artwork was difficult. At first, I had no plan to illustrate the silences through gestures, but after a few test performances, I began to do so. I chose embodiments for each big silence and performed them as theatrically as possible. These silent exaggerations were drawn from the Beethoven case studies. The current result (see video) is more experimental than finished, more contingent than conclusive.

Here are examples from my performance score, showing some experimental silence notations in red pencil.



1. The first notation is for an *awkward* silence, which is quite easy to recognize but difficult to communicate in performance. Planning or projecting an awkward silence (*shin* in Japanese; see Chapter 1) is somewhat self-defeating without a second person to share the awkwardness with.

2. The second red rest is a *surprising* silence, which is prepared by the notes that precede it and draws from Richter's opus 111 performance, in which he rips his hands off the keyboard like a reverse boxer. This gesture works so well for me that I also incorporated it into my Antheil performances.
3. The *anticipatory* silence of the second line is self-explanatory, though it might counter the composer's indication to close the fallboard over the keys. While embodying anticipation, I also must complete a conclusive gesture: closing something as if ending the performance. And I chose to do that silently, making sure not to bang the cover as it descended.
4. The next silence is *nostalgic* and inspired by Chopin's yearning silences (see Nocturne in the Noisy Archive). I was trained at the conservatory to perform this type of silence with a soulful look in my eyes or at least a downcast head. One might alternatively look off into the abstract distance, miles beyond the end of the piano, as in Trifonov's performance.
5. The last rest seeks to counteract classical conventions of performed silence. This is a rest in which I *look around*. The red symbol indicates to me that I must look consecutively at three different points in the room, from left to right, in sequence. The audience perceives immediately that I look around, and then they also look, trying to follow the logic, examining the space around the performance. This particularly experimental notation is *not* meant to communicate something. Rather, this is an abstract and performative silence—inspired by the Sis Leyin performance in Chapter 4.

By shuffling the gestures around, I was soon able to create an entirely new interpretation of the piece, in which the silences came to the foreground. The piece does not specifically call for gestural silence. However, the gestured version is more performatively successful and communicative to the receiver. Indeed, some audience members said without irony that they had enjoyed the silences more than the notes. Like many experimentations, it did not lead to final or conclusive results. But it opened new doors to performing silences at the piano, especially suggesting that 1) anything can be a marker for silence, 2) even very subtle gestures can be effective, and 3) gestures play a large role in whether the silences seem connective or disconnective. All these subtleties will be explored further in my practice as I continue to work with composers on new works for understanding silence.

How My Teaching Practice Has Changed

During my five years compiling an archive for silence, I developed and taught new courses on silence for musicians and for architects.⁵⁵ As part of the process, I often presented my ongoing research to the students for feedback. The classes I taught became laboratories

⁵⁵ The examples mentioned here are drawn from a singer-songwriters course on silence in musical composition, which I team-taught with Ned McGowan in the Musician 3.0 program of the Utrecht Conservatory (HKU) in 2021; and an architecture Master's studio on creating spaces of silence, which I taught in The Hague at The Royal Academy of Art (KABK) with Michou Nanon de Bruijn in 2022.

for experimentation with the dimensions of silence. They are also promising results of my research because they illustrate how a new generation of composers and artists could use the vocabulary I suggest to create original experiences of silence.

Prior to this dissertation, my teaching practice focused on contemporary performance techniques and composition. I had never taught a class on sound or silence. Updating my teaching interests also encouraged me to update my teaching skills. I created toolkits for silence and for sound. These toolkits consisted of mind maps of dimensions, affects, functions, and motivations for silence, categorized by the students themselves into areas of interest. These informal and constantly changing toolkits were of great help in guiding my students through questions of tangibility, the sound object, the ineffable, hearing, listening, absence, presence, anticipation, resonance... and onwards.



Figure 80: images from brainstorming sessions on silence with interior architecture students (INSIDE, KABK, 2022)

I tried to guide students in isolating separate components of silence and understanding the complexity and interrelations of those components. The students brought their ideas and criticality, offering new directions and perspectives to add to my research, as well as completely new functionalities for and implementations of silence.

The following example is particularly compelling because the student engaged with the multidimensionality of silence (as mentioned in Chapter 2) to create new knowledge, not by duplicating my ideas but by challenging common preconceptions about hearing/perceiving silence in a vacuum.



Figure 81: preparing the vacuum machine for *untitled* by Mees van der Smagt, scored for piano four-hands, vacuum bell jar, coke can, motorized music box, and punched tape (HKU, December 17, 2020)

► VAN DER SMAGT VIDEO: <https://www.researchcatalogue.net/view/1712958/2936417#tool-2939423>

Having been told (by me) that we cannot experience silence in a vacuum, this composition student set out to prove me wrong. Here is his scenario: the lights go up in a darkened room, and a blanket is pulled away to reveal an inverted glass bell. Inside the glass bell is a mini robot that turns a music box. The music box uses a long roll of punched paper that is curled around a metal can and gradually rotates in a sort of clumsy way, making music steadily. Two pianists sit at a grand piano, stage-left of the vacuum table and its operator. They begin playing a sort of lullaby, which becomes a moving duet between wonky machine and piano. The contrast is heightened by the loud noise of the vacuum, which is switched off once the air is evacuated from the bell. Of course, by then, we cannot hear the sound from the music box anymore because without air to transmit the waves, we only hear “silence” (or, in this case, we hear different levels of quiet sounds: the room tone, the hum of amplifiers, the sound of the two pianists still performing).



Figure 82: revealing the vacuum machine

Littlefield’s examination of the framing elements that begin the musical work is given repeated substance in this example, as the composition seems to begin several times: at the vacuum installation, at the piano, and inside the jar.

There was a temporal and gestural symmetry to the performance—a rising tension as the air pressure decreased and then a lowering of tension as the air returned to the jar. This mix of the visible and the

audible created sensorial confusion and conflation, as if the inaudible was made audible and the invisible was made tangible.

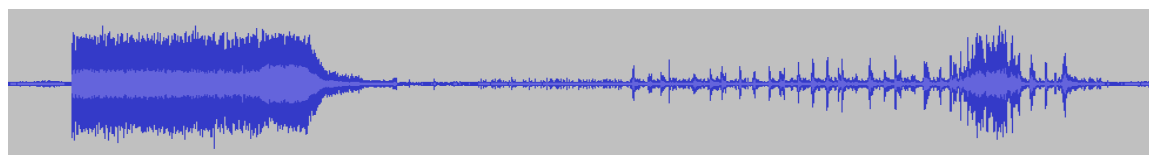
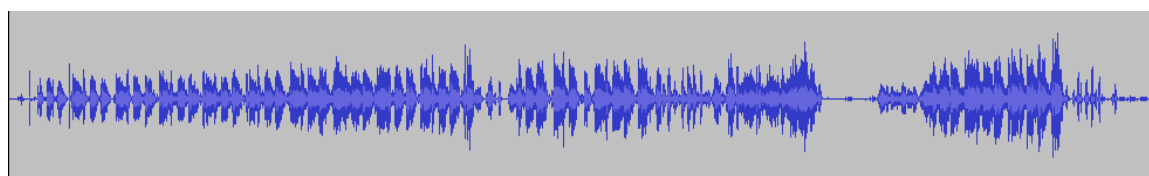


Figure 83: waveform of the performance

The composition and scenography were highly innovative: The machine seemed to have a life of its own, transmogrifying into a non-human embodiment of silencing, barely surviving a sort of asphyxiation, an apparent strangulation of the music box. And seeing the machine cranking away with no sound was impressive—our eyes and ears were transfixed. The composition successfully proved that audiences *can* experience the silence of a vacuum and that this particular silence can be personified and expressed in very understandable terms at a human scale.

The performances that originated in this class showed a great diversity of approaches to silence. Singer/songwriter Finja Verhoef, for example, wrote a layered composition that repeated loops of her voice over a light background of sometimes overlapping electric guitar chords. The main text, endlessly repeated, is: “*een dag, niet mijzelf, wil ik wel....what the hell.*” Verhoef explains that her text tells first of a struggle with insecurities and then of waking up one morning feeling more positive. What is fascinating to me is her use of stutter, delay, and other glitches. The silences seem to arise naturally from these glitches. That is her innovation: silences that are born from something else, from the glitches of Zoom and Facetime. The endless repetition, familiar from lockdowns, and the “what-the-hell” attitude also reflect pandemic anxiety. Her voice is closely-miked, and her breathing (as an expression of silence) increases the sensation of intimacy and vulnerability.



► VERHOEF AUDIO LINK: <https://www.researchcatalogue.net/view/1712958/2936417#tool-2936746>

These examples of experimentation, available on the [Research Catalogue](#), show the potential of my updated approach (listening, brainstorming, toolkit creation) to interest emerging artists and songwriters in innovative uses of silence. The enthusiastic responses from the students seem to represent a general increased interest in silence. Students have approached me in the last years with projects that evoke silence through meditation, shamanic practices, repetition, political censorship, conversational or social situations, and many more creative directions that I would not have anticipated but which are continually influencing my own ideas on performing and creating silence in music. The diversity of approaches and solutions amongst this generation of new artists suggests the potential of further exploring performed silence from a variety of perspectives and shows that the topic resonates with young musicians.

7.3 Ideas for Future Research

A first idea that can be further investigated is what music can suggest about the political and societal implications of silencing. The concept of silencing, which is important for my work, is too large a topic to explore fully here and would require many separate research projects. Silencing in a political or societal context includes genocide, racism, and many other horrors. These societal silencings are not musically performed, but their impact can be felt personally, locally, and globally and can be musically documented or commented upon. Indeed, the ineffability of performed silence can be used as a unique and interdisciplinary opportunity to voice the unspeakable elements of societal silencing. Or the role of music itself as a method of silencing or torture can be critically investigated.

Politicized/performed silences are important to me in my own practice, and in the Noisy Archive I give a few examples from my own pianistic experience (see my performances of the works of T.J. Anderson, Mauricio Kagel, Pamela Z). But there are many more to be studied, such as the Los Angeles queer collective UltraRed and their albums of silence which used Cage's music for political engagement. There is also research being created in international law that comments on silencing. For example, Elizabeth Schweiger's dissertation "Listening to Silence: 'Targeted Killing' and the Politics of Silence in Customary International Law" uses Cage's *Lecture on Nothing* as a framework and draws parallels between listening in diplomatic/political circles and listening in music (Schweiger, 2018). Other commonalities exist; perhaps studies of performing musical silences can also influence the understanding of political and societal silences.

A second idea that can be developed in future research can depart from the question of what the possibilities are for new silence notations. An important area for future research is the creation of new symbols for silence, which could become a silence alphabet useful to composers and performers alike. Such a potential alphabet would contain new symbols for silence beyond common musical rests and could encode some of the multiple dimensions of silence that are missing from standard western music notation. Is it possible to create a series of notations for silence that are open enough to offer composers new paths but specific and practical enough that performers will find them useful? Admittedly, the very idea of an alphabet offers challenges (such as an implied hierarchy) that would have to be addressed. Musicologist John Potter offers a caveat about such an alphabet:

In theory, it should be possible to propose a taxonomy of rests. While this has a certain academic appeal and might also resonate with a composerly control of the music, reducing such powerful communicative devices to simple functions would be to deny the ambiguities involved in the creative performer's role of storyteller. (Potter in Brooks et al., 2017, p. 168)

I believe Potter's hierarchical concern is but one of many possible outcomes. The academic appeal and the composerly control he refers to can lead to compositions like Boulez's third piano sonata, in which every note seems over-notated, and every event is circumscribed by rules, accents, and extra markings. Boulez's hyper-difficult sonata is an extreme example of composerly control and one I do not want to overly promote, for it removes some freedoms from the performer. Nonetheless, the result for the pianist is rewarding, as I know from personal experience. With time and extensive practice of this sonata, new freedoms arise for the interpreter; new sounds are experienced, and new effects are achieved.

A more influential and more accessible example can be found in composer and pianist Henry Cowell's extensive attempts to update musical notation in his book *New Musical Resources* (Cowell, 1930). Prior to this work, no reliable notation existed for playing clusters of notes on the piano. Cowell championed a simplified new notation for clusters—designating the white keys, the black keys, or both; and playing with the fist, the hand, the forearm, or the whole arm. Cowell's instructions were widely adopted by publishers and, eventually, other composers. As a pianist himself, he had tested all the cluster techniques in the bombastic piano miniature *Tides of Manaunaun* (1912), so pianists and publishers appreciated the tried-and-true practicality of these new notations.⁵⁶ The shift in attention

⁵⁶ Other proposed notations in the same book (for polyrhythms, new note-shapes, etc.) were more complex and did not have the same impact.

that resulted from a precise notation of the physical engagement with clusters freed the pianist for other tasks. In this situation, encoding a complex and multidimensional phenomenon in accessible notation was worthwhile and unlocked new compositional and performative potential. Like all historical developments in music notation, new symbols will be adapted, updated, and gradually repurposed by performers, thereby creating new performance practices.

The discovery of communicative functions and the understanding of ambiguities afforded by practical, performer-tested new symbols for silence would benefit performers and composers alike. I see this as a promising future project that could begin with the highly heterogeneous silences in the Noisy Archive.



Figure 84: As I explored and performed silences over the last few years, I was constantly jotting down notations for new kinds of musical silences as well as new notations for existing silences.

A third new research project could start from the question of how silence can be experienced in non-neuro-typical situations. Silence experiences for non-neurotypical and differently-abled persons deserve further consideration. Many researchers have attempted to understand Beethoven's deafness and its implications for his music, as well as for the audience's understanding of it. How do deaf persons experience performed silence, and how do blind persons experience the visual markers I have presented here? My research suggests that musical narratives can be partly communicated through visible gestures, a finding which may also be relevant in some cases for communicating sounding music to deaf persons.

In an example from fiction, Jennifer Egan wrote a story within a story in her novel *The Goon Squad*. Chapter 12, narrated as a series of PowerPoint slides, documents the work of a child on the autism spectrum who obsessively analyzes the silences in rock songs (Egan, 2010, p. 242). The author describes this silence inspiration as “pause power,” and it becomes a means of communication for the child.

In an example from performance art, Deaf artist and activist Christine Sun Kim has transposed Max Neuhaus's famous 1970s New York City silence walk. Her version of

LISTEN is a (silence) walk along the Lower East Side neighborhood, including American Sign Language narration, and thus accessible to those with differing levels of hearing (Eppley, 2021, p. 102). Indirectly, her walk is a response to Neuhaus's own response to Cage's 4'33".

And in an example that arose from my own pedagogical practice, one of my students at HKU created an artwork that introduced his audio world to the rest of the class.



Figure 85: Stach Platenkamp performing *untitled* for voice and electronics (HKU, Utrecht, December 17, 2020)

Platenkamp's composition reflected his daily experience with tinnitus. The music featured a complex layering of found audio, everyday sounds, beats, and the bells of the Utrecht Cathedral. It was a gripping performance that was just at the limits of being painfully loud, offering a remarkable insight into his musical habitus and new understandings of silence and listening, the shared and the personal.



► PLATENKAMP AUDIO: <https://www.researchcatalogue.net/view/1712958/2936785#tool-2936823>

7.4 Coda

Through the lens of embodied silence, this research has demonstrated the importance and complexity of markers for performed silence. That the visual markers for performed silence often speak louder than the auditory components does not negate the importance of the audible. In many situations, sounds are the only way the audience knows that “silence” is happening. The silence gestures of performers, their physical presence and movements, and the deliberate and inadvertent sounds onstage do not merely accompany silences but become a critical text in themselves, recounting stories of pause, anticipation, memory, and continuation that are essential to the musical narration.

I equally hope that this dissertation and its outcomes create an improved discursive and interactive understanding of performed silence. By explicating on and through silence, I move between and around intangibility, absence, breath, pause, and gesture, between the *not* and the *knot*, thus finding new ways—often through my own instrument—of picturing silence.

Linking white spaces (*les blancs*) and structure in relation to his own poem “Musicienne de Silence,” the French poet Stéphane Mallarmé “evokes a singular silence, which is not the opposite of music, its negation, nor its absence, but which plays the same role as white space on the sheet of paper” (Margel, 2018, p. 30). Mallarmé himself advanced this argument in a letter to Charles Morice in 1892:

*L’armature intellectuelle du poème se
dissimule et tient—a lieu—dans l’espace qui
isole les strophes et parmi le blanc du papier :
significatif silence qu’il n’est pas moins beau
de composer, que les vers.*

The intellectual armature of the poem hides
and holds—takes place—in the space which
isolates the strophes and amongst the white
of the paper: significant silence which is not
less beautiful to compose, than verse.

(Mallarmé, 2003, p. 659)

Despite the intervening years and the disparities between composing text and performing music, I suggest that Mallarmé’s evocation can hold for contemporary sound experience and that it coincides with many of my conclusions. He feels the visible space around the strophes and the whiteness of the paper to be as beautiful as the audible/inaudible text. Moreover, the white space is not ornament nor decoration; it is the intellectual framework (*armature intellectuelle*) around which the poem forms. Mallarmé’s term “*significatif silence*” corresponds well to my concept of eloquent silence. The markers of the silence are signifying, signing the communication of the silence, and pre-echoing Barthes.

I have focused in this research on captions/markers which reveal the dimensions of silences. But silence remains *slippery* (Bataille), *ineffable* (Jankélévitch), and *indeterminate* (Busoni). In the wake of all these examples, there are still so many approaches, and so many models to choose from. Silence can be regarded as the *canvas* on which musical notes become audible. Littlefield focusses on the *frame* that silence forms around the music. But for Cage, the canvas of silence *becomes/is already* music. Jankélévitch mostly considers silences as untouchable, ungraspable. As a kind of implicit response, I often approach silences as *thingy* (Voegelin), *multidimensional* (Margulis), and *tangible*. In yet other examples, silences arise from music, as something apart or spiritual, which may be felt as *behind* (Picard) or *beneath* (Merleau-Ponty) the music. Cobussen describes Pärt's music as orbiting *around* a silence that it can never reach. There is no one model of silence that can match all the examples presented here.

From the viewpoint of my own artistic practice, Barthes's model, though perhaps imperfect, supports my suggestion of markers for silence and seems to describe many of the silences I have performed. More poetically, the "significant silences" of Mallarmé map onto the artistic research I undertook in this study. Mallarmé's evocation of white space, his interest in the hidden and the revealed, and his recognition of silences as an embodiment of structure, as both glue and isolation, as both *hiding* and *holding*, as *knot* and *not*, illustrate the audible and visible knowledge(s) revealed by the musician through silence.

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Summary

In this research project, I have experimented with the performance of silences. When a performer discerns the role that silence plays (*how it acts* and *what it does*), new ideas may emerge for performing silence. What are the contexts that potentially affect musical silences? What are the silences in which performers or audiences willingly or unwillingly participate? And how can performers engage with the multiple dimensions of silence in composed music? Through these research questions, rooted in the act of performance, I have explored the relationship between notated rests and “audible” silences, focusing on the role of visible, audible, and notational markers. I propose the term markers to describe cues or signals that communicate information about silence and sound. Markers may impose, summon, or shape the perception of silence. Markers can include sounds, gestures, and embodiments. Some markers—architectural, ritual, or iconic—exist outside the notated music as meta-silences, emerging from the performance context and, as such, influencing the audience’s experience.

Chapter 1 introduces the varied terminologies and manifestations of silence, a concept that holds multiple meanings across disciplines. Silence can be societal, religious, meditative, political, or punitive. In music, it functions as a performed element, even if it is not purely silent in an acoustic sense. Moments in which silence is intentionally depicted by the composer or performer are thus “performed silences.” In my research, I experiment with how performers engage with silence, emphasizing that the visual aspect often outweighs the auditory, as gestures and embodiment communicate silence to the audience.

Silence is difficult to qualify and quantify. Silence can be connective or disconnective in musical experience, a duality I describe as not/knot. Indeed silence is often perceived as tangible by musicians. The artistic research process calls for some techniques of comparison and some fair methods of cognitively, creatively, and affectively approaching performed silences. My methods for studying silences include video analysis of performances (my own and others), reflective imitation, re-enactment videos, and waveform analysis of digital audio. These techniques are overlapping and complementary and offer multiple perspectives on each examined silence.

Chapter 2 offers a theoretical framework, including discussions of framing, notation, and gesture, and an examination of the multidimensionality of silence. This research draws from a range of interdisciplinary sources, including musicology, performance studies, phenomenology, and cognitive science. Key theoretical perspectives include Roland Barthes’s notions of the neutral and the gesture, Richard Schechner’s performance studies concepts, Richard C. Littlefield’s work on silence as a frame, Barbara Lüneburg’s

methodologies of re-enactment, and Elizabeth Margulis's theory of the multidimensionalities of silence.

The system of notating rests is unequivocal, but the means of expressing silence in performance are diverse, complex, conflicting, and overlapping. These means are commonly understood amongst musicians but remain tacit insofar as they have not been studied and documented systematically. Traditional notational symbols overlook the multidimensional contingencies and potentialities of performing silence. Moreover, this knowledge is tacit in the sense that most performed techniques of expressing silence are encoded through physical embodiments that are not themselves notated.

Notated rests within the printed score communicate duration and sometimes pulse, but little else. Thus, multiple options for interpretation arise from these rests: Often more so than the notes, the rests in a score give the performer the liberty to reveal or create—an affordance to communicate via gestures and embodiments.

Chapter 3 is an archive that proposes thirty examples of silence from the piano repertoire. These examples are presented via performance and personal reflection and illustrated with explanatory videos. They demonstrate the use and kinds of visible and audible markers, the potential multidimensionality of performed silences, and the role of silence as both connector and separator. The archive testifies to the incredible heterogeneity of performed silences and their resistance to taxonomies, for the silences offer no easy synthesis. This archive is, therefore, a “noisy” archive in the sense of being unpredictable and irregular, like a staticky television signal or an intermittent radio transmission from outer space. By creating an archive that examines and illustrates different silences in performances of composed music, I have illustrated and tried to open up new options for understanding and engaging with silence. The silences in this archive are primarily drawn from the 20th and 21st-century piano repertoire, as that is the performing tradition I am most familiar with. I have drawn connections outside the European repertoire where possible, hoping that this research can serve as a stepping stone for myself and others to explore beyond these limitations.

My exploration of silences has been furthered through the analysis and re-performance of three canonical works: *4'33"* by John Cage, opus 111 by Ludwig van Beethoven, and *Ballet mécanique* by George Antheil. I studied other performances and my own and used reflective imitation and re-creative videos as methods for investigating the means of performing silences.

In Chapter 4, I compare performances of John Cage's *4'33"* found online, ranging from a professional film by Cage specialist David Tudor to quirky experiments by amateurs. These examples present alternative ways of marking silence; new embodied attitudes for performing silence; confluences of time, listening, and silence; and contemporary

relationships between performer and audience. My observations have affected my own performance practice, as I use fewer guidelines now than I did before, and thus, a more open view of what 4'33" can present. This expanded view might encourage the openness Cage championed but also affords new interpretations he might not have imagined.

In Chapter 5, I have selected six well-known pianists and analyzed their performances of Beethoven's last piano sonata as a way of understanding embodied silence in classical music. This chapter focuses on visual embodiments of silence in the concert hall. Silences separate the fanfares that open the sonata, and the notes of the fanfares mark the silences but are equally marked by the silences. A heterogeneous performance tradition has developed around these fanfares. Key agents are teaching traditions, the score, associated texts, concert hall acoustics, the rituals and socio-cultural context of the concert, and factors such as piano, stage, and costumes. Looking-at and listening-to the silences of virtuoso pianists gave me a chance to pull apart the gestures and to experiment with them. They are an unwritten vocabulary for communicating silence's multidimensionality to the audience. This method of analyzing through reflective imitation may also be helpful for other performers to make more thoughtful decisions about silences. While traditions around Beethoven's music impose structured interpretations of silence, they paradoxically allow for unexpected creative gestural freedom.

Chapter 6 investigates silences in *Ballet mécanique*. Antheil's use of brutal, measured silence encouraged me to question how musical silence is notated and made visible for a performer, how it is marked by time, and what its dimensions might be. I was particularly fascinated by Antheil's assertion about the silences that he was "moving time without touching 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 presence that is as communicative as any musical note. Using a choreographed performance with ballet and electronics as an example, I have investigated 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 and yet as tangible communications of frenetic pulse and speed.

Chapter 7 suggests some conclusions about markers, the importance of the visual, and the (dis)connectivity of silence. There are many markers (especially audible and visible) that a performer can use, which lead the audience to expect silence. They are signals that the performer employs to embody silence or make it eloquent. Frequently, silences are multidimensional, communicating information about temporality, function, and emotion.

The use of markers by the performer shapes the audience's experience of these dimensions. Composers might perhaps use these vocabularies to enrich their scoring. By examining performed silences, musicians can better understand the functions of silence. The value of picturing embodiments is that performers might use multiple gestural vocabularies to augment their interpretations of silence.

This artistic research project highlights the complexity of silence in performance. My research into performed silence has deepened my understanding of its visual and gestural dimensions, leading me to approach each silence with greater awareness of its connective or disconnective potential, with care for its tangibility, and with attention to its dimensions. But it will certainly also be of particular interest to other pianists and potentially appeal to a wider audience interested in absence, tangibility, visualization, gesture, and embodiment.

Samenvatting

In dit onderzoeksproject heb ik geëxperimenteerd met de uitvoering van stiltes. Wanneer een uitvoerend musicus zich bewust wordt van de rol die stilte speelt (*hoe stilte zich gedraagt en wat stilte doet*) kunnen er nieuwe ideeën voor het uitvoeren van stilte ontstaan. Welke contexten kunnen muzikale stiltes beïnvloeden? Aan welke stiltes nemen uitvoerende musici of toehoorders (on)vrijwillig deel? En hoe kunnen uitvoerende musici omgaan met de diverse dimensies van stilte in gecomponeerde muziek? Deze onderzoeksvragen, geworteld in de uitvoeringspraktijk, vormen de basis voor mijn verkenning van het verband tussen genoteerde rusten en 'hoorbare' stiltes. Daarbij heb ik me gericht op de rol van zichtbare, hoorbare en genoteerde tekens. Met de term *tekens* (*markers* in het Engels) verwijs ik naar aanwijzingen of signalen die informatie over stilte en klank overbrengen. Tekens kunnen de waarneming van stilte opleggen, oproepen of vormgeven; zij kunnen klanken, gebaren en andere lichamelijke uitdrukkingsvormen omvatten. Sommige tekens (architecturale, rituele of iconische) bestaan buiten de genoteerde muziek als meta-stiltes; zij doemen op uit de context van de uitvoering en beïnvloeden als dusdanig de ervaring van de toehoorders.

Hoofdstuk 1 behandelt de uitgebreide terminologie en uitingvormen van stilte, een begrip dat verschillende betekenissen heeft in verschillende vakgebieden. Stilte kan maatschappelijk, religieus, meditatief, politiek of bestraffend zijn. In muziek functioneert het als uit te voeren element, ook al wordt daarmee niet noodzakelijk een pure stilte in akoestische zin bedoeld. Momenten waarop stilte opzettelijk verbeeld wordt door een componist of uitvoerend musicus zijn dus 'uitgevoerde stiltes'. In mijn onderzoek ga ik in

op de wijze waarop uitvoerende musici omgaan met stilte. Daarbij benadruk ik dat het visuele aspect vaak zwaarder weegt dan het auditieve, omdat gebaren en belichaming de stilte kunnen communiceren naar het publiek.

Stilte is lastig te kwalificeren en kwantificeren. In de muzikale ervaring kan stilte verbindend of juist scheidend zijn. Deze dualiteit noem ik *not/knot* (niet/verknoping). Stilte wordt vaak als tastbaar ervaren door musici. In mijn onderzoek heb ik verschillende methoden gebruikt om stilte te bestuderen: ik heb diverse uitvoeringstechnieken met elkaar vergeleken om van daaruit stilte cognitief, creatief en affectief te benaderen; ik heb video-opnames van uitvoeringen (van mijzelf en anderen) geanalyseerd, gebruik gemaakt van reflectieve imitatie, *re-enactment* video's en *waveform*-analyses van digitale audiobestanden gemaakt. Deze methodes overlappen elkaar, vulden elkaar aan en boden verschillende invalshoeken voor elke onderzochte stilte.

In Hoofdstuk 2 staat het theoretisch kader centraal. Dit hoofdstuk bevat discussies over framing, notatie en gebaren en een analyse van het multidimensionale karakter van stilte; het is gebaseerd op een breed scala aan interdisciplinaire bronnen, waaronder musicologie, *performance studies*, fenomenologie en cognitiewetenschappen. Tot de belangrijkste theoretische invalshoeken behoren de ideeën over 'het neutrale' en 'het gebaar' van Roland Barthes, Richard Schechner's concepten op het gebied van *performance studies*, het werk van Richard C. Littlefield aangaande stilte als frame, de *re-enactment*-methodiek van Barbara Lüneburg en de theorie over het multidimensionale karakter van stilte van Elizabeth Margulis.

Het muzieknotatiesysteem voor rusten is eenduidig, maar de middelen om stilte uit te drukken in een uitvoering zijn complex en soms tegenstrijdig. Deze middelen zijn over het algemeen bekend bij musici, maar blijven onuitgesproken omdat ze niet onderzocht en systematisch gedocumenteerd zijn. In de traditionele notatie worden de multidimensionale mogelijkheden van het uitvoeren van stilte over het hoofd gezien. Bovendien is deze kennis onuitgesproken in de zin dat de meeste uitvoeringstechnieken om stilte uit te drukken de vorm aannemen van fysieke acties die nauwelijks of niet genoteerd (kunnen) worden.

Genoteerde rusten in de gedrukte partituur geven duur en soms ritme aan, maar weinig anders. Daarom bieden rusten zoveel verschillende interpretatiemogelijkheden. Vaak geven ze, nog meer dan de noten, de uitvoerend musicus de vrijheid om iets naar voren te brengen of te creëren; de mogelijkheid om te communiceren met gebaren en het hele lichaam.

Hoofdstuk 3 is een archief met 30 voorbeelden van stilte uit het pianorepertoire. Deze voorbeelden worden gepresenteerd in de vorm van uitvoeringen en persoonlijke reflecties en toegelicht met verklarende filmpjes. Ze tonen de soorten zichtbare en hoorbare tekens

en het gebruik ervan, het potentieel multidimensionale karakter van uitgevoerde stiltes, en de rol van stilte als iets dat zowel verbindt als scheidt. Het archief getuigt van de enorme heterogeniteit van uitgevoerde stiltes en het feit dat classificatie lastig is omdat ze niet gemakkelijk onder één noemer te brengen zijn. Het is daarom een ‘lawaaig’ archief, onvoorspelbaar en onregelmatig, zoals witte ruis op een televisie of zoals flitsen van een radiosignaal uit de ruimte. Met het creëren van dit archief voor mijn onderzoek en als illustratie van verschillende stiltes in uitvoeringen van gecomponeerde muziek, toon ik nieuwe opties om stilte te begrijpen en uit te voeren. De stiltes in dit archief komen voornamelijk uit het twintigste- en eenentwintigste-eeuwse pianorepertoire, omdat ik met deze uitvoeringstraditie het meest vertrouwd ben. Ik heb waar mogelijk verbanden gelegd met niet-Europees repertoire. Hopelijk biedt dit onderzoek voor anderen een opstapje naar verkenningen buiten deze grenzen.

Een belangrijk onderdeel van dit onderzoek naar stiltes was de analyse en heruitvoering van de volgende drie belangrijke werken: *4'33"* van John Cage, opus 111 van Ludwig van Beethoven, en *Ballet mécanique* van George Antheil. Ik heb uitvoeringen van anderen en van mijzelf bestudeerd en gebruikgemaakt van reflectieve imitatie en herscheppende video-opnamen als methoden om het uitvoeren van stiltes te bestuderen.

In hoofdstuk 4 vergelijk ik een aantal online uitvoeringen van *4'33"* van John Cage, variërend van een professionele opname van Cage-specialist David Tudor tot curieuze experimenten van amateurs. Deze opnames bieden voorbeelden van alternatieve manieren om stilte te markeren; van nieuwe, belichaamde attitudes voor het uitvoeren van stilte; van het samenkomen van tijd, luisteren en stilte; en van de hedendaagse relatie tussen uitvoerend musicus en publiek. De observaties zijn zeker van invloed geweest op mijn eigen uitvoeringspraktijk: ik gebruik nu minder richtlijnen dan voorheen, en sta daarmee meer open voor wat *4'33"* kan brengen. Deze ruimere blik past bij de openheid die Cage voorstond, maar leidt ook tot interpretaties die hij zich misschien niet had kunnen voorstellen.

Hoofdstuk 5 bevat analyses van een aantal uitvoeringen van de laatste pianosonate van Beethoven door zes bekende pianisten. Hiermee probeer ik belichaamde stilte in klassieke muziek te begrijpen. Dit hoofdstuk is gericht op visuele uitdrukkingen van stilte in de concertzaal. De fanfares waarmee de sonate begint worden onderbroken door stiltes; de fanfares markeren de stiltes, maar worden evenzeer gemarkeerd door de stiltes. Rond deze fanfares is een heterogene uitvoeringspraktijk ontstaan. Deze wordt onder andere beïnvloed door onderwijstradities, de partituur, gerelateerde teksten, de akoestiek van concertzalen, de rituelen en sociaal-culturele context van het concert, en actoren zoals de piano, het podium en de concertkleding. Het zorgvuldig kijken en luisteren naar de stiltes van zes virtuoze pianisten maakte het mogelijk hun gebaren te ontleden en was voor

mezelf een aanleiding om zelf met gebaren te gaan experimenteren. Zij vormen een ongeschreven vocabulaire om het multidimensionale karakter van stiltes over te brengen op het publiek. Deze methode van analyse door reflectieve imitatie kan ook andere uitvoerende musici helpen om meer doordachte beslissingen over stiltes te nemen. Hoewel in de tradities rond de muziek van Beethoven gestructureerde interpretaties van stilte worden opgelegd, is daarbinnen paradoxaal genoeg ook ruimte voor een onverwachte creatieve vrijheid voor het maken van gebaren.

Hoofdstuk 6 onderzoekt stiltes in *Ballet mécanique*. Antheils gebruik van harde, afgemeten stiltes vormde de aanleiding om te onderzoeken hoe muzikale stilte wordt genoteerd en zichtbaar gemaakt voor een uitvoerend musicus - hoe zij bepaald wordt door het tempo en welke dimensies ze heeft. Ik was vooral gefascineerd door Antheils uitspraak dat hij met stiltes 'tijd in beweging brengt zonder die aan te raken'. De tekens waarmee deze stiltes worden aangegeven kunnen visueel zijn, zoals de bewegingsloze mechanische instrumenten op het podium, of genoteerd, zoals in de nauwgezette notatie van de rusten in de partituur. Beide typen tekens staan centraal in dit hoofdstuk. Zij dienen niet alleen om afwezigheid aan te duiden; ze bepalen ook hoe de toehoorders anticiperen en reageren op wat er te horen valt. Stilte wordt daardoor een tastbare, gespannen aanwezigheid die net zo veelzeggend is als een muzieknoet. Ik heb een gechoreografeerde uitvoering met ballet en elektronica gebruikt als voorbeeld om de rol van deze stiltes in Antheils werk te onderzoeken. Daarbij heb ik bestudeerd hoe de stiltes functioneren: niet zozeer als leegtes of leemtes, maar als integrale, krachtige, wezenlijke onderdelen van de compositie. De genoteerde rusten zijn nadrukkelijk maar niet verbindend. Je zou ze als een 'niet' (*not*) in de uitvoering kunnen omschrijven, en ze tegelijkertijd opvatten als een tastbare communicatie van voortrazend ritme en tempo.

Hoofdstuk 7 bevat enkele conclusies over tekens, het belang van het visuele, en het verbindende/scheidende van stilte. Er zijn veel tekens (vooral hoorbare en zichtbare) die een uitvoerend musicus kan gebruiken om een verwachting van stilte te wekken bij het publiek. Een uitvoerend musicus zet die in om stilte te belichamen of betekenisvol te maken. Stiltes zijn vaak multidimensionaal, en een middel om informatie over tijdelijkheid, functie en emotie over te brengen. Het gebruik van tekens door de uitvoerend musicus geeft vorm aan de wijze waarop het publiek deze dimensies ervaart. Componisten zouden deze vocabulaires kunnen gebruiken om hun partituren te verrijken. Door uitgevoerde stiltes te onderzoeken kunnen musici de functies van deze stiltes beter begrijpen. De waarde van het in beeld brengen van het gebruik van het lichaam is dat uitvoerende musici meerdere en diverse gebaren kunnen gebruiken om hun interpretaties van stilte te verrijken.

Dit artistieke onderzoeksproject vestigt de aandacht op de complexiteit van stilte bij uitvoeringen. Mijn onderzoek naar uitgevoerde stilte heeft mijn inzicht in de visuele dimensies van stilte en de dimensies met betrekking tot het gebruik van gebaren verdiept. Hierdoor ben ik stilte gaan benaderen met een sterker bewustzijn van haar verbindende of scheidende potentie, met zorg voor haar tastbaarheid, en met aandacht voor haar vele gedaantes. Het onderzoek zal echter zeker ook interessant zijn voor andere pianisten en mogelijk een breder publiek aanspreken dat belangstelling heeft voor afwezigheid, tastbaarheid, visualisatie, gebaar, en belichaming.

Curriculum Vitae

Guy Livingston was born in Tennessee in 1967. He holds a Bachelor of Arts degree *cum laude* from Yale University (New Haven, 1984–88), a Master's of Music from the New England Conservatory of Music (Boston, 1989–91), and an *Uitvoerend Musicus* degree from the Royal Conservatory of the Netherlands (The Hague, 1995–97).

Livingston is a pianist, researcher, and teacher. His practice focuses on contemporary and historical avant-gardes, particularly Dadaism, Futurism, the French Situationists, and Black Mountain College.

As a soloist, he has appeared with the Chicago Symphony, the Orchestre Nationale de France, and Ballet Zürich. His recordings include premieres by John Cage, George Antheil, William Bolcom, and Louis Andriessen. He has recorded for New World, Wergo, and Mode Records.

He has directed radio documentaries for Australian Broadcasting, RTÉ (Ireland), WFMT (Chicago), and Concertzender (Utrecht). During the pandemic, he hosted “The Bug,” a podcast about spies and music, from an abandoned embassy building in The Hague. His productions for Irish National Radio won the Bronze medal in 2018 for best music documentary at the New York International Festival Radio Awards, and the Silver medal in 2019 for best historical documentary. Livingston has done extensive work with silent films, both contemporary and from the 1920s. An expert on Dadaism, he has recontextualized “lost” films and manuscripts dating back to 1912.

Livingston teaches at the Royal Academy of Art (KABK) in The Hague. Strongly committed to bringing music to many kinds of audiences, he produced over a hundred hospital concerts and workshops during his directorship of *Association Le Piano Ouvert*. Livingston has appeared in the media as an expert on topics as varied as anechoic chambers and torpedo guidance systems, including a role in the Netflix film *Bombshell*, a documentary about Hedy Lamarr. His kinetic sculpture “Quiet Spheres” orbited Earth on the International Space Station in 2022.